APPLICATION BY NATIONAL GRID ELECTRICITY TRANSMISSION PLC

FOR

A DEVELOPMENT CONSENT ORDER

PURSUANT TO SECTION 37 PLANNING ACT 2008

FOR THE NORWICH TO TILBURY ELECTRIC LINE ABOVE GROUND

PLANNING INSPECTORATE REFERENCE: EN020027

RELEVANT REPRESENTATIONS (DETAILED)

On behalf of :

(1) Olive Anne Godbold, Diana Joy Johnson and Stephen Andrew Baker
Interested Party Reference Number: [redacted]

(2) Thornbush Energy Limited
Interested Party Reference Number: [redacted]

(3) The Trustees of the Godbold Discretionary Settlement Trust
Interested Party Reference Number: [redacted]

(4) The Executors of the Estate of Herbert Earthy Godbold
Interested Party Reference Number: [redacted]

(5) The H&O Godbold Partnership
Interested Party Reference Number: [redacted]

Submitted on 19 December 2025

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EXECUTIVE SUMMARY

INTRODUCTION

1. These are the particularised Relevant Representations of the Interested Parties, references: [redacted] (together, "the Client"), together with such evidence as has been practicably able to be garnered on the basis of the Application by 19th December 2025.

SUMMARY

2. The Client has a land interest in HM Land Registry Title Reference SKL 316 171 and known as [redacted] Within the extent of [redacted] the Client carries on a farming business of arable seasonal crops using it current soil of apparent Grade 2 best and most versatile agricultural land together with some livestock, on the fields making up that Farm. Embedded in the agricultural land is an extensive network of mole drainage and land drainage by which the land remains sustained for its use. The Farm is served by a yard and a dwelling farmhouse to its Eastern end. The Farm is isolated from the highway network save at its Eastern end that connects the yard and farmhouse to the highway, and a narrow field access on a bend in its South-West corner. Within the Farm, internal access is exclusively by means of access routes running East to West through the centre, partly North and partly South, and with limited connecting routes running North to South.

3. The Farm is traversed, by transmission lines above ground and by two distribution lines also above ground, that run from the North-West of the Farm from the Bramford Substation in a Southerly and in a South-Eastward direction respectively. The transmission line and Bramford Substation are operated under a transmission licence from OFGEM by National Grid Electricity Transmission PLC, and the distribution lines emerging from that Substation are operated under a distribution licence by Eastern Power Networks PLC, respectively and for the respective statutory purposes of each of those statutory undertakers. Each of these statutory undertakers benefits from subsisting planning permission for development (including "*any other development carried out in, on, over or under the operational land of the undertaking"*) for their respective purposes under Article 3(1) and Schedule 2, Part 15, Class B to the Town and Country Planning (General Permitted Development)(England) Order 2015/596, subject to Class B2 conditions that

include a requirement that: " land is restored as soon as reasonably practicable to its condition before the development took place". Such development would accelerate replacement of the distribution line and preserve the existing soil quality.

4. Since 4th October 2024, National Grid benefits from *The National Grid (Bramford to Twinstead Reinforcement) Order 2024* and since August 2021 it has known of the Client and land interests through land referencing for that Order. National Grid has also known of the requirement of National Policy Statement EN-1 by which the Secretary of State has ensured through Parliament's procedure under section 5(2) of the Planning Act 2008 that the designated timescale for the urgent (even critical) need for electricity infrastructure remains "by 2035". Somewhat surprisingly, National Grid has chosen to accelerate delivery of the same infrastructure "by 2030" notwithstanding that Government Policy "Action Plan: Clean Power 2023" on *wider* Climate Change Adaption is encompassed *within* section 5(5) of that Act and thereby cannot be elevated notionally to equate with or override the designated NPS by avoiding the section 5 procedure and Parliament's intention in designating EN-1, or by weight, without rendering section 5(2) otiose Parliament's *own* statutory procedure.

5. Properly interpreted in line with relevant common law requirements and principles, the (first) draft Development Consent Order ("DDCO") is structurally flawed including because it would: unlawfully authorise works by a party (UK Power Networks Holdings Limited) *not* licensed by OFEM to either transmit or distribute electricity; unlawfully encompass as "associated development" development for the purpose of Eastern Power Networks PLC; unlawfully includes legislative provisions against the Supreme Court's decision in *Hillside Parks Limited v Snowdonia National Park Authority* [2022] 1 WLR 5077 in the face of the Government's stated position of 11th September 2025 to "not" legislate against that decision (including by secondary legislation) and by which stated position the authorizing Secretary of State is required to remain consistent with the Government of which he remains a part; includes open ended Requirements devoid of clear constraints and ensured particular environmental objectives, together with an absence of current relevant evidence, in breach of Regulation 4 of the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017.

6. The DDCO seeks authorisation for outline development inside a series of notional boxes inside of which, nevertheless, it would situate metal pylons of

known configuration, dimensions and spacing to support transmission cables attached to Bramford Substation of known dimensions to be extended by a knowable dimension. In a unorthodox departure from simply providing for micro-siting these known structures, and unlawfully so, National Grid Electricity Transmission PLC relies on the "*Rochdale*" Envelope and simultaneously has inflated the volumes of its envisaged boxes by reference to the commercial convenience of "value engineering" by third parties in the face of designated NPS EN-1 objectives including to minimise use of best and most versatile quality agricultural land such as that of the Farm.

7. In that context, by reference to **Appendix 6-1** hereto, a simple comparison of **Plan A** of the Farm overlaid with **Plan G** illustrating the development envisaged to be authorised for works (including "*to such extent downwards as the undertaker considers necessary or convenient"* by: transmission licensee National Grid Electricity Transmission PLC; UK Power Networks Holdings Limited; and distribution licensee Eastern Power Networks PLC), graphically illustrates their resulting near total *physical* destruction of the Farm land, their resulting extended denial of access to the Western two-thirds of the Farm for the period of the (illustrative) construction period, cessation of the Farm as a viable going concern contributing food for the nation from the current soil accepted as the categorised as within the best and most versatile agricultural land in England.

8. Lastly, with irony, the objective evidence shows that National Grid Electricity Transmission PLC has unlawfully sought by its Application (made on 29th August 2025) powers as a "first resort" to take the Client's land against that citizen's will contrary to Parliament's intention to protect that citizen (pursuant to section 5(2) of the Planning Act 2008 and paragraph 2.6.3 of the Secretary of State's NPS EN-1) by elevating in the *national* public interest that such powers can *only be sought* as a "last resort" to override the public interest for a nationally significant infrastructure project in those circumstances. That evidence includes that of the disclosure for the first time on the 12th December 2025 by the agent of National Grid Electricity Transmission PLC to the Client that that Applicant *could not* conclude a voluntary agreement with the Client without yet *first itself* agreeing a development agreement with third parties, and, thereby revealing for the very first time that day that <u>all</u> prior discussions with the Client and their agents to be a meaningless charade. It follows that the national public interest pursuant to NPS EN-1, paragraph 2.6.3 and common law requirements, ensures the Client's127 Plots be excluded in that

national interest from the scope of the compulsory acquisition powers of the DDCO and Book of Reference. There remains a clear breach of all relevant Human Rights in this Application.

9. Further, properly construed and including on evidence as above, the terms of Parliament's sections 120(7) and 122(1)-(3) affirm the same and remain here breached. Applying common law requirements (and which NPS EN-1 paragraph 3.3.63 affirms " Subject to any legal requirements"), the Applicant cannot demonstrate the Client's land is required for the development, nor is required to facilitate or be incidental to the same; nor that there is a "compelling case in the public interest for the land to be acquired compulsorily". Rather, there is a "compelling case in the public interest for the [Client's] land [not] to be acquired compulsorily".

10. An application for the costs, wasted by the Client as having been unnecessarily incurred having to defend their land from being taken against their will, will follow in due course.

SECTION 1 – THE CLIENT AND THE FARM

This Section 1 introduces the Client and [redacted].

1. THE CLIENT AND [redacted] HARM

1.1 For convenience, references to the "Client", as referred to throughout these Relevant Representations, is a summary description for the following statutory Interested Parties together:

1.1.1 Interested Party Reference Number: [redacted]:

Olive Anne Godbold, Diana Joy Johnson and Stephen Andrew Baker – hold interests in land at and occupy ([redacted]";

1.1.2 Interested Party Reference Number: [redacted]:

Thornbush Energy Limited – holds an interest in land at "[redacted]

1.1.3 Interested Party Reference Number: [redacted]:

The Trustees of the Godbold Discretionary Settlement Trust – hold interests in land at "[redacted]";

1.1.4 Interested Party Reference Number: [redacted]:

The Executors of the Estate of Herbert Earthy Godbold – hold interests in land at "[redacted]";

1.1.5 Interested Party Reference Number: [redacted]:

The H&O Godbold Partnership – occupy the land at "[redacted]

1.2 The land at "[redacted]" is shown in the HM Land Registry Title Plan for HM Title Reference SK316171, attached hereto as **Appendix 1 to Section 1**.

1.3 Mr Baker explains in paragraph 1.1 of his Witness Statement that he is: a partner of "H&O Godbold Partnership" who farm and run [redacted]; named as one of the Executors of the Estate of Herbert Earthy Godbold; named as one of the Trustees of the Godbold Discretionary Settlement Trust; a director of Thornbush Energy Limited who; and in his own capacity owns: land interests across [redacted]. Mr Baker gives evidence on behalf of all of the Interested Parties referred to above.

1.4 **Plan A** in **Appendix 1 to Section 6**, Farm Geography, shows the internal subdivision by Fields A-Q of the Farm.

1.5 This further particularised and evidenced Relevant Representation is to be read as standing as that for each of the Interested Parties referred to above and so for convenience is not duplicated for each of those Parties.

SECTION 2 – BY 2035

(A) This Section addresses the legally correct timescale *by which* the development constituted by the "electric lines over ground" between Norwich and Tilbury within section 14(2)(a) of the Planning Act 2008 is to meet the urgent and/or critical need for such infrastructure .

(B) Wider Government Policy on Climate Change and Adaptation (that necessarily qualifies inside the scope of section 5(5) of the Planning Act 2008 cannot result to alter the date of "by 2035" designated by Parliament within section 5(2) for the purposes of that Act as the date by which the urgent or critical need for the NSIP itself requires to be completed;

(C) The NPS EN-1 designated *under* section 5(2) of that Act prescribes a timescale for clean power "by 2035" (and not the earlier date of "by 2030").

(D) By contrast since its Election in June 2024, and more recently pursuant to Government Policy stated in the "Action Plan: Clean Power 2030" (by the new Secretary of State), the Government desires to ensure Clean Power "by 2030" as "Government Policy addressing climate change.

(E) At its highest, the *Government Policy* of the earlier date is confined inside the scope of section 5(5) of that Act so as to preclude that date from overriding the later date of "by 2035" stated in the NPS EN-1 designated for the purposes of the Planning Act 2008 and NSIPs for electric lines.

(F) The assertion by National Grid of a risk to the project if it is not delivered "by 2030" is mere arm waving and purports to usurp the primacy of the statutory designation by Parliament under section 5(2) of NPS EN-1 that requires "by 2035" as the relevant date.

(G) Consequently, National Grid has more time in which to seek to agree a private agreement with our Client for the use and carrying out of project works "by 2035" instead of "by 2030" on their private Farm land.

(H) In that context, this Section addresses the legal basis for that conclusion as follows.

2. THE CORRECT TIMESCALE FOR THE PROJECT: "BY 2035"

2.1 See **Section 9** for the correct construction of statutes in circumstances of compulsory acquisition and the correct approach to evidence in the same circumstances.

2.2 In November 2023 (updated in January 2024), NPS EN-1 was designated under section 5(2) and included:

In April 2021, the government legislated for the sixth carbon budget (CB6), which requires the UK to reduce GHG emissions by 78% by 2035 compared to 1990 levels.[footnote 24] …

3.3.3 To ensure that there is sufficient electricity to meet demand, new electricity infrastructure will have to be built to replace output from retiring plants and to ensure we can meet increased demand. Our analysis suggests that even with major improvements in overall energy

efficiency, and increased flexibility in the energy system, demand for electricity is likely to increase significantly over the coming years and could more than double by 2050 as large parts of transport, heating and industry decarbonise by switching from fossil fuels to low carbon electricity. The Impact Assessment for CB6 shows an illustrative range of 465-515TWh in 2035 and 610-800TWh in 2050…

3.3.15 Based on our whole-system modelling, by 2050, emissions associated with power could need to drop by 95-98% compared to 2019, down to 1-3 MtCO2e. In the interim, to meet our NDC and CB6 targets, we expect emissions could fall by 70-75% by 2030 and 80-85% by 2035, compared to 2019 levels. These figures are based on an indicative power sector pathway contributing to the whole-economy net zero and interim targets.[footnote 42]

3.3.16 If demand for electricity doubles by 2050, we will need a fourfold increase in low carbon generation and significant expansion of the networks that transport power to where it is needed. In addition, we committed in the Net Zero Strategy[footnote 43] to take action so that by 2035, all our electricity will come from low carbon sources, subject to security of supply, whilst meeting a 40-60% increase in electricity demand. This means that the majority of new generating capacity needs to be low carbon…

3.3.57 Government has committed to reduce GHG emissions by 78% by 2035 under carbon budget 6.[footnote 61] According to the Net Zero Strategy[footnote 62] this means that by 2035, all our electricity will need to come from low carbon sources, subject to security of supply, whilst meeting a 40-60% increase in demand…

3.3.82 Government has committed to reduce GHG emissions by 78% by 2035 under CB6.[footnote 65] According to the Net Zero Strategy[footnote 66] this means that by 2035, all our electricity will need to come from low carbon sources, subject to security of supply, whilst meeting a 40-60% increase in demand.

3.3.83 Given the urgent need for new electricity infrastructure and the time it takes for electricity NSIPs to move from design conception to operation, there is an urgent need for new (and particularly low carbon)

electricity NSIPs to be brought forward as soon as possible, given the crucial role of electricity as the UK decarbonises its economy…

4.2.1 Government has committed to fully decarbonising the power system by 2035, subject to security of supply, to underpin its 2050 net zero ambitions. More than half of final energy demand in 2050 could be met by electricity, as transport and heating in particular shift from fossil fuel to electrical technology.

2.3 In June 2024, the new Labour Government was formed and its manifesto included "a national mission for clean power by 2030". See **Appendix 2 -1** , House of Commons Library, Research Briefing CBP-10182: Clean Power Targets.

2.4 In November 2024, the National Energy System Operator ("NESO") published its report "Clean Power 2030 – Advice on achieving clean power for Great Britain by 2030". See **Appendix 2 – 3**. The report includes:

2.4 Electricity networks

A clean power system in 2030 will need to move more power over greater distances. Without grid expansion, it will not be possible to fully utilise renewables and gas will be needed instead. With no grid expansion, gas generation would only fall to 8.1% of generation, rather than to below 5% as needed for a clean power system, despite progress in other areas. Timely and complete delivery of all required network projects is a major infrastructure challenge.

The networks required for delivering clean power will need investments in transmission and distribution. These investments will fall into different categories driven by various factors. They include strengthening the transmission network to enable the efficient transfer of clean power from generation sites to areas of demand. Additional infrastructure will be necessary to connect individual power generators and meet specific demand requirements. Other projects are also required to ensure a safe, secure and resilient network. The scale of investment in all these categories is expected to be significant. Similarly, investments will be required in the distribution networks to connect new sources of power generation and demand. This will facilitate the safe transfer of power within the network, as well as to and from the transmission network…

Wider transmission for clean power

The wider transmission network build programme to 2030 was set out in the Pathway to 2030 report[10] in 2022. It requires up to £60 billion of cumulative investment to deliver around 1000 km of onshore and over 4500 km of offshore network and enabling projects. This would more than double the total built in the last 10 years. Alongside the 2030 network delivery, further reinforcements must proceed to support continued growth in demand and renewables in the 2030s, and progress needs to be maintained to ensure timely delivery of later network projects

The delivery of the 2030 transmission network is underway based on existing recommendations and plans. In the Pathway to 2030 report, 94 wider transmission projects were recommended across Great Britain. This has since been revised to 88 projects, after detailed design work by transmission owners (TOs) and NESO. All TO investment projects will need to be funded through the price control mechanism.[11]

For this report, we assessed whether the Pathway to 2030 recommendations would be able to deliver the clean power pathways set out in Chapter 3. We also considered the impact of any of these network projects being delivered after 2030 and the advantages of bringing forward any projects planned for after 2030, if feasible. We considered both the impact on our clean power metrics, especially any extra need for gas generation resulting from transmission constraints, and the added cost to consumers caused by constraints.

We conclude that to meet clean power in an efficient way in 2030, of the 88 wider transmission projects, 80 must be delivered by 2030.

2.5 The diagram on page 33 identifies: a) 9 built projects; b) 68 projects “on track”; and c) “3 works. Need to be accelerated”.

2.6 Figure 11 of that report shows a Map of 2030 transmission network reinforcements for a clean power system, that identifies on a map of Great Britain by means of magenta coloured lines traversing East Anglia two lines: a) one linking the coast of East Anglia to that of Kent; b) one linking Norwich to Tilbury.

2.7 The report then says this: (Emphasis added)

The need for pace in delivering the clean power transmission network

As set out in the Electricity Networks Commissioner report, 12 speeding up the delivery of strategic

transmission is both critical and challenging. Stakeholders understand that it is crucial to deliver at pace and that decisions made for clean power by 2030 must not inadvertently disrupt in-train critical programmes of project. To have a chance of bringing forward delivery dates on a number of key projects would require significantly accelerating and fast-tracking Development Consent Order processes and changes to the Town and Country Planning Act.

Three projects[13] have been identified as critical to delivering a network which supports the clean power pathways, but ***at present have delivery dates after 2030****. Support is therefore needed to bring these projects forward for 2030 delivery. These are projects in East Anglia and in the southeast that are critical for connecting offshore wind in the North Sea and supporting the flow of clean power. Our assessment suggests that without these projects, the clean power objective would not be achieved, leaving the clean power target short by around 1.6% in 2030 (assuming a typical weather year) and consumers could face extra constraint costs of around £4.2 billion in 2030…*

To date, nine of these have been built and 68 are in development, with expected delivery dates by 2030 or earlier. Three projects identified as being critical to clean power have a current delivery date after 2030. These projects will need to be accelerated to 2030 delivery.

To bring delivery forward to 2030, urgent and significant action is needed on removing the key challenges to delivery - including regulatory funding, supply chain and accelerated planning processes.

2.8 Footnote 13 states:

These projects are Norwich to Tilbury (these projects have two codes in our network planning processes AENC and ATNC), Sea-Link (SCD1).

2.9 It can be seen that "AENC and ATNC" are a mere footnote to the report.

2.10 The project codes "*AENC and ATNC"* together comprise the project that is the nationally significant infrastructure project under section 14(2)(a) of the Planning Act 2008 under the DCO Application dated 28th August 2025.

2.11 In December 2024, the Secretary of State published his "Action Plan" for Government: "Clean Power 2030". See **Appendix 2 – 3**. The Action Plan included: (Emphasis added)

Defining the Clean Power target

Clean Power means that by 2030, Great Britain will generate enough clean power to meet our total annual electricity demand, backed up by unabated gas supply to be used only when essential.

2.12 To that end as a matter of Government Policy about wider Climate Change (and not as a result of a requirement of the designated NPS EN-1 for the narrower purposes of the Planning Act 2008), National Grid has accelerated its NSIP from completing before 2035 to completing before 2030.

2.13 In Document **APP-130**, Project Description, page 38, Image 4.1 "Indicative Construction Programme" shows in coloured Row 2 the works to Bramford Substation concluding before an "ACL Date" of December 2031, including "Energisation" and "Demobilisation" occurring during 2031. The same completion dates of the ACL Date and "Demobilisation" apply to all of the other works. Consequently, National Grid evidences its works concluding by December 2031 following energisation by December 2030.

2.14 In Document **APP-059**, Statement of Reasons, Section 3.3.7 *et seq.* provide:

3.3.7 In November 2024, NESO published its independent analysis on how the Department for Energy Security and Net Zero (DESNZ) can achieve its ambitious clean power goal…

3.3.10 The report identifies the Project as critical to delivering a network which supports the clean power pathways, but at present has a delivery date after 2030…

3.3.13 Following the publication of the NESO Clean Power 2030 report, the government published the Clean Power 2030 Action Plan (UK Government, 2025) setting out the government's view of the pathway to 2030 and setting targets required to achieve clean power by 2030. The Action Plan outlines strategies to accelerate the transition to a cleaner energy system by 2030, focusing on reducing greenhouse gas emissions, increasing renewable energy use, and promoting energy efficiency.

2.15 Section 7.4.9, provides:

Compulsory acquisition powers will only be exercised where it appears that negotiations are unlikely to be completed or to be completed in time. However, without the powers of acquisition being compulsory, there is a risk that the urgent national need for the Project could not be met because the land and rights required in the Order land may not be capable of being assembled.

2.16 However, pursuant to section 5 of the Planning Act 2008 provides:

1) The Secretary of State may designate a statement as a national policy statement for the purposes of this Act …

2) In this Act "national policy statement" means a statement designated under subsection (1) as a national policy statement for the purposes of this Act.

3) …

4) A statement may be designated as a national policy statement for the purposes of this Act only if the consultation and publicity requirements set out in section 7, and the parliamentary requirements set out in section 9, have been complied with in relation to it and—

a) the consideration period for the statement has expired without the House of Commons resolving during that period that the statement should not be proceeded with, or

b) the statement has been approved by resolution of the House of Commons—

i) after being laid before Parliament under section 9(8), and

ii) before the end of the consideration period…

5) …

6) If a national policy statement sets out policy in relation to a particular description of development, the statement must set out criteria to be taken into account in the design of that description of development.

7) A national policy statement must give reasons for the policy set out in the statement.

8) The reasons must (in particular) include an explanation of how the policy set out in the statement takes account of Government policy relating to the mitigation of, and adaptation to, climate change….

2.17 NPS EN-1 and EN-3 have been "designated" under section 5(2) "for the purposes of [the Planning] Act [2008]". The Secretary of State's "*Clean Power*

2030 Action Plan" is Government Policy; is not an NPS that has been "designated" under section 5 of that Act; is not endorsed by Parliament for the particular purposes of the Planning Act 2030; is not formulated for the particular purposes of the Planning Act 2030.

2.18 The "Government policy relating to the mitigation of, and adaptation to, climate change" of "Clean Power 2030" tail cannot wag the NPS Dog. Nor can the Government policy of "Clean Power 2030" usurp or subvert the designated NPS EN-1 and EN-5. No amount of "weight" can result to alter the statutory requirements of section 5 so as to elevate from subsection (5) the "*Clean Power 2030 Action Plan*" to the same or higher level as or above Parliament's *designation* of the NPS's in section 5(2). This is because the section 5(2) Government policy on Climate Change adaption cannot be a Parliament-endorsed NPS.

2.19 NPS EN-1 provides: (Emphasis added)

> *3.3.63 Subject to any legal requirements, the urgent need for CNP Infrastructure to achieving our energy objectives, together with the national security, economic, commercial, and net zero benefits, will in general outweigh any other residual impacts not capable of being addressed by application of the mitigation hierarchy. Government strongly supports the delivery of CNP Infrastructure and it should be progressed as quickly as possible…*
>
> *4.2.1 Government has committed to fully decarbonising the power system by 2035, subject to security of supply, to underpin its 2050 net zero ambitions. More than half of final energy demand in 2050 could be met by electricity, as transport and heating in particular shift from fossil fuel to electrical technology.*

2.20 Parliament has designated that:

2.20.1 the date of "by 2035" and not "by 2023" as the relevant date for "*fully decarbonising the power system"*;

2.20.2 the "urgent need for *CNP Infrastructure to achieving our energy objectives"* is "by 2035" and not "by 2030";

2.20.3 The "urgent need" is expressly "*Subject to any legal requirements".*

2.21 NPS EN-5 provides in its Glossary:

"Critical national priority/CNP" - A policy set out at Section 4.2 of EN-1 which applies a policy presumption that, subject to any legal requirements (including under section 104 of the Planning Act 2008), the urgent need for CNP Infrastructure to achieving our energy objectives, together with the national security, economic, commercial, and net zero benefits, will in general outweigh any other residual impacts not capable of being addressed by application of the mitigation hierarchy. CNP Infrastructure is defined as nationally significant low carbon.

3. THE GOVERNMENT'S POLICY CANNOT CHANGE PARLIAMENT'S DESIGNATED DATE

3.1 See **Section 9** for the correct construction of statutes in circumstances of compulsory acquisition and the correct approach in law where there is a choice of *evidence* (including where absence of evidence is itself *evidence*) in the same circumstances.

3.2 In the *Sainsburys'* case, the Supreme Court held: (Emphasis added)

11 Recently, in the High Court of Australia, French CJ said in R & R Fazzolari Pty Ltd v Parramatta City Council [2009] HCA 12, paras 40, 42, 43:

"40. Private property rights, although subject to compulsory acquisition by statute, have long been hedged about by the common law with protections. These protections are not absolute but take the form of interpretative approaches where statutes are said to affect such rights."

"42. The attribution by Blackstone, of caution to the legislature in exercising its power over private property, is reflected in what has been called a presumption, in the interpretation of statutes, against an intention to interfere with vested property rights . . .

"43. The terminology of "presumption" is linked to that of "legislative Intention". As a practical matter it means that, where a statute is capable of more than one construction, that construction will be chosen which interferes least with private property rights.

3.3 The Sainsbury's case requires that the ExA and the Secretary of State confine the "Action Plan Clean Power 2030" date of "by 2030" to within section 5(5) of the Planning Act 2008 and the designated NPS EN-1 and EN-5 inside section 5(2) of the Planning Act 2008. Thereby, the provisions of the Action Plan Clean

Power and its “by 2030” date in law can only be attributed both less status and less weight than the provisions of NPS EN-1 and EN-5, in particular as to the provision in the NPSs of “2035” as the relevant date against which to gauge “urgent need” and also against which date to evaluate how much actual time National Grid (and UKPN) have remaining in which to carry out requirements including as to negotiations with those threatened by the taking of the land against their will under *proposed* compulsory purchase provisions.

3.4 The same Supreme Court affirmed *Prest* in respect of its approach to *evidence*:

10. In Prest v Secretary of State for Wales (1982) 81 LGR 193, 198 Lord Denning MR said:

“I regard it as a principle of our constitutional law that no citizen is to be deprived of his land by any public authority against his will, unless it is expressly authorised by Parliament and the public interest decisively so demands . . .”

3.5 In further respect, the cited extract from *Prest* explained what was meant by “*the public interest decisively so demands . . .*” at the end of that sentence: (Emphasis added)

If there is any reasonable doubt on the matter, the balance must be resolved in favour of the citizen. This principle was well applied by Mr. Justice Forbes in Brown v. Secretary of State for the Environment (1978) P. & C.R. 285 , where there were alternative sites available to the local authority, including one owned by them. He said (at page 291):

“It seems to me that there is a very long and respectable tradition for the view that an authority that seeks to dispossess a citizen of his land must do so by showing that it is necessary … If, in fact, the acquiring authority is itself in possession of other suitable land other land that is wholly suitable for that purpose – then it seems to me that no reasonable Secretary of State faced with that fact could come to the conclusion that it was necessary for the authority to acquire other land compulsorily for precisely the same purpose.”

3.6 “Reasonable doubt” means an *evidenced* doubt and cannot mean a “*Wednesbury*” reasonable desire. That is why Prest refers to “if in fact” as an example of the application of the “the principle”.

3.7 In respect of Time Periods, the "designated" NPS EN-1 makes no provision for a 'deadline' of "2030" nor gauges the express "urgent" need that it already provides for by reference to a year *other than* "2035". These different year criteria remain an important and relevant distinction in this DCO Application because:

3.7.1 the difference between 2035 and 2030 is 5 years; and

3.7.2 the difference between 2035 and 2030 is 5 year less than in which National Grid (and UKPN) have actual time in which to carry out required matters;

3.7.3 the difference between 2035 and 2030 is 5 year in which National Grid (and UKPN) have 5 years more of actual time in which to carry out required matters.

3.8 In this DCO Application:

3.8.1 NPS EN-1 and EN-5 do not "expressly" authorise the urgent need for the DCO Application to be ensured "by 2030" but instead provide a date of "by 2035". Consequently, National Grid has a further 5 years of real time "in hand" in which to undertake all aspects of its Project, including adhering to necessary preconditions before embarking on seeking compulsory purchase powers;

3.8.2 NPS EN-1 and EN-5 do not *evidence* a date earlier than "by 2035" by which the urgent need is to be met. So far as the Secretary of State's and Government's "Acton Plan Clean Power 2030" *evidences* an earlier date for the need to be met, Prest requires the question of that "alternative" date to be determined in favour of the Client and so requires the "by 2035" date alone can apply in this DCO Application;

3.8.3 There is no "express" NPS 'rush' to complete "by 2030" the project for which authorisation is sought;

3.8.4 Wider Government Policy on Climate Change and Adaptation (that necessarily qualifies inside the scope of section 5(5) of the Planning Act 2008 cannot result to alter the date of "by 2035" designated by Parliament within section 5(2) for the purposes of that Act as the

date by which the urgent or critical need for the NSIP itself requires to be completed;

3.8.5 The proposed DCO development can be properly completed pursuant to the designated NPS "by 2035".

SECTION 3 – NG AND UKPN – ALTERNATIVES

(A) This Section addresses the discrete entities of "National Grid" and (so-called) "UKPN" that comprises not one but two different entities (UK Power Networks Holdings Limited, and Eastern Power Networks PLC).

(B) It is clear from the evidence that the cipher in the Draft DCO "UKPN" refers to these two entities of which one alone (Eastern Power Networks PLC) is licensed to "distribute electricity" by the regulator OFGEM.

(C) Consequently, one (but only one) of the entities benefits from a subsisting planning permission under Class B of Part 15 of Schedule 2 to the Town and Country Planning (General Permitted Development) (England) Order 2015/596 ("the GPDO 2015"), and so too does National Grid Electricity Transmission PLC. The existence of that planning permission engenders an actual alternative means by which the licensed distribution entity can develop our Client's Land for electrical lines.

(D) Further, the actual presence in the evidence of the Draft DCO of an ambiguity in the definition of "UKPN":

"UKPN" to mean UK Power Networks Holdings Limited (registered company number 07290590) and/or its affiliate Eastern Power Networks plc (registered company number 02366906).

Is required by the common law in Prest v Secretary of State for Wales, 1983 WL 215478 to be "resolved in favour of" our Client. Such resolution results in removing one or other of those two parties and so preclude the carrying out of development by either company under the Draft DCO.

4. THE STATUTORY UNDERTAKERS: NATIONAL GRID AND "UKPN"

4.1 The Statutory Undertakers

4.1.1 Article 1(1) of the Draft DCO identifies (emphasis added):

4.1.1.1 "National Grid" means National Grid Electricity Transmission PLC (registered company number 2366977);

4.1.1.2 "UKPN" to mean UK Power Networks Holdings Limited (registered company number 07290590) *and/or* its affiliate Eastern Power Networks PLC (registered company number 02366906).

4.2 **The Electricity Act 1989 ("the 1989 Act") provides:**

4.2.1 By section 6(1)(c) of the 1989 Act:

1) The Authority may grant any of the following licences–

c) a licence authorising a person to generate electricity for the purpose of giving a supply to any premises or enabling a supply to be so given ("a generation licence");

d) a licence authorising a person to participate in the transmission of electricity for that purpose ('a transmission licence');

e) a licence authorising a person to distribute electricity for that purpose ("a distribution licence"); …

4.3 **National Grid Electricity Transmission PLC ("National Grid")**

4.3.1 National Grid Electricity Transmission PLC ("National Grid") is a corporate entity charged under section 6(1)(b) of the 1989 Act with the function of supplying electricity by its "transmission" pursuant to, and on the terms of, a statutory licence granted by OFGEM, reference number 02366977 ("the Transmission Licence"). In this DCO Application, the term 'National Grid' is used to refer to *National Grid Electricity Transmission PLC*.

4.3.2 National Grid holds the Transmission Licence for England and Wales, and its statutory duty is to develop and maintain an efficient, coordinated and economical system of electricity transmission and to facilitate competition in the generation and supply of electricity, as set out in the Electricity Act 1989.

4.3.3 National Grid, as the regulated provider of electricity transmission services in England and Wales, is regulated by the Office of Gas

and Electricity Markets (Ofgem). Transmission services include maintaining reliable electricity supplies and offering to construct new transmission system assets for new connections to the National Electricity Transmission System (NETS).

4.3.4 National Grid is the only company licensed to transmit electricity in England and Wales.

4.3.5 National Grid Electricity Transmission PLC benefits from the planning permission granted by Article 3(1) and Schedule 2, Part 15, Class B to GPDO 2015for “transmission”. See below.

4.4 **“UKPN”**

4.4.1 “UKPN” is not a single entity but is a cipher denoting two discrete company entities expressed in the alternative. It is to be noted that wheresoever the cipher “UKPN” is stated in the Draft DCO, it *means* and is to be read as *two* discrete company entities expressed in the alternative.

4.4.2 The Draft DCO contains and evidences that “UKPN” is *either*:

4.4.2.1 UK Power Networks Holdings Limited (registered company number 07290590); *and/or*

4.4.2.2 Eastern Power Networks PLC (registered company number 02366906).

4.4.3 Article 1(1) of the Draft DCO further evidences an actual ambivalence within the phrase “UKPN” as follows:

“UKPN Works” means those works to UKPN assets or equipment forming part of the authorised development, including Work Nos. 25 to 36;

“undertaker”— (a) in relation to the authorised development, means National Grid; and (b) in relation to the UKPN Works and subject to paragraph (5) of article 6 (benefit of Order), includes UKPN;

(The definition of “undertaker” appears to include an assertion that UK Power Networks Holdings Limited qualifies as a statutory undertaker. But see below).

4.4.4 Therefore, the draft DCO definitions evidence the following (by way of example only and emphasis added):

4.4.4.1 " *"UKPN Works" means those works to* [UK Power Networks Holdings Limited (registered company number 07290590) *and/or* its affiliate Eastern Power Networks plc (registered company number 02366906)] *assets or equipment forming part of the authorised development, including Work Nos. 25 to 36;*" "

4.4.4.2 " *"undertaker"— (a) in relation to the authorised development, means National Grid; and (b) in relation to the UKPN Works and subject to paragraph (5) of article 6 (benefit of Order), includes [*[UK Power Networks Holdings Limited (registered company number 07290590) *and/or* its affiliate Eastern Power Networks plc (registered company number 02366906)]" "*;*

4.4.4.3 In Article 6, Benefit of the Order:

6.—(1) Subject to article 7 (consent to transfer benefit of Order), the provisions of this Order have effect solely for the benefit of—

a) National Grid in respect of the authorised development;

b) Subject to paragraph (5), [[UK Power Networks Holdings Limited (registered company number 07290590) and/or its affiliate Eastern Power Networks plc (registered company number 02366906)] in respect of the [UK Power Networks Holdings Limited (registered company number 07290590) and/or its affiliate Eastern Power Networks plc (registered company number 02366906)] Works;

4.4.4.4 In Schedule 1, in relation to our Client's Land and Works No 28 and 29 (Routes PHB and PLD) and the phrase:

"DISTRIBUTION ELECTRIC LINE WORKS (UKPN WORKS) In the district of Mid Suffolk District Council"

Means:

"DISTRIBUTION ELECTRIC LINE WORKS ([UK Power Networks Holdings Limited (registered company number 07290590) and/or its affiliate Eastern Power Networks plc (registered company number 02366906)] WORKS) In the district of Mid Suffolk District Council"

4.4.4.5 In Schedule 1, in "Associated Development": "Such associated development not listed above, within the Order limits, as may be necessary or expedient for the purposes of or in connection with the construction or maintenance of the above Work Nos. or any of them, including— (f) works to alter the position of [UK Power Networks Holdings Limited (registered company number 07290590) and/or its affiliate Eastern Power Networks plc (registered company number 02366906)] apparatus, including construction and installation, decommissioning and partial removal and alteration of electric line, conductors, cables and pylons.

(Paragraph 5, Test (ii) of the Secretary of State's (Planning Act 2008) Guidance on associated development applications for major infrastructure projects (26th April 2013) requires that: "Development should not be treated as associated development if it is only necessary as a source of additional revenue for the applicant, in order to cross-subsidise the cost of the principal development.")

4.4.5 In fact, "UK Power Networks Holdings Limited" is not licensed (as at 4th September 2025) by OFGEM to *distribute* electricity and does not appear on OFEM's list of "All Electricity Licencees" (29/03/2025).

4.4.6 A similar appearing but *different* company "UK Power *Distribution* Ltd", company reference number 06339585, is licensed to distribute electricity as at 4th September 2025 (and was also so licensed as at 29th March 2022). See **Appendix 3-1.**

4.4.7 In its letter dated 24th December 2020 from UK Power Networks Holdings Limited to OFGEM, that entity confirmed that it did not in fact itself hold a licence to distribute electricity but that the discrete entity of Eastern Power Networks PLC was a "licence holding company". See **Appendix 3-2.**

4.4.8 UK Power *Networks* Holdings Limited is not itself an entity subject to the obligations of the 1989 1989 in respect of the *distribution* of electricity.

4.4.9 By contrast, Eastern Power Networks PLC in fact is the sole corporate entity within the scope of the phrase "UKPN" charged under section 6(1)(c) (of the 1989 Act with the function of supplying electricity by its "distribution" pursuant to, and on the terms of, a statutory licence granted by Ofgem, reference number 02366906 ("the Distribution Licence").

4.4.10 It follows that:

4.4.10.1 Eastern Power Networks PLC has an actual statutory purpose in respect of "distribution" that derives from the grant by OFGEM of the distribution licence to that entity whereas UK Power Networks Holdings Limited cannot have that same statutory purpose;

4.4.10.2 Eastern Power Networks PLC currently benefits from the actual planning permission granted by Article 3(1) and Schedule 2, Part 15, Class B to the GPDO 2015 whereas UK Power *Networks Holdings* Limited *cannot* so benefit;

4.4.10.3 By Article 3(1) and Schedule 1, Part 15, Class B of the GDPO 2015 , that planning permission currently subsists and has no requirement for prior approval. The terms of Class B are wide: (Emphasis added)

B. Development by statutory undertakers for the generation, transmission, distribution or supply of electricity for the purposes of their undertaking consisting of—

a) the installation or replacement in, on, over or under land of an electric line and the construction of shafts and tunnels and the installation or replacement of feeder or service pillars or transforming or switching stations or chambers reasonably necessary in connection with an electric line;

b) the installation or replacement of any electronic communications line which connects any part of an electric line to any electrical plant or building, and the installation or replacement of any support for any such line;

c) the sinking of boreholes to ascertain the nature of the subsoil and the installation of any plant or machinery reasonably necessary in connection with such boreholes;

d) the extension or alteration of buildings on operational land;

e) the erection on operational land of the undertaking of a building solely for the protection of plant or machinery;

f) any other development carried out in, on, over or under the operational land of the undertaking.

4.4.11 In *Prest*, the Court of Appeal held that: (Emphasis added)

I regard it as a principle of our constitutional law that no citizen is to be deprived of his land by any public authority against his will, unless it is expressly authorised by Parliament and the public interest decisively so demands: and then only on the condition that proper compensation is paid, see Attorney-General v. De Keyser's Royal Hotel Ltd. (1920) A.C. 508 . If there is any reasonable doubt on the matter, the balance must be resolved in favour of the citizen. This principle was well applied by Mr. Justice Forbes in Brown v. Secretary of State for the Environment (1978) P. & C.R. 285 , where there were alternative sites available to the local authority, including one owned by them. He said (at page 291):

"It seems to me that there is a very long and respectable tradition for the view that an authority that seeks to dispossess a citizen of his land must do so by showing that it is necessary … If, in fact, the acquiring authority is itself in possession of other suitable land other land that is wholly suitable for that purpose – then it seems to me that no reasonable Secretary of State faced with that fact could come to the conclusion that it was necessary for the authority to acquire other land compulsorily for precisely the same purpose."

4.4.12 In the above quotation from *Prest*, one can notionally substitute the Class B planning permission of Eastern Power Networks PLC for "alternative available sites… including one owned by them" with the result that:

"If, in fact, the acquiring authority is itself in possession of other [available planning permission] that is wholly suitable for that purpose – then it seems to me that no reasonable Secretary of State faced with that fact could come to the conclusion that it was necessary for the authority to acquire other land compulsorily for precisely the same purpose [under the DCO that could be carry out under that existing permission]."

4.4.13 Alternatively, the evident *doubt* as to fact ("and/or") *objectively evidenced* in the terms of the definition of "UKPN" in Article 1(1) of the Draft DCO, is required by *Prest* to be "*resolved in favour of the citizen"* with the result that all provisions of the Draft DCO that include the cipher "UKPN" (including Works descriptions) that relate to our Client's Land are required to be deleted or excluded in their application in relation to our Client's Land.

5. A PROPOSED DEVELOPMENT AGREEMENT BETWEEN 'STATUTORY' UNDERTAKERS

5.1 On the 12th December 2025, the land agent of National Grid disclosed for the first time that National Grid and UKPN envisaged agreeing a "development agreement" in relation to the project code reference ANEC and ATNC: the NSIP within section 14(1)(b) of the 2008 Act and the development associated with that NSIP that is the subject of the DCO Application.

5.2 The land agent also explained to our Client that in the (ongoing) absence of that development agreement, it remained impossible for National Grid to agree terms with our Client.

5.3 The land agent also affirmed that he has been acting throughout discussions exclusively for National Grid and not for "UKPN" (as defined by Article 1(1) of the Draft DCO), and that any and all development relating to UKPN or to the Land of our Client in which UKPN desired to carry out any development, remained exclusively a matter for UKPN to approach our Client. To date of 16th December 2025, neither National Grid nor UKPN has had any discussions with our Client about the development inside the red outlined area of the Farm Area coloured green on Plan A of the ABC Plans.

5.4 This Section operates as an express request of National Grid and of UKPN to disclose: a) the development agreement; b) the draft development agreement, and in so far as it relates to our Client's Land.

5.5 The development agreement cannot be withheld (in draft or when executed) from immediate disclosure to our Client because: a) the Environmental Information Regulations 2004/3391, Regulation 5(1) requires National Grid to make environmental information available on request, and a development agreement qualifies as a measure or programme affecting the "water, soil, land, landscape" elements of the environment of our Client's Land inside the area outlined in red on the relevant Works Plan; b) section 1 of the Freedom of Information Act 2000 requires National Grid to inform our Client in writing whether it hold: i) a draft development agreement; and ii) an executed development agreement; that relates to our Client's Land; and to confirm or deny the current existence of the same as at 16th December 2025.

6. ELECTRICITY ACT 1989

6.1 The following provisions show the genesis of the status of each of National Grid Electricity Transmission PLC (registered company number 2366977) and Eastern Power Networks PLC (registered company number 02366906) as a statutory undertaker licensed (respectively) to transmit and to distribute electrical power.

6.2 The 1989 Act regulates the provision of electricity.

6.3 Within Part 1 of the 1989 Act, by section 3A: (emphasis added)

*1) The principal objective of the Secretary of State and the Gas and Electricity Markets Authority (in this Act referred to as "the Authority") in carrying out their respective functions under this Part is to protect the interests of existing and future consumers in relation to electricity conveyed by distribution systems **or** transmission systems…*

1C) Before deciding to carry out functions under this Part in a particular manner with a view to promoting competition as mentioned in subsection (1B), the Secretary of State or the Authority shall consider—

a) to what extent the interests referred to in subsection (1) of consumers would be protected by that manner of carrying out those functions; and

b) whether there is any other manner (whether or not it would promote competition as mentioned in subsection (1B)) in which the Secretary of State or the Authority (as the case may be) could carry out those functions which would better protect those interests.

2) In performing the duties under subsections (1B) and (1C), the Secretary of State or the Authority shall have regard to –

a) the need to secure that all reasonable demands for electricity are met;

b) the need to secure that licence holders are able to finance the activities which are the subject of obligations imposed by or under this Part, the Utilities Act 2000[, Part 2 or 3 of the Energy Act 2004, Part 2 or 5 of the Energy Act 2008 or section 4, Part 2, sections 26 to 29 of the Energy Act 2010, Part 2 of the Energy Act 2013, the Nuclear Energy (Financing) Act 2022 or Chapter 1 of Part 2, Chapters 2 and 3 of Part 4 and sections 245 to 247 of the Energy Act 2023;

c) the need to contribute to the achievement of sustainable development.

3) …

8) In this Part, unless the context otherwise requires– …

"licence" means a licence under section 6 and "licence holder" shall be construed accordingly.

6.4 (As amended from 1st October 2024) by section 4 of the 1989 Act: (Emphasis added)

*1) **A person who** –*

*a) generates electricity for the purpose of giving a supply to any premises or **enabling** a supply to be so given;*

*b) **participates** in the transmission of electricity **for that purpose**;*

*bb) **distributes** electricity **for that purpose**;*

c) supplies electricity to any premises ;

ca) co-ordinates and directs the flow of electricity onto and over transmission systems by means of which the transmission of electricity takes place;

d) participates in the operation of an electricity interconnector;

e) provides a smart meter communication service; or…

f) performs the function of code manager in relation to a designated electricity licence document (see further subsections (3H) and (3I)),

*shall be guilty of an offence **unless** he is authorised to do so by a licence.*

2) A person guilty of an offence under this section shall be liable—

a) on summary conviction, to a fine not exceeding the statutory maximum;

b) on conviction on indictment, to a fine.

3) No proceedings shall be instituted in England and Wales in respect of an offence under this section except by or on behalf of the Secretary of State or the Authority…

3A) In subsection (1)(b) above, the reference to a person who participates in the transmission of electricity is to a person who—

*b) makes available for use for the purposes of a transmission system by means of which the transmission of electricity takes place **anything which forms part of it**…*

4) In this Part, unless the context otherwise requires—

"distribute" , in relation to electricity, means distribute by means of a distribution system, that is to say, a system which consists (wholly or mainly) of low voltage lines and electrical plant and is used for conveying electricity to any premises or to any other distribution system;

"generate" , in relation to electricity, means generate at a relevant place;

"supply" , in relation to electricity, means its supply to premises in cases where—

a) it is conveyed to the premises wholly or partly by means of a distribution system, or

*b) (**without being so conveyed**) it is supplied to the premises from a substation to which it has been conveyed by means of a transmission system,*

but does not include its supply to premises occupied by a licence holder for the purpose of carrying on activities which he is authorised by his licence to carry on;

"transmission" , in relation to electricity, means transmission by means of a transmission system;

"transmission system" means a system which—

a) consists (wholly or mainly) of high voltage lines and electrical plant, and

b) is used for conveying electricity from a generating station to a substation, from one generating station to another or from one substation to another…

5) In this section -

"relevant place" means a place in Great Britain, in the territorial sea adjacent to Great Britain or in a Renewable Energy Zone; and

"system" means a system the whole or a part of which is at a relevant place; …

6.5 By section 5 of the 1989 Act:

1) The Secretary of State may by order grant exemption from [paragraph (a), (b), (bb), (c), (ca), (d), (e) or (f) of section 4(1):

a) either to a person or to persons of a class;

b) either generally or to such extent as may be specified in the order; and

c) either unconditionally or subject to such conditions as may be so specified.

2) Before making an order under subsection (1) the Secretary of State shall give notice –

a) stating that he proposes to make such an order and setting out the terms of the proposed order;

b) stating the reasons why he proposes to make the order in the terms proposed; and

c) specifying the time (not being less than 28 days from the date of publication of the notice) within which representations with respect to the proposals may be made,

and shall consider any representations which are duly made in respect of the proposals and not withdrawn.

3) …

4) Notice of an exemption granted to a person shall be given–

a) by serving a copy of the exemption on him; and

b) by publishing the exemption in such manner as the Secretary of State considers appropriate for bringing it to the attention of other persons who may be affected by it.

5) …

6) …

7) Conditions subject to which an exemption is granted may (in particular) require any person carrying on any activity in pursuance of the exemption–

a) to comply with any direction given by the Secretary of State or the Authority as to such matters as are specified in the exemption or are of a description so specified;

b) except in so far as the Secretary of State or the Authority consents to his doing or not doing them, not to do or to do such things as are specified in the exemption or are of a description so specified; and

c) to refer for determination by the Secretary of State or the Authority such questions arising under the exemption as are specified in the exemption or are of a description so specified.

8) The Secretary of State may by order revoke an order by which an exemption was granted to a person or vary an order by which more than one exemption was so granted so as to terminate any of the exemptions–

a) at the person's request;

b) in accordance with any provision of the order by which the exemption was granted; or

c) if it appears to the Secretary of State inappropriate that the exemption should continue to have effect…

6.6 By section 6 of the 1989 Act: (Emphasis added)

1) The Authority may grant any of the following licences –

a) a licence authorising a person to generate electricity for the purpose of giving a supply to any premises or enabling a supply to be so given ("a generation licence");

b) a licence authorising a person to participate in the transmission of electricity for that purpose ('a transmission licence');

c) a licence authorising a person to distribute electricity for that purpose ("a distribution licence");

d) a licence authorising a person to supply electricity to premises ("a supply licence");

da) subject to subsections (1ZB) and (2ZA), a licence authorising a person to co-ordinate and direct the flow of electricity onto and over transmission systems by means of which the transmission of electricity takes place ("an electricity system operator licence");

e) a licence authorising a person to participate in the operation of an electricity interconnector ('an interconnector licence');

f) subject to subsection (1C), a licence authorising a person to provide a smart meter communication service ("a smart meter communication licence") ; or

g) a licence authorising a person to perform the function of code manager in relation to a designated electricity licence document ("a code manager licence").

1ZA) Subject to subsection (2ZA), the Secretary of State may grant an electricity system operator licence.

1ZB) The first electricity system operator licence may only be granted by the Secretary of State.

1ZC) For the purposes of this section, references to the grant of an electricity system operator licence include the giving of a direction under section 167 of the Energy Act 2023 in respect of a transmission licence.

2) The same person may not be the holder of both a distribution licence and –

a) a generation licence; or

b) a supply licence.

2ZA) A person may not be granted an electricity system operator licence unless the same person—

a) already holds a licence granted under section 7AA of the Gas Act 1986, or

b) is granted such a licence at the same time as the person is granted an electricity system operator licence.

2A) The same person may not be the holder of an interconnector licence and the holder of a licence falling within any of paragraphs (a) to (da) of subsection (1)…

5) A distribution licence may authorise the holder to distribute electricity in any area, or only in an area specified in the licence…

6A) A transmission licence may authorise the holder to participate in the transmission of electricity in any area, or only in an area specified in the licence…

8) A licence shall, unless previously revoked in accordance with any term of the licence and subject to subsection (8A), continue in force for such period as may be specified in or determined by or under the licence.

9) In this Part –

"electricity distributor" means any person who is authorised by a distribution licence to distribute electricity except where he is acting otherwise than for purposes connected with the carrying on of activities authorised by the licence;

"electricity generator" means any person who is authorised by a generation licence to generate electricity except where that person is acting otherwise than for purposes connected with the carrying on of activities authorised by the licence;

"electricity supplier" means any person who is authorised by a supply licence to supply electricity except where he is acting otherwise than for

purposes connected with the carrying on of activities authorised by the licence.

10) In this section –

"designated electricity licence document" has the same meaning as in section 4; …

"premises" has the same meaning as in section 4.

6.7 By sections 6A and 6B of the 1989 Act there is a procedure for applications for any licence. By section 6A(2): "The application shall be made in such form and manner, and shall contain, or be accompanied by, such information and documents and such fee (if any), as may be prescribed."

6.8 By section 9 of the 1989 Act: (Emphasis added)

*1) It shall be the duty of an electricity **distributor** –*

a) to develop and maintain an efficient, co-ordinated and economical system of electricity distribution;

b) to facilitate competition in the supply and generation of electricity.

2) It shall be the duty of the holder of a licence authorising him to participate in the transmission of electricity —

a) to develop and maintain an efficient, co-ordinated and economical system of electricity transmission; and

b) to facilitate competition in the supply and generation of electricity.

2A) Subsection (2)(a) shall not have effect to require the holder of a transmission licence which is subject to a condition of the kind mentioned in section 7(2A)(a) to carry on an activity which he would be authorised by the licence to carry on apart from the condition. …

6.9 By section 10 of the 1989 Act: (Emphasis added)

1) Subject to subsection (2) below, Schedule 3 to this Act (which provides for the compulsory acquisition of land) and Schedule 4 to this Act (which confers other powers and makes other provision) shall have effect—

a) in relation to the holder of a transmission licence or of an electricity system operator licence; and

b) to the extent that his licence so provides, in relation to an electricity distributor or any other licence holder;

and references in those Schedules to a licence holder shall be construed accordingly.

2) Where any provision of either of the Schedules mentioned in subsection (1) above is applied to a licence holder by his licence, it shall have effect subject to such restrictions, exceptions and conditions as may be included in the licence for the purpose of qualifying that provision as so applied or any power or right conferred by or under it…

6.10 By Schedule 3 to the 1989 Act, paragraph 1 provides: (Emphasis added)

1) Subject to paragraph 2 below, the Secretary of State may authorise a licence holder to purchase compulsorily any land required for any purpose connected with the carrying on of the activities which he is authorised by his licence to carry on.

2) In this paragraph and paragraph 2 below "land" includes any right over land (other than, in Scotland, a right to abstract, divert and use water); and the power of the Secretary of State under this paragraph includes power to authorise the acquisition of rights over land by creating new rights as well as acquiring existing ones.

6.11 By paragraph 2to the 1989 act (emphasis added):

1) No order shall be made under paragraph 1 above authorising the compulsory purchase of land belonging to another licence holder except with the consent of the Authority.

2) The Authority shall not give their consent under this paragraph if –

a) the land is being used by the licence holder to whom it belongs for the purposes of an installation necessary for the carrying on of the activities which he is authorised by his licence to carry on; or

b) it appears to the Authority that the land will be so used and that the use will commence, or any necessary planning permission or consent under section 36 or 37 of this Act will be applied for, within the period of five years beginning with the date of the application for his consent.

5) In this paragraph –

"the Planning Act" means the Town and Country Planning Act 1990 …

"planning permission" means a planning permission granted under Part III of the Planning Act.

6.12 By paragraph 3, provision is made for common, open space or a fuel or field garden allotment; and by (2): "Where for any purpose a licence holder has

acquired, or proposes to acquire, any land to which this paragraph applies, or any right over any such land, and other land is required for the purpose of being given in exchange for the land or right in question, the Secretary of State may authorise the licence holder to purchase that other land compulsorily, or he may acquire it by agreement."

6.13 By paragraph 4:

Where a licence holder has acquired any land by virtue of paragraph 1 above, he shall not dispose of that land or of any interest in or right over it except with the consent of the Authority.

6.14 Schedule 4 of the 1989 Act, paragraph 6 provides: (Emphasis added)

1) This paragraph applies where—

a) for any purpose connected with the carrying on of the activities which he is authorised by his licence to carry on, it is necessary or expedient to obtain the right to install and keep installed an electric line on, under or over any land; and

b) the owner or occupier of the land, having been given a notice requiring him to give the necessary wayleave within a period (not being less than 21 days) specified in the notice—

i) has failed to give the wayleave before the end of that period; or

ii) has given the wayleave subject to terms and conditions to which the licence holder objects;

and in this paragraph as it so applies "the necessary wayleave" means consent for the licence holder to install and keep installed the electric line on, under or over the land and to have access to the land for the purpose of inspecting, maintaining, adjusting, repairing, altering, replacing or removing the electric line.

2) This paragraph also applies where—

a) for any purpose connected with the carrying on of the activities which he is authorised by his licence to carry on, it is necessary or expedient for a licence holder to keep an electric line installed on, under or over any land; and

b) the owner or occupier of the land has given notice to the licence holder under paragraph 8(2) below requiring him to remove the electric line;

and in this paragraph as it so applies "the necessary wayleave" means consent for the licence holder to keep the electric line installed on, under or over the land and to have access to the land for the purpose of inspecting, maintaining, adjusting, repairing, altering, replacing or removing the electric line.

3) Subject to sub-paragraphs (4) and (5) below, the Secretary of State may, on the application of the licence holder, himself grant the necessary wayleave subject to such terms and conditions as he thinks fit; and a necessary wayleave so granted shall, unless previously terminated in accordance with a term contained in the wayleave, continue in force for such period as may be specified in the wayleave.

4) …

5) Before granting the necessary wayleave, the Secretary of State shall afford—

a) the occupier of the land; and

b) where the occupier is not also the owner of the land, the owner, an opportunity of being heard by a person appointed by the Secretary of State.

6) A necessary wayleave granted under this paragraph—

a) shall not be subject to the provisions of any enactment requiring the registration of interests in, charges over or other obligations affecting land; but

b) shall bind any person who is at any time the owner or occupier of the land.

7) …

7A) A necessary wayleave granted to a licence holder under this paragraph may be transferred to another licence holder.

6.15 By section 37:

1) Subject to subsections (1A) to (2A) below, an electric line shall not be installed or kept installed above ground except in accordance with a consent granted by the Secretary of State.

1A) So far as relating to the installation of an electric line, subsection (1) is subject to section 33(1) of the Planning Act 2008 (exclusion of requirement for other consents for development for which development consent required).

1B) So far as relating to keeping an electric line installed, subsection (1) does not apply if keeping the line installed is authorised by an order granting development consent under the Planning Act 2008…

4) Any person who without reasonable excuse contravenes the provisions of this section shall be liable on summary conviction to a fine not exceeding level 3 on the standard scale.

6.16 By section 38:

The provisions of Schedule 9 to this Act (which relate to the preservation of amenity and fisheries) shall have effect.

6.17 By Schedule 9 of the 1989 Act, provision is may including as follows:

1) In formulating any relevant proposals, a licence holder or a person authorised by exemption to generate, distribute, supply or participate in the transmission of electricity –

a) shall have regard to the desirability of preserving natural beauty, of conserving flora, fauna and geological or physiographical features of special interest and of protecting sites, buildings and objects of architectural, historic or archaeological interest; and

b) shall do what he reasonably can to mitigate any effect which the proposals would have on the natural beauty of the countryside or on any such flora, fauna, features, sites, buildings or objects…

2) In considering any relevant proposals for which its consent is required under section 36 or 37 of this Act, the appropriate authority shall have regard to—

a) the desirability of the matters mentioned in paragraph (a) of sub-paragraph (1) above;

b) the extent to which the person by whom the proposals were formulated has complied with his duty under paragraph (b) of that sub-paragraph…

6.18 By section 111:

1) In this Act, unless the context otherwise requires –

"the Authority" means the Gas and Electricity Markets Authority; …
"contravention", in relation to any direction, condition, requirement, regulation or order, includes any failure to comply with it and cognate expressions shall be construed accordingly;

2) *For the purposes of this Act any class or description may be framed by reference to any matters or circumstances whatever.*

7. TOWN AND COUNTRY PLANNING ACT 1990 ("TCPA 1990")

7.1 The following provisions show the subsisting and actual availability to each of National Grid Electricity Transmission PLC (registered company number 2366977) and Eastern Power Networks PLC (registered company number 02366906) for their respective purposes of statutory undertakers for the respective transmission and distribution supply of electrical power.

7.2 The TCPA 1990 regulates the development of land. By section 55:

1) *Subject to the following provisions of this section, in this Act, except where the context otherwise requires, "development," means the carrying out of building, engineering, mining or other operations in, on, over or under land, or the making of any material change in the use of any buildings or other land…*

7.3 By section 57 TCPA 1990:

1) *Subject to the following provisions of this section, planning permission is required for the carrying out of any development of land.*

7.4 By section 59 TCPA 1990:

1) *the Secretary of State is required by order (in this Act referred to as a "development order") provide for the granting of planning permission.*

8. TOWN AND COUNTRY PLANNING (GENERAL PERMITTED DEVELOPMENT) (ENGLAND) ORDER 2015/596 ("GPDO 2015")

8.1 The GPDO 2015 provides for planning permission on the following terms.

8.2 By Article 3:

1) *Subject to the provisions of this Order and [regulations 75 to 78 of the Conservation of Habitats and Species Regulations 2017 (general development orders), planning permission is hereby granted for the classes of development described as permitted development in Schedule 2.*

2) *Any permission granted by paragraph (1) is subject to any relevant exception, limitation or condition specified in Schedule 2…*

8.3 Class B of Part 15 is not expressed to be subject to prior approval.

8.4 Within Schedule 2, Part 15 provides for “Power related development”. Within Class B, electricity undertakings, paragraph B: (Emphasis added)

B. ***Development by statutory undertakers for the generation, transmission, distribution or supply of electricity for the purposes of their undertaking consisting of—***

a) ***the installation or replacement in, on, over or under land of an electric line and the construction of shafts and tunnels and the installation or replacement of feeder or service pillars or transforming or switching stations or chambers reasonably necessary in connection with an electric line;***

b) ***the installation or replacement of any electronic communications line which connects any part of an electric line to any electrical plant or building, and the installation or replacement of any support for any such line;***

c) ***the sinking of boreholes to ascertain the nature of the subsoil and the installation of any plant or machinery reasonably necessary in connection with such boreholes;***

d) ***the extension or alteration of buildings on operational land;***

e) ***the erection on operational land of the undertaking of a building solely for the protection of plant or machinery;***

f) ***any other development carried out in, on, over or under the operational land of the undertaking.***

8.5 Class B B.1. provides:

Development is not permitted by Class B if—

a) in the case of any Class B(a) development—

ii) it would consist of or include the installation or replacement of an electric line to which section 37(1) of the Electricity Act 1989 (consent required for overhead lines) applies; …

b) in the case of any Class B(b) development— …

iii) the height of any support would exceed 15 metres; …

c) in the case of any Class B(d) development—

d) in the case of any Class B(e) development, the building would exceed 15 metres in height, or

e) in the case of any Class B(f) development, it would consist of or include— …

8.6 Class B B.2. includes: (Emphasis added)

Development is permitted by Class B subject to the following conditions—

a) in the case of any Class B(a) development consisting of or including the replacement of an existing electric line, compliance with any conditions contained in a planning permission relating to the height, design or position of the existing electric line which are capable of being applied to the replacement line;

b) in the case of any Class B(a) development consisting of or including the installation of a temporary electric line providing a diversion for an existing electric line, on the ending of the diversion or at the end of a period of 6 months from the completion of the installation (whichever is the sooner) the temporary electric line is removed and the land on which any operations have been carried out to install that line is restored as soon as reasonably practicable to its condition before the installation took place; …

c) …

d) in the case of any Class B(e) development, approval of details of the design and external appearance of the buildings must be obtained, before development is begun, from— …

iii) in any other case, the district planning authority.

8.7 Class B B.3. provides:

For the purposes of Class B(a), "electric line" has the meaning given by section 64(1) of the Electricity Act 1989 (interpretation etc. of Part 1).

8.8 Class B B.5. provides: (Emphasis added)

For the purposes of Class B(d), (e) and (f), the land of the holder of a licence under section 6(1) of the Electricity Act 1989 (licensing of supply etc.) is treated as operational land if it would be operational land within section 263 of the Act (meaning of "operational land") if such licence holders were statutory undertakers for the purpose of that section.

8.9 It is clear from the above that both National Grid Electricity Transmission PLC (registered company number 2366977) and Eastern Power Networks PLC

(registered company number 02366906) have subsisting Class B permitted development rights that include descriptions of development in Class B(a)-(f), and in particular (f), by which to alter the landscape of the Farm in advance of the other development, but there is no mention in the draft DCO of these subsisting development rights. By contrast, UK Power Networks Holdings Limited (registered company number 07290590) cannot benefit itself from these permitted development rights.

SECTION 4 – THE ELECTRIC TRANSMISSION LINE AND DEVELOPMENT ASSOCIATED WITH THAT

TRANSMISSION LINES & DEVELOPMENT ASSOCIATED WITH THOSE LINES

(A) This Section addresses the qualification of the development identified by project code "ANEC and ATNC" for an electric line over ground between Norwich and Tilbury within section 14(1)(b) of the Planning Act 2008 ("PA 2008") and, in consequence, that qualifies as a "Nationally Significant Infrastructure Project" ("NSIP"). By section 31 of the PA 2008, development consent is required "to the extent that" development is, or forms part of, an NSIP.

(B) Section 115 of the PA 2008 operates to extend the scope of what may be authorised *together with* the NSIP to encompass "associated development". Two criteria are key to qualification inside that phrase: i) "Associated development should … either support the construction or operation of the principal development, or help address its impacts"; ii) "Associated development should not be an aim in itself but should be subordinate to the principal development".

(C) In this DCO Application, the development that relates to the *transmission* of electricity qualifies as an NSIP and as "associated development". However, the development that concerns the *distribution* of electricity cannot qualify as "associated development" because the express purpose of the development relating to distribution is currently authorised by planning permission under SI 2015/596 "for" that category of development. Thereby, that category of development for that "aim" cannot simultaneously qualify as "associated development" for the different purpose of transmission nor to support that purpose.

9. NATIONAL GRID TRANSMISSION LINES DEVELOPMENT & THE DEVELOPMENT ASSOCIATED WITH THAT DEVELOPMENT

9.1 See **Section 9** for the correct construction of statutes in circumstances of compulsory acquisition.

9.2 Document **APP-001**, Application Form, paragraph 5 describes the "Proposed Development", in particular (emphasis added):

The Project is a proposal by National Grid to upgrade the electricity transmission system in East Anglia between Norwich and Tilbury, comprising:

- *A new 400 kilovolt (kV) electricity transmission connection of approximately 180km overall length from Norwich Main Substation to Tilbury Substation via Bramford Substation, a new East Anglia Connection Node (EACN) Substation and a new Tilbury North Substation, including:*
    - *Approximately 159km of new overhead line supported on approximately 509 pylons…*
    - *Approximately 21km of 400kV underground cabling …*
- *…*

In addition, third party utilities diversions and/or modifications would be required to facilitate the construction of the Project…

9.3 See also Document **APP-130**, Project Description, paragraphs 4.1.5-6 that repeats the forgoing with additional detail. See also Document **APP-121**, Associated Development, Section 3, paragraph 3.1.2 (emphasis added):

3.1.2 For the Project, 'associated development' includes (but is not limited to):

- *Approximately 22 km of 400 kV underground cable*
- *Seven CSE compounds associated with the 400 kV cable*
- *Substations*
- *Permanent access to assets*
- *Modifications to the existing YYJ and ZB 400 kV overhead lines including the removal of approximately 0.55 km of National Grid's existing ZB 400 kV overhead line*
- *Removal of approximately 23 km of UK Power Networks (UKPN) 132 kV overhead line and replacement with approximately 26 km of underground cable*

- *Modifications to UKPN 33 / 11 kV and Openreach wood pole infrastructure*
- *YYJ and ZB 400 kV overhead line reconfiguration works*
- *Temporary pylons and overhead line during construction*
- *Temporary bridges and culverts for watercourse crossings during construction*
- *Various construction activities*
- *Temporary amendments to the highway*
- *Mitigation, compensation and enhancement of the environment*

9.4 By section 31 of the PA 2008 (emphasis added):

Consent under this Act ("development consent") is required for development to the extent that the development is or forms part of a nationally significant infrastructure project.

9.5 By section 14 (emphasis added):

1) In this Act "nationally significant infrastructure project" means a project which consists of any of the following— …

b) the installation of an electric line above ground;

2) Subsection (1) is subject to sections 15 to 30A

9.6 By section 16 (emphasis added):

1) The installation of an electric line above ground is within section 14(1)(b) only if (when installed) the electric line will be—

a) wholly in England, …

2) …

3) The installation of an electric line above ground is not within section 14(1)(b)—

a) if the nominal voltage of the line is expected to be less than 132 kilovolts,

aa) if the length of the line (when installed) will be less than two kilometres,

ab) if –

i) the line will replace an existing line,

ii) the nominal voltage of the line is expected to be greater than the nominal voltage of the existing line (but see subsection (3A)),

iii) the height above the surface of the ground of any support for the line will not exceed the height of the highest existing support or support which is being replaced by more than 10 per cent, and

iv) where the line is to be installed in a different position from the existing line, the distance between any new support and the existing line will not exceed 60 metres and the existing line will be removed within twelve months from the date on which the installation of the line which replaces it is complete,

b) to the extent that (when installed) the line will be within premises in the occupation or control of the person responsible for its installation, or

c) if section 37(1) of the Electricity Act 1989 (consent required for overhead lines) does not apply to it by virtue of the Overhead Lines (Exemption) (England and Wales) Regulations 2009 (S.I. 2009/640), as amended by the Overhead Lines (Exempt Installations) (Consequential Provisions) Order 2010…

4) In this section –

…

"existing line" means an electric line which—

a) has been installed or is kept installed above ground in accordance with a consent granted under section 37(1) of the Electricity Act 1989[8] or an order granting development consent; or

b) has been installed above ground and is an electric line to which section 37(1) of the Electricity Act 1989 does not apply by virtue of—

i) paragraph 5(4) or (5) of Schedule 17 to that Act …

9.7 By section 115 (emphasis added):

1) Development consent may be granted for development which is—

b) development for which development consent is required, or

c) associated development …

2) "Associated development" means development which—

a) is associated with the development within subsection (1)(a) (or any part of it),

b) does not consist of or include the construction or extension of one or more dwellings, and

c) is within subsection (3), (4) or (4A)

3) …

4) …

4A) Development is within this subsection if the development within subsection (1)(a) with which it is associated is—

a) …

b) the installation of an electric line that is or (when installed) is expected to be within section 14(1)(b).

9.8 The Planning Act 2008, Guidance on associated development applications for major infrastructure projects (April 2013) ("the Associated Development Guidance (2013)") provides guidance on the scope of "associated development" (emphasis added):

5. It is for the Secretary of State to decide on a case by case basis whether or not development should be treated as associated development. In making this decision the Secretary of State will take into account the following core principles:

i) The definition of associated development, as set out in paragraph 3 above, requires a direct relationship between associated development and the principal development. Associated development should therefore either support the construction or operation of the principal development, or help address its impacts.

*ii) Associated development should not be **an aim in itself** but should be subordinate to the principal development…*

6. It is expected that associated development will, in most cases, be typical of development brought forward alongside the relevant type of principal

development or of a kind that is usually necessary to support a particular type of project, for example (where consistent with the core principles above), a grid connection for a commercial power station…

12. Annexes A and B provide examples of the type of development that may qualify as associated development. These annexes are illustrative only…

Annex A …

Examples of <u>general</u> types of associated development

Access arrangements

- *Formation of new or improved vehicular or pedestrian access (to stations, work sites etc), whether temporary or permanent*
- *Alteration or construction of roads, footpaths and bridleways*
- *Diversion or realignment of watercourses*
- *Development undertaken for the purpose of addressing impacts*
- *Hard and soft landscaping …*
- *Temporary haul roads, vehicle-marshalling facilities and lay down areas*

<u>Connections to</u> national, regional or local networks

- *Electricity networks…*
- *Telecommunications networks*

Other works

- *<u>Relocation</u> of apparatus of statutory undertakers' equipment (mains, sewers, drains, pipes, <u>cables, pylons</u> etc)*

Annex B

Examples of associated development specific to individual types of major infrastructure projects

Electric lines

- *Substations*
- *<u>Distribution</u> lines*

- *Control buildings*
- *Sealing end compounds*
- *Diversion of other overhead lines*
- *Converter stations…*

9.9 See **Section 9** for the correct construction of statutes in circumstances of compulsory acquisition.

9.10 NPS EN-1 provides: (Emphasis added)

> *3.3.63 Subject to any legal requirements, the urgent need for CNP Infrastructure to achieving our energy objectives, together with the national security, economic, commercial, and net zero benefits, will in general outweigh any other residual impacts not capable of being addressed by application of the mitigation hierarchy. Government strongly supports the delivery of CNP Infrastructure and it should be progressed as quickly as possible…*

9.11 NPS EN-5 provides in its Glossary:

> *"Critical national priority/CNP" - A policy set out at Section 4.2 of EN-1 which applies a policy presumption that, subject to any legal requirements (including under section 104 of the Planning Act 2008), the urgent need for CNP Infrastructure to achieving our energy objectives, together with the national security, economic, commercial, and net zero benefits, will in general outweigh any other residual impacts not capable of being addressed by application of the mitigation hierarchy. CNP Infrastructure is defined as nationally significant low carbon.*

9.12 The legal requirements include those referred to in Section 9 and those under the PA 2008.

9.13 By section 31 of the PA 2008, consent is required for development "to the extent that the development is" "or forms part of" an NSIP. Subject to section 16, by section 14(1)(b) such an NSIP is described as "the installation of an electric line above ground".

9.14 On its proper construction, section 14(1)(b) a line other than "above ground" cannot qualify inside section 14(1)(b) as a "nationally significant infrastructure project".

9.15 By section 16(3), the installation of an electric line above ground is not within section 14(1)(b) to the extent that (when installed) the line will be within premises in the occupation or control of National Grid as responsible for its installation. Consequently, the above ground lines inside the perimeter of the substations of National Grid cannot satisfy section 14(1)(b).

9.16 By section 115(1)(b) of the PA 2008, development consent may be granted for development which is: a) development for which development consent is required; or (b) associated development. On its lawful construction, by subsection (2), associated development means development that is both "associated with the development within section (1)(a) and "is within subsection (3), (4) or (4A)." By subsection (4A), "Development is within this subsection if the development within subsection (1)(a) with which it is associated is (b) the installation of an electric line that is or (when installed) is expected to be within section 14(1)(b)."

9.17 Thereby, the legal scope of subsection (4A) encompasses the National Grid: a) pylons and their foundations; b) extension of its existing Grid Bramford Substation; c) CSE Compounds; d) approximately 22 km of 400 kV underground cable; and e) Permanent access to assets; because these items have a direct relationship with the section 14(1)(b) "the installation of an electric line above ground" in that they support the operation of the installed electric line above ground, and are not an "aim" in each of themselves.

9.18 The legal scope of subsection (4A) encompasses "during construction" the National Grid: a) Temporary pylons and overhead line during construction; b) Temporary haul roads; c) Temporary bridges and culverts for watercourse crossings; d) Various construction activities; e) Temporary amendments to the highway; f) Mitigation, compensation and enhancement of the environment; so far as each of these items has a direct relationship with the section 14(1)(b) "the installation of an electric line above ground" in that they support the "construction" of the installed electric line above ground, and are not an "aim" in each of themselves.

9.19 The scope of the "authorised development" encompasses the section 14(1)(b) PA 2008 "nationally significant infrastructure project" and the qualifying "associated development".

10. **"UKPN" DEVELOPMENT: INSIDE OR OUTSIDE "ASSOCIATED DEVELOPMENT"?**

10.1 Theoretically, the legal scope of subsection (4A) can encompass: a) "relocation" of cables of statutory undertakers; b) "distribution lines"; and c) "other overhead lines" by reason of these being *general* examples in Annex A to the Associated Development Guidance (2013).

10.2 However, in particular, the Associated Development Guidance (2013) specific test (ii) for "*Associated development" remains that it "should not be **an aim in itself** but **should be subordinate** to the principal development…"* .

10.3 In this DCO Application, for the reasons set out in **Section 6**, the development identified to be carried out by UKPN cannot qualify inside the lawful scope of "associated development" under section 115(2)(a) PA 2008 *because* the UKPN development currently benefits from existing authorisation in the form of planning permission under Article 3(1) and Schedule 2, Part 15, Class B (Town and Country Planning (General Permitted Development)(England) Order 2015/596), "for" the purposes of that electricity distribution statutory undertaker.

10.4 Thereby, the UKPN development cannot otherwise be "for" the primary purpose of the distribution of electricity for which, within "UKPN" only Eastern Power Networks PLC can be the statutory undertaker. Thus, the requirements of the Associated Development Guidance (2013) test (ii) ("Associated development should not be an aim in itself but should be subordinate to the principal development") cannot be satisfied.

SECTION 5 – DEVELOPMENT – ARTICLE 10 AND HILLSIDE

ALTERNATIVES AND THE DIFFERENT PURPOSE OF THE UKPN DEVELOPMENT

(A) This Section addresses: the existence of the fact of the Alternative subsisting planning permission available to UKPN authorises execution of the development for its distribution lines over the Client's Land; and how the existence of that actual Alternative for the purpose of that category of electrical line results to preclude that permitted development from simultaneously qualifying inside the legal scope "associated development" under section 115(2)(a) of the Planning Act 2008 as part of the draft DCO. This is because the envisaged "associated development" by UKPN would have a purpose

("for") the distribution lines of UKPN discrete from that "for" NGET's "transmission lines" of its section 14(2)(a) "electric line" between Norwich and Tilbury.

(B) Further, section 157 of the Planning Act 2008 currently precludes the jurisdiction of the Secretary of State from authorizing inclusion of the provision for compulsory acquisition of land rights of UKPN (in relation to our Client's land) inside proposed Draft DCO and also the creation of new UKPN rights inside that draft DCO.

(C) Furthermore, the inclusion of Article 10 in the Draft DCO is inconsistent with the *UK Government's* stated position on the 11th September 2025 to expressly reject ("not") legislating against the decision of the Supreme Court in *Hillside Parks Ltd v Snowdonia National Park Authority [2022] 1 WLR 5077.* Consequently, inclusion of Article 10 in the draft DCO must be deleted so as to align with the stated position of the UK Government of which the (authorising) Secretary of State is both but a part and is bound to align with the stated position of his overseer Government.

11. ALTERNATIVES, ASSOCIATED DEVELOPMENT AND PURPOSES

11.1 See **Section 9 Law** for the correct construction of statutes in circumstances of compulsory acquisition.

11.2 Section 57(1) of the Town and Country Planning Act 1990 ("TCPA 1990") requires that planning permission be granted for the development of land. Section 55(1) defines "development": (Emphasis added)

> *1) Subject to the following provisions of this section, in this Act, except where the context otherwise requires, "development," means the carrying out of building, engineering, mining or other operations in, on, over or under land, or the making of any material change in the use of any buildings or other land.*
>
> *1A) For the purposes of this Act "building operations" includes—*
>
> *a) demolition of buildings;*
>
> *b) rebuilding;*
>
> *c) structural alterations of or additions to buildings; and*
>
> *d) other operations normally undertaken by a person carrying on business as a builder.*

11.3 The scope of “land” and of “building” derives from section 336(1) of the TCPA 1990 that includes: (Emphasis added)

> *1) In this Act, except in so far as the context otherwise requires and subject to the following provisions of this section and to any transitional provision made by the Planning (Consequential Provisions) Act 1990—*
>
> *…*
> *“building” includes any structure or erection, and any part of a building, as so defined, but does not include plant or machinery comprised in a building; …*
> *“development” has the meaning given in section 55, and “develop” shall be construed accordingly;*
> *“land” means any corporeal hereditament, including a building, and, in relation to the acquisition of land under Part IX, includes any interest in or right over land; …*

11.4 By sections 59 and 60 of the TCPA 1990, the Secretary of State has granted planning permission by Order: the Town and Country Planning (General Permitted Development)(England) Order 2015/596. Article 3(1) grants planning permission for the development described in Schedule 2. Schedule 2 includes under Part 15, Class B for “Electricity Undertakings”.

11.5 The terms of Article 3(1) and Schedule 2, Part 15 are not subject to prior approval of the planning authority and consequently subsist currently as *land development rights* available to UKPN as a qualifying undertaking. The scope of Part 15, Class B rights is wide, expressed for a particular purpose or aim, and encompasses (emphasis added):

> *Development by statutory undertakers for the generation, transmission, distribution or supply of electricity for the purposes of their undertaking consisting of—*
>
> *a) the installation or replacement in, on, over or under land of an electric line and the construction of shafts and tunnels and the installation or replacement of feeder or service pillars or transforming or switching stations or chambers reasonably necessary in connection with an electric line;*
>
> *b) the installation or replacement of any electronic communications line which connects any part of an electric line to any electrical plant or*

building, and the installation or replacement of any support for any such line;

c) *the sinking of boreholes to ascertain the nature of the subsoil and the installation of any plant or machinery reasonably necessary in connection with such boreholes;*

d) *the extension or alteration of buildings on operational land;*

e) *the erection on operational land of the undertaking of a building solely for the protection of plant or machinery;*

f) *any other development carried out in, on, over or under the operational land of the undertaking.*

11.6 The jurisdictional scope of regulation of "development" by the TCPA 1990 and the Planning Act 2008 interfaces in section 31 of the latter. Section 31 provides:

Consent under this Act ("development consent") is required for development to the extent that the development is or forms part of a nationally significant infrastructure project.

11.7 Section 235 (of the Planning Act 2008) defines "development" as follows:

1) In this Act (except in Part 11)— …

"building" has the meaning given by section 336(1) of TCPA 1990; …

"development" has the meaning given by section 32; …

"land" includes buildings and monuments, and land covered with water, and in relation to Part 7 must be read in accordance with section 159; ..

11.8 Section 32 (of the Planning Act 2008) provides:

1) In this Act (except in Part 11) "development" has the same meaning as it has in TCPA 1990. This is subject to subsections (2) and (3).

11.9 Section 159 (of the Planning Act 2008) provides:

1) This section applies for the purposes of this Part [7].

2) "Land" includes any interest in or right over land.

3) Acquiring a right over land includes acquiring it by the creation of a new right as well as by the acquisition of an existing one.

11.10 Section 115 provides (of the Planning Act 2008) (emphasis added) "Development for which development consent may be granted":

1) Development consent may be granted for development which is—

a) development for which development consent is required, or

b) associated development …

2) "Associated development" means development which—

a) is associated with the development within subsection (1)(a) (or any part of it),

b) does not consist of or include the construction or extension of one or more dwellings, and

c) is within subsection (3), (4) or (4A)…

3) …

4) …

4A) Development is within this subsection if the development within subsection (1)(a) with which it is associated is—

a) …

b) the installation of an electric line that is or (when installed) is expected to be within section 14(1)(b).

11.11 The Oxford English Dictionary (6th Edition) defines the ordinary meaning of "associated" as: "joined in function; concomitant; … in a common purpose".

11.12 The Secretary of State's "Guidance on associated development applications for major infrastructure projects (26th April 2013)" provides *general* examples of "Associated Development" in Annexes A and B but also provides tests by which to ensure in a particular DCO application, whether or not development asserted to be "associated development" "is associated development".

11.13 The test in paragraph 5(ii) of this Guidance provides (emphasis added):

ii) Associated development should not be an aim in itself but should be subordinate to the principal development.

11.14 The ordinary meaning of: a) “aim” is “an objective”; b) “purpose” is an “object to be attained… an aim”; and c) “for” is “with the object or purpose of;… in order to obtain”. Consequently, properly construed in line with the Case Law referred to above in the **Appendices**, “aim” equates to “purpose” and “purpose” equates to “for”.

11.15 In **Document APP-057**, the Explanatory Memorandum, National Grid asserts: (Emphasis added)

3.14.1 Insofar as National Grid needs to obtain any other planning permission for anything relating to the authorised development (i.e. to facilitate its completion, construction, use or operation), this article seeks to avoid any question as to the interface between any such planning permission and this Order (i.e. these planning permissions will not constitute a breach of the terms of this Order)…

*3.14.3 Article 10(3) deals with the converse situation and confirms that development within the Order limits which is **constructed or used** under a standalone planning permission or development consent order does not prevent the carrying out of any development authorised under the Order…*

11.16 But National Grid has no “need” to *“obtain any other planning permission for anything relating to the authorised development”* because the terms of Article 3 encompass the *“development to the extent that the development is or forms part of a nationally significant infrastructure project”* and *“development which is— ... (b) associated development …”*

11.17 In this envisaged development situation:

a) With respect to National Grid and its advisors, the draft DCO cannot in law operate as a “blank cheque” or a “partly completed shopping list” for National Grid. Indeed, as was said in *Prest* (*Prest v Secretary of State for Wales*, *1983 WL 215478* per Lord Denning MR) and that applies in the compulsory purchase circumstances of our Client’s Land: (Emphasis added)

“I regard it as a principle of our constitutional law that no citizen is to be deprived of his land by any public authority against his will, unless it is

expressly authorised by Parliament and the public interest decisively so demands."

The Examining Authority is not entitled to recommend, and the Secretary of State is not entitled to authorise, an Order that includes a blank cheque provision but can only authorise the "expressly" stated scope of the consent for development for the NSIP.

b) Further, the inclusion of Article 10 as evidence shows there to be an objective doubt on the face of the draft DCO in respect of what is being sought to be authorised, and whether what is currently included in the draft DCO is itself of the correct scope by which to execute the whole of the development for which development consent is sought, and which doubts are required by the common law (of *Prest*) to be resolved in favour of our Client (as a person threatened by compulsory acquisition);

c) In order to rely on section 115(2)(a) of the Planning Act 2008 to encompass "development" by UKPN inside the red outlined area of the DCO Application as it overlaps with the Client's Land, no reliance can be placed by National Grid or UKPN on the subsisting planning permission that UKPN is currently entitled to under Class B of Part 15 of Schedule 2 to the Permitted Development Order 2015/596 *because* that planning permission is exclusively "for" the purpose of UKPN's statutory and licensed function in respect to "distribution line and cannot be "for" a different function or purpose in respect of "transmission" lines;

d) By contrast, in the event that National Grid or UKPN is to rely on Class B of Part 15 of Schedule 2 to the Permitted Development Order 2015/596, then, on the proper *construction* of that planning permission as being for the purpose (or aim) of works to the UKPN "distribution line" (and not "for" the "transmission line"), then the test (ii) of the Secretary of State's Guidance (2013) cannot be satisfied *because* any development undertaken by UKPN under Class B is for its "distribution line" whereas: *"Associated development should not be an aim in itself but should be subordinate to the principal development".*

e) However, it is *evidentially* clear from: i) the inclusion in the draft DCO of Article 10; ii) section 3.14 of Document APP-057, Explanatory Memorandum and its references to the *anticipated* "need" to "obtain … other planning permissions", and to "Hillside"; iii) the evidence of National Grid's agent to our Client on the 12th December 2025; that iv) National Grid is aware that UKPN is to rely on its Class B permitted development rights in relation to our Client's Land; that v) UKPN in fact is expecting to rely upon its planning permission under Class B of Part 15 of the Permitted Development Order 2015/596;

f) Thus, the very inclusion of Article 10 (and the related parts of the Explanatory Memorandum) in the draft DCO itself evidences that the extent of the proposed "development" that is within the scope of "distribution lines", and/or is to be carried out by UKPN, under Class B "for" its undertaking, cannot in law on its proper construction in compulsory purchase order circumstances qualify as "associated development" inside the legal scope of section 115(2)(a);

g) In further consequence, the subsisting actual availability to UKPN of Class B land development rights by which to execute its "development" without prior approval, engenders an automatic alternative of fact in respect of the section 122, Planning Act 2008 consideration of section 122(a) and (b). The law in *Prest* requires the Examining Authority and Secretary of State to adopt that alternative;

h) The part of our Client's Land asserted by National Grid as being "required" for UKPN development cannot be "required" "for the development" in the draft DCO *because* UKPN is already entitled under Class B of Part 15 to Schedule 15 of the Permitted Development Order 2015/596;

i) For the protection of our Client, reliance can only be placed on section 127 of the Planning Act 2008 in so far as the UKPN "development" is envisaged to be carried out on our Client's Land.

12. **"HILLSIDE"**

12.1 The inclusion of Article 10 in the Draft DCO is inconsistent with the UK Government's determination on the 11th September 2025 to expressly reject legislating against the decision of the Supreme Court in *Hillside Parks Ltd v Snowdonia National Park Authority [2022] 1 WLR 5077.*

12.2 **Document APP-057**, Explanatory Memorandum, asserts the following as purported justification to the Secretary of State for inclusion of Article 10 in the draft DCO because of the Supreme Court decision of 2nd November 2022 in *Hillside Parks Limited v Snowdonia National Park Authority*:

> *3.14.2 Article 10(2) further confirms that any other planning permissions or development consent orders which conflict with the authorised development can proceed without the risk of enforcement action being taken notwithstanding any incompatibility between the Project and the development authorised under that planning permission or development consent order. In light of the Supreme Court's ruling in Hillside Parks Ltd v Snowdonia National Park Authority [2022] UKSC 30, this provision is considered necessary to ensure that developments under such planning permissions or development consent orders are not prohibited…*
>
> *3.14.4 As noted, both Articles 10(2) and 10(3) seek to address salient points arising from the Supreme Court's recent decision in Hillside Parks Ltd v Snowdonia National Park Authority [2022] UKSC 30…*

12.3 Our Client notes the following:

a) There remains no need in fact or law for Article 10. This is because Parliament's statutory scheme of the Planning Act 2008 includes both Section 31, the requirement for development consent for development, and Section 153 that provides for changes to orders granting development consent;

b) The Government has considered, but rejected legislating against the decision of the Supreme Court in *Hillside* by its rejection of Amendment 105 to the Government's Planning and Infrastructure Bill, Second Reading, 25th June 2025, in particular the House of Lords Committee Stage on 11th September 2025 (after the 28th August 2025 on which the

DCO Application was made). See Birketts LLP "Note on PLANNING AND INFRASTRUCTURE BILL 2025 – HANSARD EXTRACTS ON HILLSIDE AMENDMENTS" in **Appendix 5 -1** hereto.

12.4 The UK Government is recorded by Hansard as stating its clear and unambiguous position in relation to legislation against the Supreme Court's decision in the *Hillside* case: (Underlined and Bold emphasis added)

Baroness Taylor of Stevenage (Column 1193) Hansard Extract:

My Lords, I hesitate to step into this very knotty lawyer's wrangle, but it is necessary to do so because our common aim across the House is to sort out Hillside. We all know why we need to do that. As the noble Lord, Lord Banner, said, it is symbolic of all the issues that we are trying to get out of the way so that we can get on with the development that this country needs.

I thank the noble Lord, Lord Banner, for tabling Amendment 105—a repeat of his amendment from Committee that seeks to overturn the Hillside judgment—and for his new Amendment 113, which responds to some very constructive discussions we have had since Committee.

*As I said in Committee, we recognise that the Hillside judgment, which confirmed **long-established planning case law**, has caused real issues with the development industry. In particular, it has cast doubt on the informal practice of using "drop in" permissions to deal with change to large-scale developments that could build out over quite long periods—10 to 20 years.*

We have listened carefully to views across the House on this matter, and I appreciate the thoughts of all noble Lords who have spoken in this useful debate. One seasoned planning law commentator—I do not think it was the noble Lord, Lord Banner, or the noble Lord, Lord Carlile—called Hillside a "gnarly issue", and it has attracted a lot of legal attention. It is very important that we tread carefully but also that we move as quickly as we can on this.

Therefore, in response to the concerns, the Government propose a two-step approach to dealing with Hillside. First, we will implement the provisions from the Levelling-up and Regeneration Act for a new, more comprehensive route to vary planning permissions—Section 73B. In practice, we want this new route to replace Section 73 as the key means for varying permissions, given that Section 73 has its own limitations, which case law has also highlighted. The use of Section 73B will provide an alternative mechanism to drop-in

permissions for many large-scale developments—although we recognise not all.

Secondly, we will explore with the sector the merits of putting drop-in permissions on a statutory footing to provide a further alternative. This approach will enable provision to be made to make lawful the continued carrying out of development under the original permission for the large development, addressing the Hillside issue. It will also enable some of the other legal issues with drop-in permissions to be resolved.

In implementing Section 73B and exploring a statutory role for drop-in permissions to deal with change to large-scale developments, I emphasise that we do not want these routes to be used to water down important public benefits from large-scale development, such as the level of affordable housing agreed at the time of the original planning permission. They are about dealing with legitimate variations in a pragmatic way in response to changing circumstances over time.

Amendment 113 seeks to provide an enabling power to address Hillside through affirmative secondary legislation. I recognise that this provision is intended to enable the Government to have continued discussions with the sector and then work up a feasible legislative solution through the regulations. As with all enabling powers, the key issue is whether the provisions are ***broad enough*** *to deal with the issues likely to emerge from these discussions, as hinted at by the noble Lord, Lord Lansley.*

Based on the current drafting, this enabling power would not do that. ***For instance, there have been calls to deal with Hillside in relation to NSIP projects. That would require a wider scope, so we cannot accept the amendment without significant modifications****. That is why we think it is best to explore putting drop-in permissions on a statutory footing first and then drawing up the legislation.* ***This will give Parliament time to scrutinise****.*

To conclude, I hope that the approach I have set out addresses many of the concerns expressed in this debate. I ask the noble Lord ***not to press his amendments****.*

12.5 Lord Banner did press his amendments and the House of Lords expressly rejected them:

Lord Banner (Column 1194) Hansard Extract :

My Lords, in response to the noble Lords, Lord Wigley and Lord Carlile, I will start by clarifying that this is not about the facts of Hillside. That case is dead; fought and lost. This is about the principle….

I find it baffling that the Government do not take what, as the noble Lord, Lord Carlile indicated, is on the silver tray: the enabling power to deal with this…

Clearly, in the absence of any certainty on the timescale, once again we are kicking the can down the road. The kinds of detailed legal points, such as whether NSIPs should apply, are precisely the kind of things that could be resolved between now and Third Reading. The Prime Minister said that the Government's aim was to back the builders and not the blockers. I would like to see which Members of this House back the builders and which back the blockers, so I would like to test the opinion of this House…

Amendment 105 disagreed

12.6 It is clear from the evidence of the Hansard Debate that the UK Government voted on 11th September 2025 in the House of Lords against Amendment 105, notwithstanding that the Government recognizes "issues" for development under both the TCPA 1990 and under the Planning Act 2008. The Government also recognised that developers are ascertaining alternatives by which to re-introduce the customary commercial flexibility to which they had become accustomed over the years in the face of the *Pilkington* Principle referred to in the *Hillside* case. That vote postdates all of the DCO examples provided to the Examination by reference in the Explanatory Memorandum to the Draft DCO, and the circumstances stated by the UK Government have been clear from 11th September 2025 where (perhaps) previously they remained unclear.

12.7 In the face of the evidence of the Government's express position to "not" legislate against the Supreme Court's decision in the *Hillside* case, by means of either primary legislation or secondary "affirmative" legislation, the Examining Authority is not in law entitled to act inconsistently with her Government's stated position by recommending inclusion of Article 10 of the draft DCO. Instead, the Examining Authority is required to advise and recommend that Article 10 not be included because not including Article 10 would be consistent with the Government's rejection of Amendment 105 to the Bill; and conversely, to recommend that inclusion of Article 10 would be expressly inconsistent with the UK Government's state and public position on

"legislation" in relation to the *Hillside* case. The draft DCO is (of course) "legislation".

12.8 The Secretary of State determining this DCO Application under section 103(1) ("The Secretary of State has the function of deciding an application for an order granting development consent") of the Planning Act 2008 is not entitled in law to act inconsistently with the Government of which he is a part (that has already determined to not legislate against the Supreme Court) by his authorizing inclusion in secondary legislation of the draft DCO sought by National Grid of Article 10.

12.9 National Grid can rely on section 153 of the Planning Act 2008 by which to make applications to change the DCO (if granted) to the Secretary of State. The Government evidently comprehends that machinery to be sufficient for the flexibility that may be sought by a developer of an NSIP, and at whatever pace they may or may not like to proceed with their particular development.

12.10 Further, as the UK Government expressly recognised in the debate recorded by Hansard, there remains a complete practical answer currently to the commercial 'flexibility' desired by National Grid. As the Supreme Court held in *Hillside*: (Emphasis added)

50. The aspect of the case which Winn J left out of account in his analysis is that planning permission for a multi-unit development is applied for and is granted for that development as an integrated whole. In deciding whether to grant the permission, the local planning authority will generally have had to consider, and may be taken to have considered, a range of factors relevant to the proposed development taken as a whole, including matters such as the total number of buildings proposed to be constructed, the overall layout and physical appearance of the proposed development, the infrastructure required, its sustainability in planning terms and whether the public benefits of the proposed development as a whole outweigh any planning objections. In granting permission for such a scheme, the planning authority cannot be taken (absent some clear contrary indication) to have authorised the developer to combine building only part of the proposed development with building something different from and inconsistent with the approved scheme on another part of the site…

*69. The Pilkington principle should not be pressed too far. Rightly in our view, the Authority has **not** argued on this appeal that the continuing authority of a*

*planning permission is dependent on exact compliance with the permission such that **any** departure from the permitted scheme, however minor, has the result that no further development is authorised unless and until exact compliance is achieved or the permission is varied. That would be an unduly rigid and unrealistic approach to adopt and, for that reason, would generally be an unreasonable construction to put on the document recording the grant of planning permission—all the more so where the permission is for a large multi-unit development. **The ordinary presumption must be that a departure will have this effect only if it is material in the context of the scheme as a whole**: see Lever Finance Ltd v Westminster (City) London Borough Council [1971] 1 QB 222, 230 . **What is or is not material is plainly a matter of fact and degree**…*

73.. Mr Banner also submitted that it would cause serious practical inconvenience if a developer who, when carrying out a large development, encounters a local difficulty or wishes for other reasons to depart from the approved scheme in one particular area of the site cannot obtain permission to do so without losing the benefit of the original permission and having to apply for a fresh planning permission for the remaining development on other parts of the site.

*74. In our view, that is indeed the legal position where, as here, a developer has been granted a full planning permission for one entire scheme **and wishes to depart from it in a material way**. But although this feature of the planning legislation means that developers may face practical hurdles, the problems should not be exaggerated. Despite the limited power to amend an existing planning permission, there is no reason why an approved development scheme cannot be modified by an appropriately framed additional planning permission which covers the whole site and includes the necessary modifications. The position then would be that the developer has two permissions in relation to the whole site, with different terms, and is entitled to proceed under the second.*

75. The Authority has argued that, because the planning legislation does not confer any power on a local planning authority to make a material change to an existing planning permission, a later planning permission cannot have the effect of modifying in any material way the development scheme authorised by an earlier permission.

76. The trial judge, Judge Keyser QC, did not find this argument persuasive and nor do we. We agree with him that, although there cannot strictly be a variation of a planning permission (save as mentioned in paras 24 above), there is "no reason why a grant of permission might not, on its true construction, authorise development in accordance with an earlier permission (e g the Master Plan) but with specified modifications": para 48. That seems to us to be how, at least prima facie, a planning permission described as a "variation" of an earlier planning permission would reasonably be understood. The legal analysis which best gives effect to the expressed intention is to construe the permission described as a "variation" as a permission to carry out the development described in the original permission as modified to accommodate the development specifically authorised by the new permission (and as modified by any previous such "variations"). However, if an application for a permission described as a "variation" is properly to be analysed in this way, ordinarily it would have to be accompanied by a plan which showed how the proposed new permission incorporated the changes indicated into a coherent design ***for the whole site****. Mere use of the "variation" label by itself is not sufficient to show how the new permission ought properly to be interpreted, when read as a whole and having regard to the relevant context.*

77. Where an application for a variation of a previous permission is properly to be regarded as an application for a fresh permission ***for the whole site****, this may of course mean that the application is required to be accompanied by certain documentation relevant to the whole site, such as an environmental impact assessment. Where the variation is comparatively minor and circumstances have not changed, it may be possible to re-use or update such documentation submitted in support of the application for the previous permission. Whether this is possible or not will depend upon the particular circumstances.*

12.11 National Grid can rely on section 153 of the Planning Act 2008 by which to make applications to change the DCO (if granted) to the Secretary of State. The Government evidently comprehends that machinery to be sufficient for the flexibility that may be sought by a developer of an NSIP, and at whatever pace they may or may not like to proceed with their particular development.

12.12 National Grid also appear to have misunderstood the *Hillside* case in its application to subsequent changes of the actual landscape of a consented DCO resulting from a different and subsequent consent.

12.13 As was said by the Supreme Court in that case:

*69. The Pilkington principle should not be pressed too far. Rightly in our view, the Authority has **not** argued on this appeal that the continuing authority of a planning permission is dependent on exact compliance with the permission such that **any** departure from the permitted scheme, however minor, has the result that no further development is authorised unless and until exact compliance is achieved or the permission is varied. That would be an unduly rigid and unrealistic approach to adopt and, for that reason, would generally be an unreasonable construction to put on the document recording the grant of planning permission—all the more so where the permission is for a large multi-unit development. **The ordinary presumption must be that a departure will have this effect only if it is material in the context of the scheme as a whole**: see Lever Finance Ltd v Westminster (City) London Borough Council [1971] 1 QB 222, 230 . **What is or is not material is plainly a matter of fact and degree**…*

70… If the planning authority makes a change to a planning permission under section 96A because satisfied that the change is not material, this will have the benefit for the landowner that it can be certain that the altered pattern of development is indeed within the scope of the permission. It could not afterwards be said that there has been any departure at all from the scheme for which permission has been granted. If, on the other hand, the landowner alters the pattern of development in an immaterial way without first obtaining a variation under section 96A , it does not follow that the development must be treated as unauthorised by the original, unvaried permission…

74. In our view, that is indeed the legal position where, as here, a developer has been granted a full planning permission for one entire scheme and wishes to depart from it in a material way. It is a consequence of the very limited powers that a local planning authority currently has to make changes to an existing planning permission. But although this feature of the planning legislation means that developers may face practical hurdles, the problems should not be exaggerated. Despite the limited power to amend an existing planning permission, there is no reason why an approved development scheme cannot be modified by an appropriately framed additional planning permission which covers the whole site and includes the necessary modifications. The position then would be that the developer has two permissions in relation to the whole site, with different terms, and is entitled to proceed under the second.

12.14 It remains a matter for National Grid whether or not to withdraw its draft DCO and redraft it so as to ensure that it "expressly" states all of its desired contents in the draft DCO and in some way cross-refers to the subsisting planning permissions envisaged to be relied on and for what, and ensures no overlap between the terms of the draft DCO and the terms of the said planning permissions in relation to our Client's Land. Or, whether in the context of the proposed compulsory acquisition of our Client's Land, National Grid maintains the objective doubt in respect of the scope of the draft DCO as it relates to our Client Land. In that respect, see *Prest* in the **Section 9 - Law**.

SECTION 6 – FARM GEOGRAPHY – ACCESS, SOIL AND WATER

(A) This Section concerns the current physical situation of [redacted] its current access and access layout, soil quality, below ground engineered land drainage, and water resources, and the catastrophic impacts on these Land Use features that would result from the proposed Nationally Significant Infrastructure Project for electric transmission lines above ground between Norwich and Tilbury.

13. FARM GEOGRAPHY

Farm Plan Geography

13.1 The basic plan geography of [redacted] ("the Farm") is as follows and by reference to **Plans A-G**.

13.2 **Plan A** (October 2025 base plan of "National Grid") shows in diagrammatic form the basic geography of the Farm situated at within the extent of HM Land Registry Title Plan for HM Land Title Reference SK316171 referred to in Section 1 above. On Plan A, the land area of the Farm is coloured green to connote the the Farm. The green coloured area is referred to as the "Farm Area". The Farm Area is sub-divided into areas identified by letters "A" to "Q" for convenience of identification and to identify the actual farmed area of the Farm (together with certain unlettered areas). Immediately to the South West of Field "N" is an unmarked green area that is the location of the Thornbush Hall itself, and, to its immediate West, that of a yard and buildings that serve the Farm ("the Farm Yard").

13.3 Within the (green coloured) Farm Area can be seen a series of blue lines whose Easternmost ends are marked by an arrow. These blue lines indicate existing farm tracks within the Farm Area and by which access within Farm

Area is gained. The words in red “Access B” and “Access D” indicate farm tracks from East to West and the blue lines that are shown approximately North to South show how the blue lines form together an internal access layout (“the Access Layout”) inside of the Farm Area. It can be seen that the Westernmost ends of the Access Layout terminate with a blue arrow indicating that the Access Layout does not extend farther. The words in red - “Access A” - indicate access (“Access”) from the highway to the Farm Area. The red words “Access C” and the word “Grindle” next to a black arrow indicates accesses from the Farm Area into fields adjacent to the Farm Area. Immediately to the South of the South-Westernmost blue arrow is a narrow field access from Field D that lets onto the highway bend in that location.

13.4 The four sub-areas in the Farm Area that are not identified by a letter instead contain a diagram of a tree and indicate wooded areas.

13.5 **Plan B** (October 2025 base plan of “National Grid”) shows the basic geography of the Farm in the same way as is shown on Plan A with the addition of three watercourse indicated by blue lines. The land area of the Farm is coloured green. The green coloured area is referred to as the “Farm Area”. The Farm Area is sub-divided into areas identified by letters “A” to “Q” for convenience of identification. Plan B identifies by 3 blue lines the existence of 3 watercourses on the Farm, as well as indicating ditches and a pond shown by a blue circle within Burstall Long Wood.

13.6 **Plan C** (thought to date from 2021) shows the Farm Area (less its Eastern part). The Farm Area is identified in white text as “664.5” (acres) (or 268.9 hectares) isolated from the highways on all sides save from the point on Plan A marked: as “Access A” to the East; and near to the blue-coloured arrow in Field D to the South West. This Plan derives from National Grid. Denoted by a faint dashed line along an axis of about North West to South East, the existing two lines of the pylons of National Grid and of UKPN can be seen on the Southern edge of the Substation and extending South Eastwards at an angle to the Substation in an approximate narrow “V” shape.

13.7 **Plan D** (11th August 2021) shows by a yellow dot the existence of a Borehole on the Farm Area immediately to the West of the Bramford Substation. This Plan derives *from* National Grid, is dated 11th August 2021, identifies the Borehole as the concern of the Client’s father (Herbert Godbold, now deceased) and mother (Olive Godbold), and their address at Thornbush Hall, Thornbush Lane, Bramford, Ipswich, Suffolk IP8 4JB. Plan C relates to the

"National Grid (Bramford to Twinstead) Land Referencing – Ownership Plan, Reference PIL ID: PIL-400" that was a DCO granted consent by the Secretary of State that came into force on 4th October 2024 as SI 2024/958 as *The National Grid (Bramford to Twinstead Reinforcement) Order 2024*.

13.8 **Plan E** (18th July 2025) shows the outline of the Farm Area in blue. This is the Plan sent by National Grid to the Client on 18th July 2025 to show to the Client at that same date the then stage of National Grid's then envisaged "draft" "nationally significant infrastructure project" and the development associated with it. The orange-coloured area shows the *outline of the area* of that project consulted upon in 2024. The pink-coloured area outlined in red shows the *outline of the area of that changed project* consulted upon in July 2025 and that does not include Bramford Substation.

13.9 **Plan F** (18th July 2025) shows in pink the area of the Bramford Substation extended by a slim red line to the East of that Substation. This is the Plan sent by National Grid to the Client on 18th July 2025 to show to the Client the then stage of National Grid's then envisaged "draft" "nationally significant infrastructure project". The orange-coloured area shows the *outline of the area* of that project consulted upon in 2024. The pink-coloured area outlined in orange and situated to the South West of the Bramford Substation shows the "Proposed Substation Boundary" *of that changed project* consulted upon in July 2025 and that does not include the infrastructure shown on **Plan E**. The existing two lines of the pylons of Eastern Power Networks PLC can be seen on the Southern edge of the Substation and extending at a South Eastwards angle from the Substation.

13.10 **Plan G** (28th August 2025) is an amalgamation for convenience of the Works Plans (**Documents APP- 018, Sheets 20 and 21** and **APP-019, Sheets 1 and 2,**) of National Grid Electricity Transmission PLC that relate to the Farm Area within the extent of HM Land Registry Title Plan for HM Land Title Reference SK316171. The Works Plans are dated "August 2025" and were never shown or made available by National Grid Electricity Transmission PLC (or its agent) to the Client before they were posted by PINS onto the website of the Examining Authority. **Plan F** shows the significant extent of the Works proposed by National Grid Electricity Transmission PLC (and by "UKPN" it appears) inside of the area outlined in red that corresponds with the area outlined in red on **Plan F** (18th July 2025). The red outlined area extends Eastwards to a point on the Southern edge of Thornbush Hall between that Hall and the adjacent Farm Yard and buildings.

13.11 **Plan H** (2nd October 2025) derives from "National Grid" and shows in diagrammatic form by means of squares with a "X" inside the permanent Pylon Works of National Grid and linking overhead transmission lines overlayed onto the (Green) Farm Area, along a pink shaded linear area, inside an extent of the red outline area of the proposed Works envisaged by National Grid.

13.12 The faint lines of the existing "V" of the two pylon lines of Eastern Power Networks PLC extending from the South side of Bramford Substation can be discerned extending South Westwards.

13.13 **Plan I** (August 2025) derives from National Grid Electricity Transmission PLC and shows the highways closures proposed by National Grid in the vicinity of the Farm Area and the closures of highways inside the Farm Area. Plan I is able to be magnified in some detail to show the layout of Thornbush Hall and the Farm Yard to its immediate West. Immediately to the South West of Thornbush Hall can be seen: a) a brown rectangle containing the text "W-155/042/0" that is close to a particular right of way; and b) the Easternmost extension of a magenta coloured dashed line described by the Key to Plan I as "Public Right of Way temporary closure (managed)". Plan I shows the closure by National Grid Electricity Transmission PLC of that Public Right of Way for the duration of the Works for its Westward length across the (green coloured) Farm Area between the two points marked "S-RB-108.5" and "S-RB-108.6".

13.14 It is evident from tracking clockwise around Plan I that there are numerous parts of Public Right of Ways *inside* the extent of the area outlined in red that would be also subject to "Public Right of Way temporary closure (managed)", and that broadly align also with the Access Layout referred to in Plan A above. For example (only):

13.14.1 South West of Thornbush Hall itself, it can be seen that the Public Right of Way between the two points marked "S-FP-112.5" and "S-FP-112.6" would be inside the extent of the red outlined area and near to the a brown rectangle containing the text "W-155/039/A" that is close to a particular right of way;

13.14.2 South West of Round Wood, it can be seen that the Public Right of Way between the two points marked "S-FP-114.2" and "S-FP-115.1" would be inside the extent of the red outlined area and near

to the a brown rectangle containing the text “W-486/003/0” that is close to a particular right of way;

13.14.3 On the South East Corner of Field C, it can be seen that the Public Right of Way between the two points marked “S-RB-110.3” and “S-RB-110.4” would be inside the extent of the red outlined area and near to the a brown rectangle containing the text “W-174/012/0” that is close to a particular right of way;

13.14.4 On the Western side of Field B, it can be seen that the Public Right of Way between the two points marked “S-FP-106.1” and “S-FP-107.1” would be inside the extent of the red outlined area and near to the a brown rectangle containing the text “W-174/012/0” that is close to a particular right of way;

13.14.5 On the North East Corner of Field A, it can be seen that the Public Right of Way between the two points marked “S-BR-105.2” and (further Eastwards along Bullen Lane) “S-BR-105.1” would be inside the extent of the red outlined area and near to the a brown rectangle containing the text “W-174/012/0” that is close to a particular right of way;

13.14.6 Along the majority of Bullen Lane is a dark blue line inside the red outline of the National Grid proposals’ area that is denoted by the Key as “Street management: temporary closure (managed)”

13.15 The result of the proposals in **Plan I** would be:

13.15.1 to physically landlock to access and isolate for the duration of the Works the Farm Area otherwise then between the highway of B1113 Bramford Road (Lorraine Drive) and Thornbush Hall itself; and

13.15.2 to destroy the Access Layout for the duration of the Works Westwards from the actual geographical point of Thornbush Hall resulting to prevent access by means of that Access Layout (save to Field H and part of O) to the Fields West of the Hall for that duration.

13.16 **Plan J** itemizes the impacts of the extent and duration of the Works of National Grid Electricity Transmission PLC (and “UKPN”) on the functionality of the

Farm Area, and their self-evident catastrophic effect to preclude the operation of the Farm Area over the Western two-thirds of that Area and result to in its land-locking against external access to its interior Area.

13.17 Within **Document APP-130**, ES Chapter 4, Project Description, Image 4.1, Indicative Construction Programme, shows two works (only) by National Grid Electricity Transmission PLC (only) that relate to the Client's Land inside the Farm Area:

13.17.1 The Bramford Substation Extension (green);

13.17.2 OHL Works RG & JC Route;

And the "indicative" period of those works to occur from 11th October 2026 to 31st December 2031, i.e. a total "indicative" constructional period of not less than 5 years within the are outlined in red that overlaps with the Farm Area.

13.18 It is evident from **Plan H** (and with regard to Plan J) that:

13.18.1 During the long period construction, a very significant majority of the Farm Area would be actually inside the extent of the red outlined area;

13.18.2 The Eastern extension of the red line of the Order Limits (along the length of a Public Right of Way coinciding with part of the Farm's Access Layout) to a point to the immediate South of the Hall and the related proposed closure of and access onto the Public Right of Way at that same actual Easternmost point, would result preclude access from that actual point *farther West* (and so preclude access into (and so out of)) to the Farm Area, including the Farm Yard to the immediate West of the Hall, and thereby sever access Westwards from the Hall for the duration of the Works;

13.18.3 By reference to the Field identification references on and as can be seen also on Plan A:

13.18.3.1 the presence of the pink-coloured shaded land oriented North to South would bisect the Access Layout shown on Plan A and result to preclude access into (and so out of)) and use of the Farm Area Westwards of that pink-coloured area for the duration of the Works of Fields A, B, C, D, half of E, and F;

13.18.3.2 the presence of the extent of the area of the (green-coloured) Farm Area overlapped by the extent and shape of the red line area would preclude access to and use of Fields A, B, C, D, E, F, G I, J, K, and R.

Farm Sectional Geography

13.19 The Sectional Geography of the Farm is as follows.

13.20 The basic sectional plan geography of Thornbush Farm is as follows and by reference to **Section Plans A-D**.

13.21 **Section Plan A** (2022) is a detailed Soil Analysis of the ground of the Thornbush Farm Area identified in green on Plan A above. The Soil Analysis demonstrates the soil of the ground of the Farm Area to be within the scope of "best and most versatile agricultural land" and is understood to be Grade 2.

13.22 **Section Plans B to D** show the certified layouts in plan and the depths in section of the engineered water system inside of the Fields of the Thornbush Farm Area. The Sectional Plans are identified by Field Numbers on Plans whose outline correlates with the sub-divisions identified by letter on **Plan A** above. Thus: Field G on **Plan A** is Field 17 on Sectional Plan B, pdf page 1; Field C on **Plan A** is Field 12 on **Section Plans D**, pdf page 8. The Sectional Plans include numerous plans expressly certified by an expert Land Drainage Engineer named Gavin Morris who surveyed the Farm Area between about 1996 to 1998 (as well as certified plans dating from 1967 and 1984 of below ground drainage runs).

13.23 The engineered land drainage/water supply to the Farm Area appear to derive from a scheme of the Ministry of Agriculture, Fisheries and Food (a significant UK Government Body that was dissolved in 2002) ("MAFF"): "Scheme No 38"; applied to Thornbush Farm in November 1984. See **Section Plans B**, pdf pages 5, 6, 7 and 9. On that basis, that scheme was installed in the public interest to improve the Farm Area.

13.24 The **Section Plans** include numerous plans of below ground level drains, inlet chambers, mole drains and differentiates between those constructed from tiles and later plastic drain runs. In particular, the certified plans also state the actual depth below the ground surface level of the relevant Field. For example (only):

13.24.1 **Section Plans C**, pdf page 1 shows that Field G contains drains at a level of 1250mm (and also electricity cable at 1200mm below ground surface level;

13.24.2 **Section Plans C**, pdf page 13 shows that Field E contains a drains along the Eastern edge of Burstall Long Wood;

13.24.3 **Section Plans C**, pdf page 14 shows that the Southern edge of Field E contains a drain that runs West/East at a depth of 800mm;

13.24.4 **Section Plans D**, pdf pages 1 and 2 show that Fields E and F contains a network of below ground level tile and plastic drains;

13.24.5 **Section Plans D**, pdf page 8 shows that Field C contains drains at a stated below ground level of “800mm” and “1000mm” beneath the surface level; the connection of the drainage “from [the Bramford] Substation” outflow, related inlet chambers, and also the “Underground electricity cables” (below the drainage system above), rerouted drains (in 1998), and the “Overhead line” of National Grid.

13.25 **Section Plans E** (August 2025) derive from National Grid and show “Illustrative” cross-sections of the National Grid Proposals. At pdf pages 2 and 3 are cross-sectional drawings showing:

13.25.1 the depths of underground cables of up to 1400mm over a wide;

13.25.2 a typical haul road without a depth.

13.26 However, the draft DCO at **Document APP-056**, Article 5, Limits of Deviation, states: (Emphasis added)

5.—(1) Subject to paragraph (4), in respect of the overhead electric line and underground electric line works forming part of the authorised development for which it is granted development consent by paragraph (1) of article 3 (development consent etc. granted by the Order), the undertaker may—

(a) deviate from the lines or situations shown on the works plans within the limits of deviation relating to a Work shown on those plans and carry out construction activities for the purpose of the authorised development anywhere within the Order limits; and

(b) in respect of the pylons deviate vertically as set out in the table of parameters—

(i) to any extent upwards not exceeding 6 metres save in respect of pylons TB140 to TB142 (inclusive) and TB238 to TB243 (inclusive) which may deviate vertically to any extent upwards not exceeding 18 metres;

(ii) to such extent downwards as the undertaker considers necessary or convenient;

(c) in respect of the overhead conductors and fibre-optic earth wires deviate vertically to such extent as the undertaker considers necessary or convenient;

(d) in respect of the underground electric line, deviate vertically—

(i) upwards such that the minimum distance that will be kept between the top of the protective tiles or (where there are no protective tiles) the top of the cable ducts and the top of the finished ground level is 0.9 metres; and

(ii) downwards to such extent as the undertaker considers necessary or convenient.

(2) Without prejudice to article 3(8) the removal, clearance, decommissioning and demolition of any existing electric line may take place within the Order limits;

(3) Subject to paragraph (4), in respect of permanent above ground structures, erections and apparatus forming part of the authorised development, including substations, converter stations and cable sealing end compounds, other than the overhead electric line and underground electric line to which paragraph (1) refers—

(a) the authorised development is to be carried out within any applicable non-linear limits of deviation shown on the works plans; and

(b) the undertaker may deviate to any extent upwards not exceeding 10% above the maximum height shown on the table of parameters

and to such extent downwards as the undertaker considers necessary or convenient.

(4) The maximum limits of vertical deviation specified in paragraphs (1)(b), (1)(d) and (3)(b) do not apply where it is demonstrated by the undertaker to the Secretary of State's satisfaction and the Secretary of State, following consultation with the relevant planning authority and any other person the Secretary of State considers appropriate having regard to the proposed deviation in question and the statutory roles and responsibilities of such person, certifies accordingly that a deviation in excess of these limits would not give rise to any materially new or materially different environmental effects to those identified in the Environmental Statement.

13.27 It is evident from proposed Article 5, that: (Emphasis added) "*the undertaker may—:*

a) (1)(a) "*deviate from the lines or situations shown on the works plans within the limits of deviation relating to a Work shown on those plans and carry out construction activities for the purpose of the authorised development anywhere within the Order limits*";

b) (1)(b) "*in respect of the pylons deviate vertically as set out in the table of parameters— … ii) to such extent downwards as the undertaker considers necessary or convenient*";

c) (1)(d) "*in respect of the underground electric line, deviate vertically— …ii) downwards to such extent as the undertaker considers necessary or convenient*";

d) (3) "*in respect of permanent above ground structures, erections and apparatus forming part of the authorised development, including substations, converter stations and cable sealing end compounds, other than the overhead electric line and underground electric line to which paragraph (1) refers— …(b) the undertaker may deviate … to such extent downwards as the undertaker considers necessary or convenient*."

13.28 The proposed Article 5 power is unfettered in its downward reach and available to National Grid Electricity Transmission PLC and apparently also to "UKPN".

13.29 It is evident that the attribution of proposed Article 5 powers to inside the extent of the red outlined area shown on Plan G above, and having regard to the depths of below ground Field drainage stated and certified on the Section Plans referred to above, that the construction of the Works by National Grid Electricity Transmission PLC and of the Works by "UKPN" within the red outlined area overlapping the Farm Area, would result in the destruction of the engineered land drainage and below ground water management system that has sustained the Farm Area with water and with land drainage for decades.

13.30 The unfettered terms of the Article 5 power in the downward direction is contrary to and in breach of paragraphs 5.11.12-14 of NPS EN-1: (Emphasis added)

5.11.12 Applicants should seek to minimise impacts on the best and most versatile agricultural land (defined as land in grades 1, 2 and 3a of the Agricultural Land Classification) and preferably use land in areas of poorer quality (grades 3b, 4 and 5).

5.11.13 Applicants should also identify any effects and seek to minimise impacts on soil health and protect and improve soil quality taking into account any mitigation measures proposed.

5.11.4 Development of land will affect soil resources, including physical loss of and damage to soil resources, through land contamination and structural damage. Indirect impacts may also arise from changes in the local water regime, organic matter content, soil biodiversity and soil process.

13.31 Further:

5.11.17 Applicants should ensure that a site is suitable for its proposed use, taking account of ground conditions…

13.32 In further particular:

14. **SOIL**

14.1 NPS EN-1 includes as follows: (Emphasis added)

5.11.1 An energy infrastructure project will have a direct effect on the existing use of the proposed site and may have indirect effects on the use, or planned use, of land in the vicinity for other types of development…

5.11.3 Although the re-use of previously developed land for new development can make a major contribution to sustainable development by reducing the amount of countryside and undeveloped greenfield land that needs to be used, it may not be possible for many forms of energy infrastructure.

5.11.4 Development of land will affect soil resources, including physical loss of and damage to soil resources, through land contamination and structural damage. Indirect impacts may also arise from changes in the local water regime, organic matter content, soil biodiversity and soil process…

5.11.13 Applicants should also identify any effects and seek to minimise impacts on soil health and protect and improve soil quality taking into account any mitigation measures proposed…

5.11.14 Applicants are encouraged to develop and implement a Soil Management Plan which could help minimise potential land contamination. The sustainable reuse of soils needs to be carefully considered in line with good practice guidance where large quantities of soils are surplus to requirements or are affected by contamination [254]…

Mitigation

5.11.23 Although in the case of most energy infrastructure there may be little that can be done to mitigate the direct effects of an energy project on the existing use of the proposed site (assuming that some of that use can still be retained post project construction) applicants should nevertheless seek to minimise these effects and the effects on existing or planned uses near the site by the application of good design principles, including the layout of the project and the protection of soils during construction…

5.11.31 The Secretary of State should consider whether the mitigation measures put forward by an applicant are acceptable and whether requirements or other provisions in respect of these measures should be included in any grant of development consent.

Secretary of State decision making

5.11.34 The Secretary of State should ensure that applicants do not site their scheme on the best and most versatile agricultural land without justification. Where schemes are to be sited on best and most versatile agricultural land the Secretary of State should take into account the

economic and other benefits of that land. Where development of agricultural land is demonstrated to be necessary, areas of poorer quality land should be preferred to those of a higher quality.

14.2 Paragraphs 187 and 188 of the NPPF (MHCLG, 2024) state that planning (policies) and *decisions* should contribute to and *enhance* the natural and local environment by recognising the wider benefits from natural capital including the best and most versatile agricultural land.

14.3 **Document APP-085**, Planning Statement (August 2025) includes in Section 7, "Land Quality" and in particular, in Section 7.3.630 et seq "Assessment" includes as follows: (Emphasis added)

7.63.631 The detailed agricultural land classification (ALC) site surveys undertaken for the Project are presented in Table 6.10 of ES Chapter 6 (document reference 6.6). The site surveys confirm the presence of best and most versatile land within the Order Limits as shown in Figure 6.3: Detailed ALC Mapping (document reference 6.6.F3). Within the 1011 hectares of land surveyed, 83.7% of the land is BMV land in Grades 1, 2, and 3a. It illustrates that the Project comprises a greater extent of BMV land than compared to the average for England (65%)…

7.3.634 National Grid has also embedded measures into the design of the Project to avoid or reduce significant effects that may otherwise be experienced during construction and operation (and maintenance) of the Project. Measures adopted include sensitive routeing and siting of the alignment and Order Limits to try and minimise adverse impacts.

7.3.635 The Outline CoCP (document reference 7.2) contains relevant good practice measures relating to Agriculture and Soils. Example measures include:

- *GG10: The Project will be constructed in compliance with the required Environmental Control Plans (ECPs). Those which are relevant to this chapter which are anticipated to be required, at this stage include an Outline LEMP and Outline Soil Resource Plan (including but not limited to details of soil resources present, soil management and storage, and measures for soil restoration) (details of the contents of this plan will be included within the Outline CoCP)*
- *GG18: The Main Works Contractor(s) will undertake pre-site condition surveys as part of the site setup. This will include making*

a record of the condition of existing features such as tracks and roads. Post-site condition surveys will be undertaken by the contractor after construction and the results of these will be discussed with the landowner prior to handover…

7.3.638 Detailed agricultural land classification undertake for the Project confirmed the presence of Best and Most Versatile Land (BMV) in Grades 1, 2 and 3a. Within the 1,011 ha of land surveyed, 83.7% of the land is BMV land in Grades 1, 2, and 3a.

7.3.639 The total extent of each ALC grade across the Project includes data from both the detailed ALC surveys and the ALC predictive mapping. Across the Order Limits, a total of 3,755 ha, 82.3% of the land is BMV land in Grades 1, 2, and 3a.

7.3.640 During construction there would be a loss of BMV land (ALC Grades 1, 2 and 3a) from agricultural productivity. It is calculated that 3,461 ha of agricultural land would be temporarily removed from agricultural production during construction. Of this, 2,923 ha (84.4%) are mapped as Grades 1, 2 and 3a and as such the temporary removal is considered to have a temporary negative effect which would be significant.

7.3.641 During operation (and maintenance), there would be a permanent loss of areas of agricultural land required for permanent infrastructure. As presented in Table 6.14 of ES Chapter 6: Agriculture and Soils (document reference 6.6) this equates to approximately 172.7 hectares of Grade 1, Grade 2 and Grade 3a agricultural land (i.e., BMV land) would be taken out of agricultural production permanently.

7.3.642 The Project notes the SoS decision making at paragraph 5.11.34 of NPS EN-1 (regarding avoiding siting a scheme on BMV land). The Project has sought to minimise impacts on BMV agricultural land as far as practicable and includes mitigation measures to reduce impacts on the soil resource. Given the predominance of BMV agricultural land within East Anglia, it has not been possible to avoid both temporary and permanent effects on this resource. The permanent loss of BMV land is considered necessary on the basis that there is urgent need for CNP Infrastructure such as the Project…

7.3.643 It is acknowledged that the Project will result in a loss of BMV land and is therefore contrary to NPS EN-1 paragraph 5.11.3, was well as the NPPF (MHCLG, 2025) and relevant local planning policy.

14.4 Reliance is placed by National Grid Electricity Transmission PLC on an Outline Code of Construction Practice.

14.5 That reliance is misplaced.

14.6 Table 6.1 includes “Commitment Reference”. However, and for example, GG Commitment GG21 is gauged by reference to “the most efficient, safe and appropriate manner” and is further contingent on the “Main Works Contractor” if the Project is consented.

14.7 Table 6.1 is unlawful in so far as it purports to supply a safety net or safeguard by which to ensure subsequent adherence to NPS EN-1 paragraph 5.113 national objectives in respect of “*minimis[ing] impacts on BMV agricultural land as far as practicable”* (as the National Grid Planning Statement describes it).

14.8 The mitigation terms are unlawful, there is an absence of information and ensured relevant objectives before the Examining Authority (and the Secretary of State in due course) and, consequently, it is currently in breach of the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017.

14.9 Regulation 3(1) includes: (Emphasis added)

“EIA” has the meaning given by regulation 5;…

“environmental information” means the environmental statement (or in the case of a subsequent application, the updated environmental statement), including any further information and any other information, any representations made by any body required by these Regulations to be invited to make representations and any representations duly made by any other person about the environmental effects of the development and of any associated development;

“environmental statement” has the meaning given by regulation 14; …

14.10 Regulation 4 provides: (Emphasis added)

1) This regulation applies to—

a) applications for an order granting development consent for EIA development received by the Secretary of State; and

b) subsequent applications for EIA development received by a relevant authority.

2) Where this regulation applies, the Secretary of State or relevant authority (as the case may be) must not (in the case of the Secretary of State) make an order granting development consent or (in the case of the relevant authority) grant subsequent consent unless an EIA has been carried out in respect of that application.

14.11 Regulation 5 provides: (Emphasis added)

1) The environmental impact assessment ("the EIA") is a process consisting of—

a) the preparation of an environmental statement or updated environmental statement, as appropriate, by the applicant;

b) the carrying out of any consultation, publication and notification as required under these Regulations or, as necessary, any other enactment in respect of EIA development; …

2) The EIA must identify, describe and assess in an appropriate manner, in light of each individual case, the direct and indirect significant effects of the proposed development on the following factors—

…

c) land, soil, water, air and climate;

…

d) the interaction between the factors referred to in sub-paragraphs (a) to (d).

3) The effects referred to in paragraph (2) on the factors set out in that paragraph must include the operational effects of the proposed development, where the proposed development will have operational effects. …

4) …

5) The Secretary of State or relevant authority, as the case may be, must ensure that they have, or have access as necessary to, sufficient expertise to examine the environmental statement or updated environmental statement, as appropriate.

14.12 The Examining Authority is understood to be Chaired by a Soil Expert. By contrast:

a) National Grid Electricity Transmission PLC appears to have not instructed yet a Main Contractor nor ensured that the maintenance

of the current soil quality is an environmental objective of that Contractor's contract;

b) Within "UKPN":

i) UK Power Networks Holdings Limited appears to have not instructed yet a Main Contractor nor ensured that the maintenance of the current soil quality is an environmental objective of that Contractor's contract;

ii) Eastern Power Networks PLC appears to have not instructed yet a Main Contractor nor ensured that the maintenance of the current soil quality is an environmental objective of that Contractor's contract.

14.13 In *Smith v First Secretary of State* [2003] Env. L.R. 32, the Court of Appeal considered the legal scope of the *Rochdale* Envelope and the EIA Regulations and the Directive from which they derived. That Court held as follows: (Emphasis added)

24. We have also been referred to the following decisions: R. v Rochdale Metropolitan Borough Council Ex p. Tew [1999] 3 P.L.R. 74 and R. v Rochdale Metropolitan Borough Council Ex p. Milne [2001] J.P.L. 470 decisions of Sullivan J.; R. v Cornwall County Council Ex p. Hardy [2001] Env. L.R. 26 a decision of Harrison J. which followed Sullivan J.'s approach in Tew and Milne ; R. (on the application of Barker) v London Borough of Bromley [2002] Env. L.R. 631 CA in which Sullivan J.'s approach in Milne and Tew was approved.

25. Principles which those authorities establish seem to me to be the following: First, where outline planning consent is being applied for (and Tew and Milne were cases concerned with outline planning consent, Milne being round two of a battle over the same development), it is at the outline consent stage that the planning authority must have sufficient details of the proposed development, sufficient details of any impact on the environment, and sufficient details of any mitigation to enable it to comply with its Art.4(2) obligation.

26. Second, the reason for that is that once outline planning consent has been given there is effectively no going back without (at the very least) the payment of compensation. As Sullivan J. said in Tew :

"Even if significant adverse impacts are identified at the reserved matters stage, and it is then realised that mitigation measures will be inadequate, the local planning authority is powerless to prevent the development from proceeding" [97F].

There will accordingly be no proper opportunity when the planning authority considers the matters reserved to reappraise the environmental issues. Indeed Barker held that the obligation under Art.4(2) is not an obligation on the planning authority at the consideration of the reserved issue stage.

27. Third, the planning authority or the Inspector will have failed to comply with Art.4(2) if they attempt to leave over questions which relate to the significance of the impact on the environment, and the effectiveness of any mitigation. This is so because the scheme of the regulations giving effect to the Directive is to allow the public to have an opportunity to debate the environmental issues, and because it is for those considering whether consent to the development should be given to consider the impact and mitigation after that opportunity has been given. As Harrison J. put it in Hardy :

… At the reserved matters stage there are not the same statutory requirements for publicity and consultation. The environmental statement does not stand alone. Representations made by consultees are an important part of the environmental information which must be considered by the local planning authority before granting planning permission. Moreover, it is clear from the comprehensive list of likely significant effects in para.2(c) of Sch.3 , and the reference to mitigation measures in para.2(d), that it is intended that in accordance with the objectives of the Directive, the information contained in the environmental statement should be both comprehensive and systematic, so that a decision to grant planning permission is taken 'in full knowledge' of the project's likely significant effects on the environment. If consideration of some of the environmental impacts and mitigation measures is effectively postponed until the reserved matters stage, the decision to grant planning permission would have been taken with only a partial rather than a 'full knowledge' of the likely significant effects of the project. That is not to suggest that full knowledge requires an environmental information statement to contain every conceivable scrap of environmental information about a particular

project. The Directive and the Assessment Regulations require likely significant effects to be assessed. It will be for the local planning authority to decide whether a particular effect is significant, but a decision to defer a description of a likely significant adverse effect and any measures to avoid, reduce or remedy it to a later stage would not be in accordance with the terms in Sch.3 , would conflict with the public's right to make an input into the environmental information and would therefore conflict with the underlying purpose of the Directive."

28. Fourth, (and here as it seems to me one reaches the most difficult area) it is certainly possible consistent with the above principles to leave the final details of for example a landscaping scheme to be clarified either in the context of a reserved matter where outline planning consent has been granted, or by virtue of a condition where full planning consent is being given as in the instant case…

33. In my view it is a further important principle that when consideration is being given to the impact on the environment in the context of a planning decision, it is permissible for the decision maker to contemplate the likely decisions that others will take in relation to details where those others have the interests of the environment as one of their objectives. The decision maker is not however entitled to leave the assessment of likely impact to a future occasion simply because he contemplates that the future decision maker will act competently. Constraints must be placed on the planning permission within which future details can be worked out, and ***the decision maker must form a view about the likely details and their impact on the environment****.*

14.14 In this DCO Application: the Main Contractor remains not yet contracted by National Grid Electricity Transmission PLC nor by UK Power Networks Holdings Limited nor by Eastern Power Networks PLC; the terms of the provisions relating to soil and access provisions are inchoate and conditional; there is no evidence before the Secretary of State of what the Main Contractor may or may not do, nor whether the particular Main Contractor would have soil objectives as one of his environmental objectives; nor is there any binding contract to ensure that the Main Contractor would execute the Project in respect of soil and access matters within clearly defined "constraints" ensuring the Main Contractor operates inside of those Constraints; and so it is impossible to know today in late 2025/early 2026 what would be the impact on the soil environment of the Farm as a result of the project.

14.15 It follows that Regulation currently prohibits a grant of development consent for the proposed draft DCO because of the likely significant resulting effect on the Access Layout and Soil of the Farm Area consequent on the Works sought to be authorised by the three parties:

a) National Grid Electricity Transmission PLC;

b) UK Power Networks Holdings Limited; and

c) Eastern Power Networks PLC.

15. LOCAL WATER REGIME, WATER QUALITY AND RESOURCES

15.1 NPS EN-1 recognises the "local water regime" may be affected by the development: (Emphasis added)

5.11.4 Development of land will affect soil resources, including physical loss of and damage to soil resources, through land contamination and structural damage. Indirect impacts may also arise from changes in the local water regime, organic matter content, soil biodiversity and soil process…

5.11.13 Applicants should also identify any effects and seek to minimise impacts on soil health and protect and improve soil quality taking into account any mitigation measures proposed…

15.2 NPS EN-1 also provides under Water Quality and Resources: (Emphasis added)

5.16.1 Infrastructure development can have adverse effects on the water environment, including groundwater…

5.16.2 During the construction, operation, and decommissioning phases, development can lead to increased demand for water, involve discharges to water, and cause adverse ecological effects resulting from physical modifications to the water environment. There may also be an increased risk of spills and leaks of pollutants to the water environment …

Applicant Assessment

5.16.3 Where the project is likely to have effects on the water environment, the applicant should undertake an assessment of the existing status of, and impacts of the proposed project on, water quality, water resources and

physical characteristics of the water environment, and how this might change due to the impact of climate change on rainfall patterns and consequently water availability across the water environment, as part of the ES or equivalent (see Section 4.3 and 4.10)…

Mitigation

5.16.8 The Secretary of State should consider whether mitigation measures are needed over and above any which may form part of the project application. A construction management plan may help codify mitigation at that stage.

5.16.9 The risk of impacts on the water environment can be reduced through careful design to facilitate adherence to good pollution control practice. For example, designated areas for storage and unloading, with appropriate drainage facilities, should be clearly marked.

5.16.10 he impact on local water resources can be minimised through planning and design for the efficient use of water, including water recycling. If a development needs new water infrastructure, significant supplies or impacts other water supplies, the applicant should consult with the local water company and the EA or NRW…

5.16.16 The Secretary of State should consider proposals to mitigate adverse effects on the water environment and any enhancement measures put forward by the applicant and whether appropriate requirements should be attached to any development consent and/or planning obligations are necessary.

15.3 The Examining Authority and Secretary of State are referred to:

15.3.1 Plan B;

15.3.2 Plan C;

15.3.3 Plan G;

15.3.4 Section Plans B;

15.3.5 Section Plans C;

15.3.6 Section Plans D;

15.3.7 Section Plans E;

15.3.8 Article 5 of the draft DCO in **Document APP-036**, in respect of the unfettered power of *downward* deviation anywhere within the red line extent of the land inside the Farm Area; and

As referred to above and to what is shown and evident in respect of their contents and stated depths below ground surface level.

15.4 As has been referred to above:

15.4.1 Article 5 of the Draft DCO includes powers to carry out the Works anywhere *inside* the extent of the red outlined area shown on **Plan G**. The Requirements express no requirement for the protection or reinstatement of water courses identified on **Plan B**;

15.4.2 Article 5 of the Draft DCO includes powers to carry out the Works anywhere *inside* the extent of the red outlined area shown on **Plan G** to an unlimited depth. The Requirements express no requirement for the protection or reinstatement of water courses identified on **Plan B** nor of the land drainage shown on **Section Plans B-E** in so far as the red outlined area shown on Plan G overlaps the areas shown in those Section Plans;

15.4.3 The draft DCO Requirements impose no requirements to restore or reinstate the Farm Area to its physical state before the Works were executed.

15.5 As a result of the foregoing, in particular (for example only), it can be seen from a comparison of the blue lines on **Plan B** with the extent of the red outlined area on **Plan G** that:

15.5.1 The blue line between Fields E, I and H would be overlapped in parts along its length by the red-outlined area such that the blue line of the water course from Block Hills to the East would be inside the extent of that red outlined area;

15.5.2 The blue line between Field B (Reeds) would be overlapped along its Southern extent by the red-outlined area such that the blue line would be inside the extent of that red outlined area;

15.5.3 The blue line between Field O and R (a spring near to the cowshed, East of the Grindle identified on Plan B) would be close to the Southern extent of the red-outlined area situated above that water course.

15.6 In further particular (for example only), it can be seen from a comparison of the plans in **Section Plans B-D** with the extent of the red outlined area on **Plan G** that:

15.6.1 The below ground land and mole drainage system of the Farm Area would be truncated by its presence inside the proposed extent of the red outlined area shown on Plan G;

15.6.2 The result of the unfettered power in Article 5 of the Draft DCO would be to authorise:

15.6.2.1 National Grid Electricity Transmission PLC;

15.6.2.2 UK Power Networks Holdings Limited; and

15.6.2.3 Eastern Power Networks PLC;

to destroy the land drainage system of the Farm Area inside that red outlined area on **Plan G**, and in consequence, destroy the utility of that system in so far as it is situated in parts of Fields adjacent to the edge of that red outlined area.

15.7 The Requirements of the Draft DCO include adherence to an Outline Code of Construction Practice (document reference 7.2) contains within Table 6.1, “Mitigation Measures/environmental commitments”, that include (so-called) “Commitments” as follows.

15.8 “Commitment” W01 states: (Emphasis added)

All qualifying works within and in proximity to main rivers and flood defences will be in accordance with a method approved under environmental permits issued by the Environment Agency under the Environmental Permitting (England and Wales) Regulations 2016. Qualifying works to ordinary watercourses will accord with the protective provisions of the DCO for the benefit of the LLFAs.

15.9 “Commitment” W02 states: (Emphasis added)

For open cut watercourse crossings and installation of vehicle crossing points, mitigation measures will include but not be limited to:

Where practicable, reducing the working width for open cut crossings of a main or ordinary watercourse whilst still providing safe working and reinstating the riparian vegetation and natural bed of (where practical) the watercourse, using the material removed when appropriate on completion of the works and compacting as necessary

• Installation of a pollution boom downstream of open cut works

• The use and maintenance of temporary lagoons, tanks, bunds, silt fences or silt screens as required

• Have spill kits and straw bales readily available at all crossing points for downstream emergency use in the event of a pollution incident

• The use of all static plant such as pumps in appropriately sized spill trays

• Prevent refuelling of any plant or vehicle within 15 m of any watercourse

• Prevent storing of soil stockpiles within 15 m of any watercourse or drain where practicable

• Inspect all plant prior to work adjacent to watercourses for leaks of fuel or hydraulic fluids.

15.10 "Commitment" W14 provides: (Emphasis added)

Once the Project has been constructed, the working areas will be removed. Any stripped topsoil will be reinstated, and the site will be returned to its former use, subject to any planting restrictions or agreements with landowners. Temporary bridges and culverts (associated with the construction haul roads) will only be retained by exception e.g. if the new temporary structure has replaced an existing one in poor repair. When these locations are confirmed, crossings would be designed to reflect their permanence e.g. culvert sizing to accommodate climate change allowance. Replacement drainage schemes will be installed where appropriate. A specialised drainage contractor(s) will review the drainage designs and the relevant LLFA will be consulted on proposals (where it is not simply a replacement of the existing drainage run). The specialist contractor(s) will provide advice to National Grid and the Main Works Contractor(s) during all relevant construction and reinstatement activities.

Permanent records of the land drainage locations will be made and passed to the landowners/occupiers.

15.11 The Table then provides in relation to the above: (Emphasis added)

Compliance Date and Details

To be confirmed by the Main Works Contractor(s) if Project is consented.

15.12 It can be seen that the "Commitments" are not clearly stated to be hard edged constraints but are conditional upon, for example, works "qualifying" or reinstatement "where practicable".

15.13 Nor has the Main Contractor been appointed by any of:

15.13.1 National Grid Electricity Transmission PLC;

15.13.2 UK Power Networks Holdings Limited; or

15.13.3 Eastern Power Networks PLC;

In order that each of them, or the Examining Authority, or the Secretary of State can be in a position as at today (19th December 2025) to know whether or not such a Main Contractor would have as its objective the protection and maintenance of the surface and ground water environment.

15.14 As has been stated above, Regulation 4 provides: (Emphasis added)

1) This regulation applies to—

a) applications for an order granting development consent for EIA development received by the Secretary of State; and

b) subsequent applications for EIA development received by a relevant authority.

2) Where this regulation applies, the Secretary of State or relevant authority (as the case may be) must not (in the case of the Secretary of State) make an order granting development consent or (in the case of the relevant authority) grant subsequent consent unless an EIA has been carried out in respect of that application.

15.15 Regulation 5 provides: (Emphasis added)

1) The environmental impact assessment ("the EIA") is a process consisting of—

a) the preparation of an environmental statement or updated environmental statement, as appropriate, by the applicant;

b) the carrying out of any consultation, publication and notification as required under these Regulations or, as necessary, any other enactment in respect of EIA development; …

2) The EIA must identify, describe and assess in an appropriate manner, in light of each individual case, the direct and indirect significant effects of the proposed development on the following factors—

…

c) land, soil, water, air and climate;

…

d) the interaction between the factors referred to in sub-paragraphs (a) to (d).

3) The effects referred to in paragraph (2) on the factors set out in that paragraph must include the operational effects of the proposed development, where the proposed development will have operational effects. …

a) …

b) The Secretary of State or relevant authority, as the case may be, must ensure that they have, or have access as necessary to, sufficient expertise to examine the environmental statement or updated environmental statement, as appropriate.

15.16 As has been stated above, and as was held in the *Smith* case: (Emphasis added)

33. In my view it is a further important principle that when consideration is being given to the impact on the environment in the context of a planning decision, it is permissible for the decision maker to contemplate the likely decisions that others will take in relation to details where those others have the interests of the environment as one of their objectives. The decision maker is not however entitled to leave the assessment of likely impact to a future occasion simply because he contemplates that the future decision maker will act competently. Constraints must be placed on the planning permission within which future details can be worked out, and ***the decision maker must form a view about the likely details and their impact on the environment****.*

15.17 In this DCO Application: the Main Contractor remains not yet contracted by National Grid Electricity Transmission PLC nor by UK Power Networks

Holdings Limited nor by Eastern Power Networks PLC; the terms of the provisions relating to land drainage and water resources on the Farm Area are inchoate and conditional; there is no evidence before the Secretary of State of what the Main Contractor may or may not do, nor whether the particular Main Contractor would have soil objectives as one of his environmental objectives; nor is there any binding contract to ensure that the Main Contractor would execute the Project in respect of soil and access matters within clearly defined "constraints" ensuring the Main Contractor operates inside of those Constraints; and so it is impossible to know today in late 2025/early 2026 what would be the impact on the water environment of the Farm as a result of the project.

15.18 It follows that Regulation currently prohibits a grant of development consent for the proposed draft DCO because of the likely significant resulting effect on the land drainage and water resources of the Farm Area consequent on the Works sought to be authorised by the three parties:

15.18.1 National Grid Electricity Transmission PLC;

15.18.2 UK Power Networks Holdings Limited; and

15.18.3 Eastern Power Networks PLC.

SECTION 7 – THE TAKING OF HIS LAND AGAINST THE CITIZEN'S WILL

(A) This Section addresses the provisions and interaction of sections 120, 122 and 127 of the Planning Act 2008. In particular, section 120 is expressly subject to section 122 and NPS EN-1 makes the urgent need (by whatsoever date) for electricity infrastructure expressly "subject to legal requirements".

(B) In this DCO Application, the combination of:

a) the open end merely "illustrative" timescale for completion of the envisaged NSIP and development associated with it on land on which seasonal crops are grown;

b) the unlimited power sought to develop across *any part* of the red outlined area of our Client's Farm Area shown coloured green on **Plan A** to an *unlimited* depth;

c) the *maximisation* of the *Rochdale* Envelope for purposes including commercial value engineering in the face of Parliament's designated

NPS EN-1 objective to "*minimise*" agricultural land take (and not commercially maximise agricultural land take);

d) the absence of any clear constraints requiring reinstatement of the whole of that Area to assured Grade 2 agricultural land (save for a small number of pylon foundations);

e) the absence of an identified body with soil expertise and the designated NPS EN-1 objective to so restore that quality of Grade;

together evidences:

f) a "reasonable doubt" (as in, evidenced fact and not a subjective *Wednesbury* opinion) as to the actual extent and period of use of land purportedly and asserted as "required" by National Grid to take from our Client against their will; and

g) an absence of the public interest "decisively so demand[ing]" confirmation of the Draft DCO.

In line with *Prest*, that actual reasonable doubt is required at common law to be "resolved in favour of" our Client to exclude their 127 Plots from the face of the draft DCO Order and the Book of Reference.

(C) The seeking by National Grid in its Draft DCO of powers of compulsory purchase of our Client's land inside of the red outlined area is evidenced to be a "first resort" contrary to Parliament's designated NPS EN-1, paragraph 2.6.3 that provides "protection" in the national public interest to citizens by requiring that (here) National Grid seek (as in the application for) such powers only as a "last resort". That designated protective requirement for seeking and use of such powers exclusively as a "last resort" is supported at common law due to the "draconian" nature of powers of compulsory purchase. The objective evidence shows National Grid to have created an apparition of "last resort" that, in reality, can never have been such resort. This is because, on the 12th December 2025, for the very first time, National Grid's land agents disclosed to our Client that the absence of a development agreement between National Grid, UKPN, BT and other third parties, precluded National Grid from agreeing - *before* the DCO Application was made on the 29th August 2025 and to date of 18th December 2025 - voluntary terms for the use of our Client's land for the envisaged development. In line with the common law, the 127 Plots of our

Client's land desired to be taken against their will are required to be excluded from the face of the draft DCO Order and the Book of Reference.

(D) National Grid cannot demonstrate our Client's land "is required" for the development or to facilitate it or is incidental to that, nor that there is a compelling case in the public interest for taking our Client's land outlined in red on the DCO Plans. Instead, the evidence shows there to be a reasonable doubt in respect of numerous facts and the common law requires that doubt to be resolved in favour of our Client with the result that the 127 Plots of their land must be excluded in the national public interest from the Book of Reference.

(E) Nor can it be said that our Client's land is being sought to be acquired compulsorily as a "last resort" because, in fact, it is evidence that NGET (and "UKPN") are seeking to take our Client's land as a "first resort" and in clear breach of Parliament's protective provision in its designated NPS EN-1, paragraph 2.6.3. The 127 Plots of our Client's Farm with must be excluded in the national public interest from the Book of Reference and from the scope of the draft DCO.

16. THE SCOPE OF SECTION 120 OF THE PLANNING ACT 2008

16.1 See **Section 9** for the correct construction of statutes in circumstances of compulsory acquisition. In particular, in the *Sainsburys'* case, the Supreme Court held in the compulsory purchase law sphere: (Emphasis added)

11 Recently, in the High Court of Australia, French CJ said in R & R Fazzolari Pty Ltd v Parramatta City Council [2009] HCA 12, paras 40, 42, 43:

"40. Private property rights, although subject to compulsory acquisition by statute, have long been hedged about by the common law with protections. These protections are not absolute but take the form of interpretative approaches where statutes are said to affect such rights."

"42. The attribution by Blackstone, of caution to the legislature in exercising its power over private property, is reflected in what has been called a presumption, in the interpretation of statutes, against an intention to interfere with vested property rights . . .

"43. The terminology of "presumption" is linked to that of "legislative Intention". As a practical matter it means that, where a statute is capable of more than

one construction, that construction will be chosen which interferes least with private property rights.

16.2 In *Chilton*, the Court of Appeal held in the compulsory purchase law sphere:

[C]hoosing between the two alternative approaches to this legislation, and I hope fairly recognising the lacuna which exists for practical purposes in the day-to-day carrying out of these exercises, I adopt the construction which is favourable to the owner and occupier of the land, because these sections, although incidentally dealing with calculation of compensation and interest, were primarily enacted for the protection of such a person.

16.3 In *Prest*, the Court of Appeal held in the compulsory purchase law sphere:

I regard it as a principle of our constitutional law that no citizen is to be deprived of his land by any public authority against his will, unless it is expressly authorised by Parliament and the public interest decisively so demands: and then only on the condition that proper compensation is paid, see Attorney-General v. De Keyser's Royal Hotel Ltd. (1920) A.C. 508 . If there is any reasonable doubt on the matter, the balance must be resolved in favour of the citizen.

16.4 By section 114 of the Planning Act 2008:

1) When the Secretary of State has decided an application for an order granting development consent, the Secretary of State must either—

a) make an order granting development consent, or

b) refuse development consent.

16.5 In this matter, the scope of the development for which consent may be granted has been referred to above. Whilst the section 14(1)(b) electric line above ground for transmission and the development associated with that is inside the scope of section 14(1)(b) and 115(2)(a), in the ongoing absence of the exclusion of the existing Class B land rights, the development currently permitted by Class B of Part 15 to Schedule 2 of the General Permitted Development Order 2015/596 "for" the development of "distribution lines" and related constructional activity by UKPN cannot be. This is because the subsistence of that current authorisation supplies the actual purpose of the UKPN development over our Client's land.

16.6 By section 120:

1) An order granting development consent may —

a) apply, modify or exclude a statutory provision which relates to any matter for which provision may be made in the order;

b) make such amendments, repeals or revocations of statutory provisions of local application as appear to the Secretary of State to be necessary or expedient in consequence of a provision of the order or in connection with the order;

c) include any provision that appears to the Secretary of State to be necessary or expedient for giving full effect to any other provision of the order;

d) include incidental, consequential, supplementary, transitional or transitory provisions and savings.

2) In subsection (5) "statutory provision" means a provision of an Act or of an instrument made under an Act.

7) Subsections (3) to (6) are subject to subsection (8) and the following provisions of this Chapter…

16.7 The Draft DCO Requirements include as follows.

16.8 By Article 5:

5.— (1) Subject to paragraph (4), in respect of the overhead electric line and underground electric line works forming part of the authorised development for which it is granted development consent by paragraph (1) of article 3 (development consent etc. granted by the Order), the undertaker may—

(a) deviate from the lines or situations shown on the works plans within the limits of deviation relating to a Work shown on those plans and carry out construction activities for the purpose of the authorised development anywhere within the Order limits; and

(b) in respect of the pylons deviate vertically as set out in the table of parameters—

(i) to any extent upwards not exceeding 6 metres save in respect of pylons TB140 to TB142 (inclusive) and TB238 to TB243 (inclusive) which may deviate vertically to any extent upwards not exceeding 18 metres;

(ii) to such extent downwards as the undertaker considers necessary or convenient; …

3) Subject to paragraph (4), in respect of permanent above ground structures, erections and apparatus forming part of the authorised development, including substations, converter stations and cable sealing end compounds, other than the overhead electric line and underground electric line to which paragraph (1) refers—

(a) the authorised development is to be carried out within any applicable non-linear limits of deviation shown on the works plans; and

(b) the undertaker may deviate to any extent upwards not exceeding 10% above the maximum height shown on the table of parameters and to such extent downwards as the undertaker considers necessary or convenient.

16.9 The downward extent of the development is at the "convenience" of National Grid and is evidently not known (as the draft DCO evidences that no downward parameter can be supplied today) and so there is evidently a reasonable doubt at this point in time in respect of the actual extent downwards of the development into the private soil of our Client's Farm Area, as outlined in red on the Works Plans.

16.10 By Requirement 10: (Emphases added)

10. Reinstatement schemes

*(1) Subject to sub-paragraphs (2) and (3), any land within the Order limits which is used temporarily for construction is to be reinstated to a condition **suitable** for its former use, or such condition as the relevant planning authority may approve, within 21 months of completion of the construction of the stage of authorised development for which it was required, or such further time as may be approved by the relevant planning authority.*

*(2) The requirement to reinstate the land to a condition suitable for its former use does **not** apply to land above or within 10 metres of underground cables installed as part of the authorised development.*

(3) The requirement to reinstate the land to a condition suitable for its former use is subject to the provisions of article 27 (temporary use of land by National Grid), article 28 (temporary use of land by UKPN) and article 29 (temporary use of land for maintaining the authorised development).

16.11 By Article 27:

5) *Before giving up possession of land of which only temporary possession has been taken under paragraph (1)(a)(i), unless otherwise agreed with the owners of the land, National Grid must remove all temporary works and restore the land to the reasonable satisfaction of the owners of the land, but National Grid is **not** required to—*

(a) …;

*(b) restore the land on which **any** works or mitigation works have been carried out under paragraph (1)(d); …*

(d) remove any permanent work including pylons, electric lines, underground electric line, or other permanent services, constructed or installed on, over, under or in that land as part of the authorised development…

16.12 By Article 28:

5) *Before giving up possession of land of which temporary possession has been taken under paragraph (1)(a)(i), unless otherwise agreed with the owners of the land UKPN must remove all temporary works and restore the land to the reasonable satisfaction of the owners of the land, but UKPN is **not** required to—*

(a) replace a building, structure, electric line, electrical plant or pylon removed under this article;

*(b) restore the land on which **any** works or mitigation have been carried out under paragraph (1)(d);*

(c) remove any foundations below 1.2 metres which had been placed in that land to support pylons and electric lines constructed upon those foundations; or

(d) remove any pylons or electric lines or underground cables constructed or installed on, over, under or in that land as part of the UKPN Works.

16.13 The draft DCO provisions include Requirements that are open ended and supply to clear constraints for downward extent into the actual soil of the land of our Client nor a clear requirement ensuring the reinstatement of our Client's land by soil of Grade 2 quality (save for the pylon foundations).

16.14 "Temporary" is merely less than "permanent" and is an open-ended term. There is no time constraint requiring completion of the development nor evidence of a particular timescale. At best, National Grid can today only provide an "illustrative" timescale and have not supplied any development agreement nor other evidence of a contract being let with an assured end date for the development. The absence of that evidence before the Examining Authority engenders a reasonable doubt as to the completion date of the development in relation to our Client's seasonal farming land use.

16.15 The further provisions of this Chapter include as follows.

17. SECTION 122 AND THREATENED COMPULSORY PURCHASE

17.1 The presumption in NPS EN-1 in favour of granting the development consent for a section 14(1)(b) NSIP cannot operate in relation to sections 122 nor 127 of that Act. This is because: a) by paragraph 3.3.63 of NPS EN-1, Parliament has ensured that the "the urgent need for CNP Infrastructure to achieving our energy objectives, together with the national security, economic, commercial, and net zero benefits" remains expressly "Subject to any legal requirements"; b) paragraph 4.1.3 of that NPS provides: "Given the level and urgency of need for infrastructure of the types covered by the energy NPSs set out in Part 3 of this NPS, the Secretary of State will start with a presumption in favour of granting consent to applications for energy NSIPs."; c) paragraph 4.1.4 of that NPS provides: "The presumption is also subject to the provisions of the Planning Act 2008 referred to at paragraph 1.1.4 of this NPS."; d) NPS EN-5 provides in paragraph 1.3.2: "This NPS does not seek to repeat the material set out in EN-1 or EN-3. EN-1 applies to all applications covered by this NPS unless stated otherwise"; e) section 120(7) makes section 120(3) to (6) expressly "subject to" sections 122 (and 127); and f) section 122 includes two mandatory requirements to be satisfied *before* compulsory acquisition powers may be granted.

17.2 The two requirements of section 122 are that:

1) An order granting development consent may include provision authorising the compulsory acquisition of land only if the Secretary of State is satisfied that the conditions in subsections (2) and (3) are met.

2) The condition is that the land—

a) is required for the development to which the development consent relates,

b) is required to facilitate or is incidental to that development, …

3) The condition is that there is a compelling case in the public interest for the land to be acquired compulsorily.

17.3 For the reasons set out in our Client's Relevant Representations, herein these Appendices, and as may be amended or added to during the period of the Examination Hearing (and as may be subsequently), on the basis of the current evidence (including the evidence of its terms of its Draft DC) , National Grid cannot show that the extent and depth of the land of our Client is in fact required for "the development"; nor that it is required to facilitate or is incidental to that development; nor that there can be or is a compelling case in the public interest for the 127 Plots of the land of our Client to be acquired compulsorily.

17.4 See (again) **Section 9** for the correct construction of statutes in circumstances of compulsory acquisition, and the particular requirements of:

a) The Supreme Court in the *Sainsburys'* case as to the requirement to adopt the construction that favour the person subject to threatened compulsory acquisition;

b) The Court of Appeal in the *Chilton* case in respect of "protections" of the person subject to threatened compulsory acquisition "primarily enacted <u>for the protection</u> of such a person" in respect of "necessary, but nevertheless, draconian… powers of the acquiring authority to dispossess him of his title and occupation of his land".

17.5 By section 122 of the Planning Act 2008: (Emphases added)

1) An order granting development consent may include provision authorising the compulsory acquisition of land only if the Secretary of State is satisfied that the conditions in subsections (2) and (3) are met.

2) The condition is that the land—

a) is required for the development to which the development consent relates,

b) is required to facilitate or is incidental to that development, or

c) …

*3) The condition is that there is a **compelling** case **in the public interest** for the land to be acquired compulsorily.*

17.6 The NPS EN-1 has been "designated" in November 2023 (updated in January 2024) for the purposes of the Planning Act 2008. Section 104(3) of the Planning Act 2008 requires "the Secretary of State" to "decide the application in accordance with any relevant national policy statement, except to the extent that one or more of subsections (4) to (8) applies". NPS EN-1 is inside the scope of section 104(3) and engenders a "protection" under paragraph 2.6.3 that remains designated by Parliament under section 5(2) of that Act in favour of our Client as a person threatened with compulsory acquisition of his land: (Emphasis added)

As a last resort, where it does not succeed in reaching the agreement that it requires, the network company may, as part of its application to the Secretary of State, seek to acquire rights compulsorily over the land in question by means of a provision in the DCO.

17.7 By this protective measure Parliament has ensured in the countervailing national public interest that the network company (here National Grid) cannot seek (by making an application for development consent on the 29th August 2025) to acquire rights compulsorily unless and until the network company can show that before its application (on the 28th August 2025) the seeking of those acquisition powers was then a "last resort". National Grid cannot turn back chronological time.

17.8 Regrettably, National Grid is seeking to take the land of our Client against their will as a "first resort" in breach of Parliament's protection for our Client.

17.9 Having designated in the national interest the protection of private land from being taken – howsoever great the national interest in the development may

be – as sequentially prior to the making of an application for development consent, Parliament has ensured in that national interest that the protection of a person's private property remains expressly paramount over and above the ability of National Grid to make an application for development consent by which to authorise its project and execute it by taking private land. Parliament's protection subsists today during the Examination of the DCO Application.

17.10 This is because, as NPS EN-1 states: (Emphasis added)

2.6 Land Rights and Land Interests

2.6.1 In order to be lawfully able to install, inspect, maintain, repair, adjust, alter, replace or remove an electricity line (above or below ground), its related equipment (such as monopoles, pylons/transmission towers, transformers and cables), and/or its associated mitigation or enhancement schemes, applicants must:

i. own the land on, over, or under which the relevant activity is to take place; or

ii. hold sufficient rights over or interests in that land (typically in the form of an easement); or

iii. have permission for the activity from the present owner or occupier of that land (typically in the form of a wayleave)[footnote 11].

2.6.2 Where the applicant does not own or wish to own the land in question, it should try to reach a voluntary agreement giving it sufficient rights and/or permissions to undertake the relevant work[footnote 12].

2.6.3 As a last resort, where it does not succeed in reaching the agreement that it requires, the network company may, as part of its application to the Secretary of State, seek to acquire rights compulsorily over the land in question by means of a provision in the DCO.

2.6.4 In such cases (i.e. where the compulsory acquisition of rights is sought) permanent arrangements are strongly preferred over voluntary wayleaves (which could, for example, be terminable on notice by the landowner) in virtue of their greater reliability and economic efficiency and reflecting the importance of the relevant infrastructure to the nation's net zero goals.

2.6.5 The applicant may also seek the compulsory acquisition of land. This will not normally be necessary where lines and cables are installed but may be sought where other forms of electricity networks infrastructure (such as new substations) are required…

17.11 In the *Saravanamathu* case, the High Court held: (Emphasis added)

156. It is important to have well in mind why these considerations are relevant to the decision whether to confirm a compulsory purchase order. The acquiring authority is expected to advance a compelling case in the public interest for confirmation of the order. Compulsory purchase is intended as a last resort. Unless the acquiring authority has engaged in meaningful negotiations with landowners and rights owners whose property is needed to achieve the purposes for which the order is made, it will not be possible (at least in the majority of cases) for the confirming authority to determine whether resort to compulsory acquisition might have been avoided. In the absence of evidence of reasonable efforts to acquire the requisite land and rights by agreement, it is unlikely to be open to the confirming authority safely to conclude that a compelling case for compulsory acquisition has been established.

157. However, what is required in order to demonstrate that the acquiring authority has at least attempted to engage in and take forward such meaningful negotiations, and has made reasonable efforts to acquire the land and rights required for the scheme by agreement, will vary from case to case. Moreover, the judgment whether the action taken by the acquiring authority fulfils those policy requirements is primarily for the confirming authority, in this case the inspector, subject only to statutory review by this court on Wednesbury principles.

158. It is vital also to have well in mind that the policy of the CPO Guidance is to require the acquiring authority to attempt and take forward meaningful negotiations and make reasonable efforts to acquire by agreement. It is not to insist on those negotiations and efforts achieve a successful outcome. Ex hypothesi, there will be cases in which the acquiring authority will need to resort to compulsory purchase because the parties have failed to reach an agreement for sale or possession of the requisite land or rights which is mutually acceptable, despite the meaningful and reasonable efforts of the acquiring authority to secure such an agreement…

17.12 In his recent *Nicholson CPO* decision (3rd January 2023), experienced Planning Inspector Felgate on behalf of the Secretary of State for Levelling Up, Housing and Communities properly refused to confirm a necessary town centre regeneration scheme because:

246. For the reasons set out above, I am satisfied that the redevelopment of the Order Lands, in accordance with the planning permission for the Nicholson Quarter mixed-use scheme, would accord with the BLP's policy framework for the area, and would bring significant benefits for the social, economic and environmental well-being of the town. I have found no reason to doubt that the development is financially viable, and free from impediments, and that the necessary resources are available; as such, I accept that the scheme would have a good prospect of proceeding.

247. However, I have found that the compulsory acquisition of the lease for Smokeys Nightclub would be likely to result in the club's closure, contrary to the wishes of its owners, Lee and Dean Page…

248. This position could potentially have been avoided, had there been a proper degree of constructive engagement on the part of the acquiring authority and its partners, and a genuine willingness to explore options for the club's relocation; including all options within the proposed scheme itself that might have been able to meet the club's reasonable requirements. The failure to pursue meaningful negotiations with the Page family means that, with regard to their particular interest, it does not appear that compulsory purchase is being proposed only as a last resort.

249. As a result, despite the proposed development's acknowledged public benefits, it has not been demonstrated that those benefits could not equally be gained without the likely need for Smokeys to close, and without the consequential adverse impacts for both the objectors and the town. In these circumstances, the interference with Lee and Dean Page's human rights would be disproportionate.

250. With regard to the other remaining objections to the CPO, I have found no others that carry sufficient weight as to justify refusing to confirm the proposed Order. But nevertheless, the objection by Lee and Dean Page carries enough weight on its own for me to conclude that in this case this must be the right and necessary outcome.

251. I fully accept that the benefits of the Nicholson Quarter scheme can only be achieved on this particular site, and that they can only be realised through a fully comprehensive development. There is no realistic prospect of any alternative scheme that would allow Smokeys Nightclub to remain in situ. And I am not in any doubt that any obstacle to the delivery of the present scheme would represent a significant setback to Maidenhead's regeneration. But these considerations do not outweigh my findings that the effects of the present Order on the objectors Lee and Dean Page would be disproportionate; and that the Order has not been shown to be a last resort.

252. I conclude that it has not been demonstrated that the confirmation of the Order is justified by a compelling case in the public interest.

17.13 It can be seen from paragraphs 250-251 of Nicholson CPO Decision that the use of CPO is a draconian remedy that can be lawfully authorised only as a "last resort" and cannot be authorised as a "first resort". The requirement that authorisation of CPO powers be demonstrably a "last resort" is a matter of public interest for the Secretary of State for Levelling Up, Housing and Communities. Further, the "last resort" trigger is of such importance in itself that the absence of that "last resort" (in respect of a single objector) being demonstrated the developer required that Secretary of State to refuse a much needed and ready regeneration scheme.

17.14 In like manner of importance in respect of the development of "nationally significant infrastructure projects", Parliament has designated NPS EN-1 under section 5(2) of the Planning Act 2008 and by which Parliament has endorsed in the countervailing national interest that: (Emphasis added)

> 2.6.3 *As a last resort, where it does not succeed in reaching the agreement that it requires, the network company may, as part of its application to the Secretary of State, seek to acquire rights compulsorily over the land in question by means of a provision in the DCO.*

17.15 Therefore, National Grid cannot seek by inclusion in its DCO Application dated 28th August 2025 and submitted on the 29th August 2025 provisions for compulsory acquisition before it had by 28th August 2025 positively demonstrated to *itself* that their inclusion was a "last resort" and seeking acquisition powers was an actual "last resort".

17.16 It is clear that National Grid breached, and breaches, paragraph 2.6.3 as follows.

17.17 In Document **APP-056**, the draft DCO includes in Part 5, Article 24:

1) National Grid may acquire compulsorily so much of the Order land described in the book of reference as is required for the construction, operation and maintenance of the authorised development (including the UKPN Works) or is incidental to it or required to facilitate it.

2) UKPN may acquire compulsorily so much of the Order land described in the book of reference as is required for the construction, operation and maintenance of the UKPN Works only.

17.18 It is clear from the foregoing that the UKPN "works" cannot be "associated development" and cannot qualify as associated with the nationally significant infrastructure project of transmission lines.

17.19 Document **APP-059**, Statement of Reasons by National Grid, asserts in paragraph: (Emphasis added)

3.4.3 The Project as proposed has been identified as a critical national priority that must facilitate new connections by the end of 2030. As such and as set out in NPS EN-1 Paragraphs 4.3.22 and 4.3.23, any alternative to the Project would have to demonstrate it could support the delivery of the connections within the 2030 programme. <u>There is a need for the Project to be delivered at pace to achieve the Clean Power 2030 target</u> for the benefits to be realised…

7.4.8 As stated in Chapter 5 of this document, it is the preference of National Grid that all land and rights can be acquired through negotiation and agreement.

7.4.9 Compulsory acquisition powers will only be exercised where it appears that negotiations are <u>unlikely</u> to be completed or <u>to be completed in time</u>. However, without the powers of acquisition being compulsory, <u>there is a risk</u> that the urgent national need for the Project <u>could not be met</u> because the land and rights required in the Order land may not be capable of being assembled.

17.20 The reference to the "Clean Power 2030 target" is to ensure Energisation of the DCO Development "by 2030". But see above where the designated NPS-EN-1 and EN-5 make no express mention of "by 2030" and expressly only state "by 2035".

17.21 Contrary to paragraph 7.4.9, the NPS EN-1 is clear: "*As a last resort, where it does not succeed in reaching the agreement that it requires"*. "Time" for an agreement is an irrelevant factor.

17.22 National Grid has introduced an unlawful test of "time" as asserted justification for seeking CPO powers as a first resort and jumping the gun in the clear and express face of EN-1, paragraph 7.6.3: "last resort".

17.23 Document **APP-061**, Statement of Reasons - Appendix B - Schedule of Negotiations, purports to demonstrate that National Grid has *evidenced* that its inclusion of proposed powers of compulsory acquisition by National Grid in its draft DCO in its DCO Application (made on the 28th August 2025) is as a "last resort". By the inclusion of that document, National Grid evidences that it:

a) is required to show and to prove (it bearing the onus of proof also in compulsory purchase matters) that it has only *sought* CPO provisions in its DCO Application of 28th August 2025 *because* (in line with EN-5, paragraph 2.6.3);

b) it requires land interests; and

c) needs to show the inclusion of the proposed CPO powers as a "last resort".

17.24 However:

a) National Grid cannot show that the inclusion of the proposed CPO powers is a "last resort";

b) UKPN cannot show that the inclusion of the proposed CPO powers is a "last resort".

17.25 Further and more sworn and detailed evidence of the Client demonstrates that the generalized evidence in the "Schedule of Negotiations", and the generality of the (so-called) "Heads of Terms", to operate in reverse so as to show that National Grid has conducted in truth a "charade" of (so-called) "negotiations".

17.26 Furthermore, that sworn evidence of our Client and their advisors shows that on the 12th December 2025, National Grid's land agent revealed for the first time that the then subsisting absence of a development agreement between

National Grid with UKPN, BT and third parties precluded National Grid itself from agreeing with our Client any terms of use of our Client's land for the development. That fact evidences: a) the prior 'discussions' had between National Grid and our Client can only have been meaningless and a charade because National Grid failed to disclose that fact to our Client before 12th December 2025; and b) National Grid cannot itself yet know the extent or time period of the development's completion because of the absence of a development agreement ensuring the scope, basis of authorisation under the Order 2015/596 or the Planning Act 2008, or the timing of the same.

17.27 Helpfully, the Secretary of State has produced Planning Act 2008: guidance related to procedures for the compulsory acquisition of land (April 2013). This is not an NPS and so cannot override Parliament's designated protective measure in NPS EN-1, paragraph 2.6.3 of "last resort". Instead, that Guidance recognises that compulsory powers may not always be included in a development consent order, nor be included for all of the land of the development. In this respect:

7. Applicants must therefore be prepared to justify their proposals for the compulsory acquisition of any land to the satisfaction of the Secretary of State…

8. The applicant should be able to demonstrate to the satisfaction of the Secretary of State that all reasonable alternatives to compulsory acquisition (including modifications to the scheme) have been explored. The applicant will also need to demonstrate that the proposed interference with the rights of those with an interest in the land is for a legitimate purpose, and that it is necessary and proportionate…

14. In determining where the balance of public interest lies, the Secretary of State will weigh up the public benefits that a scheme will bring against any private loss to those affected by compulsory acquisition.

15. In practice, there is likely to be some overlap between the factors that the Secretary of State must have regard to when considering whether to grant development consent, and the factors that must be taken into account when considering whether to authorise any proposed compulsory acquisition of land.

16. There may be circumstances where the Secretary of State could reasonably justify granting development consent for a project, but decide against including in an order the provisions authorising the compulsory

acquisition of the land… [T]he Secretary of State may consider that the scheme itself should be modified in a way that affects the requirement for land which would otherwise be subject to compulsory acquisition. Such scenarios could lead to a decision to remove all or some of the proposed compulsory acquisition provisions from a development consent order.

17.28 It follows that:

a) in the sphere of the Planning Act 2008, where CPO powers are sought, Parliament has ensured by means of EN-1, paragraph 2.6.3, that CPO powers only be sought (from 28th August 2025) as the "last resort". Consequently, as in *Nicholson CPO* Decision, and applying *Prest*, since EN-1 is a section 5(2) NPS, non-compliance with that paragraph (as affirmed at common law by *Prest*) must result to preclude in law the authorisation by the Secretary of State of CPO powers including in relation to our Client's land in this DCO Application;

b) both National Grid and/or UKPN are in breach of the NPS EN-5 paragraph 7.6.3 requirement in the designated national guidance for the purposes of the Planning Act 2008 to not seek CPO powers until they are "last resort";

c) neither National Grid nor UKPN can satisfy the requirement of section 120(3) of the Planning Act 2008, so as to have been in a position of fact to have been able to lawfully know or properly direct themselves as at 27th August 2025 that the inclusion in the draft DCO of CPO powers in its DCO Application, was or was not a "last resort" as required by paragraph 7.6.3 of EN-5;

d) the inclusion on and from the 28th August 2025 by National Grid of proposed CPO powers in its DCO Application evidences that National Grid acted ultra vires the requirement of law and in breach of a requirement of fact (under paragraph 2.6.3 of Parliament's NPS EN-5) in seeking CPO powers as a "first resort";

e) the *inclusion* of CPO powers on the 28th August 2025 by National Grid in its DCO Application of that date was and remains unlawful in being based

on Government Policy known as “Action Plan Clean Power 2030” that aims to ensure completion of the DCO Application development “by 2030” notwithstanding that that *Government Policy* can only be lawfully categorised as section 5(5) Planning Act 2008 matter and cannot be elevated above the date of “by 2035” endorsed by Parliament in the “designated” NPS EN-1 and EN-5;

f) National Grid has unlawfully *accelerated* the “urgent need” for the DCO Application development to be completed by the undesignated, notional and proxy deadline of “by 2030” instead of providing for that by the “2035” date designated by the NPS (and Parliament) for the purposes of the Planning Act 2008, and by its acceleration has truncated the period of time in which to actually start and actually undertake meaningful negotiations with our Client, and after execution of a development agreement by National Grid with UKPN, BT and third parties;

g) the seeking of CPO powers in its Draft DCO by National Grid is actually chronologically premature to the protective provision of “last resort” in the national public interest guaranteed by NPS EN-1, paragraph 2.6.3 by which our Client’s private land is safeguarded from the proposed draconian measure. The Secretary of State is not entitled to bypass Parliament’s designated protective provision by authorizing as first resort the inclusion of acquisition powers in relation to our Client’s land;

h) Alternatively, if (which is not accepted), National Grid has ‘lawfully’ accelerated completion of its DCO Application development, then that asserted acceleration operates in reverse to require that, from the date when the Action Plan Clean Power 2023 was first published in December 2024, National Grid must already:

i) have commenced meaningful negotiations including with the Client;
ii) have developed its DCO Application development to a sufficient level of detail to allow:
    1) National Grid to itself lawfully knows the detailed content of its own development by which to enable National Grid itself to

lawfully consider whose land interests were envisaged to engender a requirement for National Grid to seek agreed terms by which to enable the relevant part of that development; and

2) National Grid to publish to the relevant third party or parties of that detail to all those whose land interests were envisaged to engender a requirement for National Grid to seek agreed terms by which to enable the relevant part of that development;

and without which detail:

3) National Grid was (and remains as at 16th December 2025) not itself in a position to know what its own development comprised in order to be able to begin negotiations, nor meaningful negotiations;

4) an affected party could not (and remains as at 16th December 2025) unable to consider the actual envisaged impacts of the National Grid proposals;

5) neither National Grid nor any affected party, in particular the Client, could (or as at 16th December 2025) can begin to have negotiations, nor any meaningful negotiations.

But, because National Grid has not to date executed a development agreement with UKPN or BT or any relevant third parties, the absence of that development agreement has precluded to date (howsoever far back in time one goes) National Grid from starting meaningful negotiations with our Client for use of their land for the development, and simultaneously precluding National Grid from knowing the scope of its development and that of those other parties, nor its authorise basis.

i) The inclusion of the CPO provisions, in particular as they relate to the Client's land of Thornbush Farm, identified in Green Colouration

on **Plan A** of the **Appendix ABC Plans** was and remains premature and in breach of:

i) the common law requirement that CPO be used as a "last resort";

ii) the requirement of NPS EN-1, paragraph 2.6.3 "Last resort". In consequence, section 104(3) of the Planning Act 2008, in that:

The Secretary of State must decide the application in accordance with any relevant national policy statement, except to the extent that one or more of subsections (4) to (8) applies.

Because the principle stated in *Prest* requires the determination of any doubt of "fact" to be resolved in favour of our Client, it follows that the authorised inclusion of CPO powers in the DCO would breach that common law requirement, be ultra vires, and because, as in *Prest*, when faced with the alternative "facts", it would be unlawful for the Secretary of State to authorise inclusion of those CPO powers in relation to our Client's land: "no reasonable Secretary of State faced with that fact could" include powers for acquisition as a "first resort" in the circumstances here where National Grid has chosen to seek such powers *based on* (charade) meaningless negotiations.

17.29 There is no evidence at all (to date of 16th December 2025, and from the 28th August 2025) of UKPN being able to or beginning to commence meaningful negotiations with our Client in relation to the land it desires to use nor such of its Land that UKPN seeks authorisation of CPO powers in relation to and by which to execute in the Works asserted (as "associated development") to be those of and to relate to UKPN.

17.30 No contact has been made to date by UKPN with our Client in respect of the desire use of our Client's land for UKPN development. The absence of that contact evidences that UKPN cannot demonstrate the use of CPO powers can be a "last resort" in respect of the associated development for the purposes of its "distribution" cables and their construction and installation. And nor can National Grid evidence the use of acquisition powers over the extent of our Client's land apparently for UKPN works as a "last resort" because National Grid has expressly confined its discussions with our Client to only the land desired by National Grid for its development and expressly excluded consideration of UKPN as a matter between UKPN and our Client. It follows

that NPS EN-1, paragraph 2.6.3 protects our Client's land from being taken in relation to such of that land that relates to UKPN development.

17.31 In **Appendix 7** are the evidence and Exhibits of:

a) Stephen Baker **Appendix 7-1**;

b) William Barton **Appendix 7-2**;

c) Oliver North **Appendix 7-3;**

d) Anita Kasseean **Appendix 7-4**.

17.32 The evidence of the Client positively *evidences* and demonstrates the absence of any, or any real negotiations or any meaningful negotiations having been:

a) Commenced by National Grid ("National Grid Electricity Transmission PLC");

b) Commenced by "UKPN" (either UK Power Networks Holdings Limited, or Eastern Power Networks PLC);

In respect of the Client's land of Thornbush Farm shown on **Plan A** by 28th August 2025 or to date of 18th December 2025.

17.33 The authorisation of the CPO provisions of the draft DCO, so far as they relate to the Client's land (and as farther as the Examining Authority may consider on the evidence of National Grid and noting the absence of evidence from UKPN) by logical extension to others whose land interests are within the red outlined area of the DCO development area, is unlawful and are required to be deleted or modified to exclude our Client's land.

18. SECTION 127 & THE STATUTORY UNDERTAKER'S LAND OF UKPN

18.1 See **Section 9** for the correct construction of statutes in circumstances of compulsory acquisition and the particular requirements of:

a) The Supreme Court in the *Sainsburys'* case as to the requirement to adopt the construction that favour the person subject to threatened compulsory acquisition;

b) The Court of Appeal in the *Chilton* case in respect of "protections" of the person subject to threatened compulsory acquisition "primarily enacted for the protection of such a person" in respect of "necessary, but nevertheless, draconian… powers of the acquiring authority to dispossess him of his title and occupation of his land".

18.2 As has been referred to above, in Document **APP-056**, the draft DCO includes in Article 6 a provision for UKPN and, in turn, enables UKPN to rely on the proposed CPO powers sought under Part 5. In particular, Article 24 provides:

1) National Grid may acquire compulsorily so much of the Order land described in the book of reference as is required for the construction, operation and maintenance of the authorised development (including the UKPN Works) or is incidental to it or required to facilitate it.

2) UKPN may acquire compulsorily so much of the Order land described in the book of reference as is required for the construction, operation and maintenance of the UKPN Works only.

18.3 Schedule 1, Works include "associated works" by UKPN described as Works 28 and 29 (and others also) for the purpose of "Distribution" for Routes PHB and PLD that cross our Client's Land.

18.4 However, the inclusion of Article 24(1) and (2) is logically circular in so far as that Article purports to authorise the compulsory acquisition of part of the Land in order to (unlawfully) side-step or (unlawfully) discharge the requirements of section 127 of the Planning Act 2008.

18.5 By section 127 of the Planning Act 2008: (Emphases added)

1) This section applies in relation to land ("statutory undertakers' land") if —

a) the land has been acquired by statutory undertakers for the purposes of their undertaking,

b) a representation has been made about an application for an order granting development consent before the completion of the examination of the application, and the representation has not been withdrawn, and

c) as a result of the representation the Secretary of State is satisfied that—

i) the land is used for the purposes of carrying on the statutory undertakers' undertaking, or

ii) an interest in the land is held for those purposes.

*2) An order granting development consent **may** include provision authorising the compulsory acquisition of statutory undertakers' land **only to the extent** that the Secretary of State is satisfied of the matters set out in subsection (3).*

3) The matters are that the nature and situation of the land are such that—

a) it can be purchased and not replaced without serious detriment to the carrying on of the undertaking, or

*b) if purcha**sed** it can be replaced by other land belonging to, or available for acquisition by, the undertakers without serious detriment to the carrying on of the undertaking.*

4) Subsections (2) and (3) do not apply in a case within subsection (5).

*5) An order granting development consent **may** include provision authorising the compulsory acquisition of a right over statutory undertakers' land by the creation of a new right over land **only to the extent** that the Secretary of State is satisfied of the matters set out in subsection (6).*

6) The matters are that the nature and situation of the land are such that—

a) the right can be purchased without serious detriment to the carrying on of the undertaking, or

*b) any detriment to the carrying on of the undertaking, in consequence of the acquisition of the right, **can be made good by the undertakers by the use of other land belonging to** or **available** for acquisition by them.*

8) In this section—

"statutory undertakers" has the meaning given by section 8 of the Acquisition of Land Act 1981 (c. 67) and also includes the undertakers—

a) which are deemed to be statutory undertakers for the purposes of that Act, by virtue of another enactment;

b) which are statutory undertakers for the purposes of section 16(1) and (2) of that Act (see section 16(3) of that Act).

18.6 On its correct legal construction and interpretation, the following is apparent from section 127.

18.7 Section 127(1) results in meaning that its provisions can only apply in the specified circumstances of that paragraph.

18.8 As must be known to UKPN already, UKPN already has land interests in the Client's Land by which UKPN maintains pylons and cables. Consequently, it is logically circular under Article 24(2) for UKPN to seek to compulsorily acquire its own land interests on the Land as it already owns them.

18.9 Sections 127(2) and (5) provide jurisdiction to the Secretary of State to authorise the inclusion of acquisition of land rights by National Grid and the creation of new land rights (by either National Grid or UKPN) only to the extent certified by the Secretary of State.

18.10 On its correct construction, section 127 cannot authorise simultaneously the compulsory acquisition of land rights and the making of land compulsorily acquired available for the statutory undertaker.

18.11 In law, in the CPO circumstances of this DCO Application and our Client, section 127 operates as a protection in favour of our Client, and is required to be construed in favour of our Client.

18.12 On its proper construction, and as also required to be construed, section 127(3) and (6) can only be satisfied by the availability chronologically and/or sequentially prior to the authorisation under (3) or (6). This is because, for example, on its natural reading, the phrase "*can be made good by the undertakers by the use of other land belonging to or available for acquisition by them" in section 127(6)* chronologically and/or sequentially precedes the subsequent authorisation of the acquisition by the Secretary of State under section 127(5) of the land rights *of the statutory undertaker* (in this case, UKPN) by National Grid.

18.13 As at 16th December 2025, the Secretary of State has no jurisdiction under either section 127(3) or (5) of the Planning Act 2008 to entitle him to authorise the inclusion in the draft DCO of any CPO provisions relating to the land rights of UKPN in relation to our Client's Land for the purposes of the UKPN Works.

SECTION 8 – SECONDARY LEGISLATION – THE DRAFT DEVELOPMENT CONSENT ORDER

(A) The Draft Development Consent Order ("DDCO") is in Document **APP – 056**.

(B) The DDCO *itself* is evidence of *fact* and its terms evidence current *facts*.

(C) The DDCO is in the form of secondary legislation (an "SL") and is proposed to include as follows.

19. THE PROPOSED DEVELOPMENT CONSENT ORDER

19.1 Within Part 1: (Emphasis added)

"authorised development" means the development described in Schedule 1 (authorised development), and any other development authorised by this Order, which is development within the meaning of section 32 of the 2008 Act; …

"electric line" has the meaning set out in section 64(1) (interpretation etc. of Part 1) of the 1989 Act which includes but is not limited to new pylons, foundations and steelwork, conductors, insulators and fittings, fibre optic earth wire conductors, joint boxes, joint pits, joint bays, cables, cable ducts, link pillars and cables;

"electronic transmission" means a communication transmitted— (a) by means of an electronic communications network; or (b) by other means but while in electronic form. [sic]

and in this definition "electronic communications network" has the same meaning as in section 32(1) (meaning of electronic communications networks and services) of the 2003 Act; …

"Openreach" means Openreach Limited (Company Number 10690039);

"operational use" occurs when the relevant part of the authorised development first transmits electricity after the date of its final commissioning:

(a) in respect of the NGET Works, at either 275kV or higher voltages; and

(b) in respect of the UKPN Works, at either 230volts or higher voltages.

"Order land" means the land shown on the land plans and described in the book of reference;

"Order limits" means the limits shown on the works plans within which the authorised development may be carried out; …

"pre-commencement operations" means operations consisting of engineering investigations and surveys, environmental (including archaeological)

investigations and monitoring, surveys and monitoring investigations for the purpose of assessing ground conditions, diversion and laying of services, protection works comprising utilities protection works or fencing and protection slabs, demolition of existing buildings, site clearance, environmental mitigation measures, remediation in respect of any contamination or other adverse ground conditions, set up works associated with the establishment of construction compounds and temporary laydown areas, receipt and erection of construction plant and equipment, temporary accesses, erection of any temporary means of enclosure or temporary demarcation fencing marking out site boundaries and the temporary display of site notices or advertisements; …

"requirements" means the requirements listed in Schedule 3, and any reference to a numbered requirement is to be construed accordingly; …

"temporary construction works" means the temporary construction works described in Schedule 1 (authorised development) to the Order;

"the table of parameters" means the information shown on the sheet labelled as Table of Parameters within the work plans; …

"UKOP" means United Kingdom Oil Pipelines Ltd (registered company number 00746708) and BPA as agent for United Kingdom Oil Pipelines Ltd;

"UKPN" means UK Power Networks Holdings Limited (registered company number 07290590) and/or its affiliate Eastern Power Networks plc (registered company number 02366906);

"UKPN Works" means those works to UKPN assets or equipment forming part of the authorised development, including Work Nos. 25 to 36;

"undertaker"—

(a) in relation to the authorised development, means National Grid; and

(b) in relation to the UKPN Works and subject to paragraph (5) of article 6 (benefit of Order), includes UKPN;

"watercourse" includes all rivers, streams, ditches, drains, canals, cuts, culverts, dykes, sluices, rhynes, sewers and passages through which water flows except a public sewer or drain; and

"works plans" means the plans listed in Part 8 of Schedule 2 (plans) and certified under article 60 (certification of documents), and references to a particular works plan are to be construed accordingly.

19.2 Within Part 2: (Emphasis added)

PART 2

PRINCIPAL POWERS

Development consent etc. granted by the Order

3.—(1) Subject to the provisions of this Order (including the Requirements) National Grid is granted development consent for the authorised development set out in Schedule 1 (authorised development).

(2) National Grid may— (a) install and keep installed the authorised development; (b) remove or replace any electric line including pylons or poles that may require removal as part of the authorised development.

(3) UKPN may— (a) Subject to paragraphs (3), (4) and (5) of article 6 (benefit of Order) carry out the UKPN Works; and (b) remove or replace any electric line including pylons or poles that may require removal in relation to the UKPN Works.

(4) National Grid may operate and use the authorised development (excluding the UKPN Works) as part of the high-voltage electricity transmission system in England and Wales.

(5) UKPN may operate and use the electric line and any other elements of the UKPN Works as part of the electricity distribution network.

(6) For the purposes of the authorised development, development consent granted by this Order is to include and permit the alteration, removal, clearance, refurbishment, reconstruction and demolition of any buildings or other structures within the Order limits to the extent that they relate to, are required by or are incidental to the carrying out of the authorised development.

(7) The authorised development must be constructed and installed in the lines and situations shown on the works plans, subject to article 5 (limits of deviation) and to the Requirements.

(8) Schedule 3 (requirements) has effect.

19.3 Article 5 provides for Limits of Deviation:

5.— (1) Subject to paragraph (4), in respect of the overhead electric line and underground electric line works forming part of the authorised development for which it is granted development consent by paragraph (1) of article 3 (development consent etc. granted by the Order), the undertaker may—

(a) deviate from the lines or situations shown on the works plans within the limits of deviation relating to a Work shown on those plans and carry out construction activities for the purpose of the authorised development anywhere within the Order limits; and

(b) in respect of the pylons deviate vertically as set out in the table of parameters—

(i) to any extent upwards not exceeding 6 metres save in respect of pylons TB140 to TB142 (inclusive) and TB238 to TB243 (inclusive) which may deviate vertically to any extent upwards not exceeding 18 metres;

(ii) to such extent downwards as the undertaker considers necessary or convenient;

(c) in respect of the overhead conductors and fibre-optic earth wires deviate vertically to such extent as the undertaker considers necessary or convenient;

(d) in respect of the underground electric line, deviate vertically—

(i) upwards such that the minimum distance that will be kept between the top of the protective tiles or (where there are no protective tiles) the top of the cable ducts and the top of the finished ground level is 0.9 metres; and

(ii) downwards to such extent as the undertaker considers necessary or convenient.

(2) Without prejudice to article 3(8) the removal, clearance, decommissioning and demolition of any existing electric line may take place within the Order limits;

(3) Subject to paragraph (4), in respect of permanent above ground structures, erections and apparatus forming part of the authorised development, including substations, converter stations and cable sealing end compounds, other than the overhead electric line and underground electric line to which paragraph (1) refers—

(a) the authorised development is to be carried out within any applicable non-linear limits of deviation shown on the works plans; and

(b) the undertaker may deviate to any extent upwards not exceeding 10% above the maximum height shown on the table of parameters and to such extent downwards as the undertaker considers necessary or convenient.

(4) The maximum limits of vertical deviation specified in paragraphs (1)(b), (1)(d) and (3)(b) do not apply where it is demonstrated by the undertaker to the Secretary of State's satisfaction and the Secretary of State, following consultation with the relevant planning authority and any other person the Secretary of State considers appropriate having regard to the proposed deviation in question and the statutory roles and responsibilities of such person, certifies accordingly that a deviation in excess of these limits would not give rise to any materially new or materially different environmental effects to those identified in the Environmental Statement.

19.4 By Article 6, Benefit of the Order:

6.—(1) Subject to article 7 (consent to transfer benefit of Order), the provisions of this Order have effect solely for the benefit of—

(a) National Grid in respect of the authorised development;

(b) Subject to paragraph (5), UKPN in respect of the UKPN Works; and

(c) National Grid and/or UKOP in respect of the works specified in Schedule 9A (works for the protection of UKOP apparatus).

(2) Paragraph (1) does not apply to the benefit of the consent granted by this Order for works carried out by the undertaker for the benefit or protection of land or persons (including statutory undertakers) affected by the authorised development.

(3) UKPN may not carry out the UKPN Works under article 3(3)(a) (development consent etc. granted by the Order) except in accordance with the written consent of National Grid, which may be granted subject to reasonable conditions.

(4) If UKPN fails to carry out any of the UKPN Works in accordance with National Grid's consent, National Grid may give UKPN and the Secretary of State notice that National Grid intends to carry out those UKPN Works under article 3(3)(a) (development consent etc. granted by the Order) from a date specified in the notice.

(5) On the date specified in any notice under paragraph (4) of this article—

(a) UKPN is to cease to have the benefit of article 3(3) (development consent etc. granted by the Order) and sub-paragraph (1)(b) of this article;

(b) UKPN is to cease to be an undertaker for the installation of the UKPN Works but remains an undertaker for the purposes of keeping installed and maintaining the electric lines included in the UKPN Works; and

(c) references to UKPN in article 28 (temporary use of land by UKPN) are to be read as including National Grid.

(6) No person may be—

(a) held liable in any manner for breaching or otherwise failing to comply with a term of this Order except where they are the person who (as applicable) has carried out, or caused to be carried out, that part of the authorised development to which the breach or failure relates or has exercised, or caused to be exercised, the provision of this Order to which the breach or failure relates; or

(b) required to comply with a term of this Order except where they are the person who (as applicable) has carried out, or caused to be carried out, that part of the authorised development to which the term relates or has exercised, or caused to be exercised, the provision of this Order to which the term relates.

19.5 By Article 7, Consent to transfer benefit of Order:

(1) National Grid in relation to the authorised development (not including the UKPN Works), and UKPN in relation to the UKPN Works, may, with the consent of the Secretary of State—

(a) transfer to another person ("the transferee") any or all of the benefit of the provisions of this Order and such related statutory rights as may be agreed between National Grid or UKPN and the transferee;

(b) grant to another person ("the lessee") for a period agreed between National Grid or UKPN and the lessee any or all of the benefit of the provisions of this Order and such related statutory rights as may be so agreed…

19.6 By Article 8, Application of the 1990 Act:

8 (1) In respect of the temporary construction works, section 57(2) of the 1990 Act (planning permission required for development) applies as if the development consent granted by this Order were planning permission granted for a limited period.

(2) Development consent granted by this Order is to be treated as specific planning permission for the purposes of section 264(3)(a) of the 1990 Act (cases in which land is to be treated as not being operational land).

(3) In the exercise of the power under paragraphs (1) and (2) of article 11 (street works) the undertaker is to be deemed to be the highway authority for the purposes of section 55(2)(b) of the 1990 Act.

(4) For the purposes of the 1990 Act, the works specified in Schedule 9A (works for the protection of UKOP apparatus) do not constitute the development of land requiring consent under section 55.

19.7 By Article 10, Planning Permission and other consents:

10.(1) If planning permission is issued pursuant to the 1990 Act for development any part of which is within the Order limits that is—

(a) not itself a nationally significant infrastructure project under the 2008 Act or part of such a project; and

(b) required to complete or enable the construction, use or operation of any part of the development authorised by this Order, then the carrying out, use or operation of such development pursuant to the

terms of the planning permission does not constitute a breach of the terms of this Order.

(2) To the extent any development carried out or used pursuant to a planning permission granted under the 1990 Act or development consent granted under the 2008 Act or compliance with any conditions of that permission or requirements of that development consent is inconsistent with the exercise of any power or right under this Order or the authorised development—

(a) that inconsistency is to be disregarded for the purposes of establishing whether any development which is the subject matter of that planning permission or development consent is capable of physical implementation; and

(b) in respect of that inconsistency, no enforcement action under the 1990 Act or the 2008 Act may be taken in relation to development carried out or used pursuant to that planning permission or development consent whether inside or outside the Order limits.

(3) Any development or any part of a development within the Order limits which is constructed or used under the authority of a planning permission granted under the 1990 Act or of a development consent granted under the 2008 Act, including permissions falling under paragraph (1) or (2) or otherwise, is deemed not to be a breach of, or inconsistent with, this Order and will not prevent the authorised development being carried out or used or any other power or right under this Order being exercised.

19.8 By Article 16, Temporary Closure of streets and public rights of way:

16. (1) During and for the purposes of carrying out the authorised development, the undertaker may temporarily close, alter or divert any street or public right of way shown on the access, rights of way and public rights of navigation plans or within the Order limits and may for any reasonable time—

(a) divert the traffic from the street or public right of way; and

(b) subject to paragraph (3), prevent all persons from passing along the street or public right of way.

(2) Without limitation on the scope of paragraph (1), the undertaker may, with the consent of the street authority (such consent not to be unreasonably withheld or delayed), use as a temporary working site any street or public right of way which has been temporarily closed, altered or diverted under the powers conferred by this article.

(3) The undertaker must provide reasonable access for pedestrians going to or from premises abutting a street or public right of way affected by the temporary closure, alteration or diversion under this article if there would otherwise be no reasonable access.

(4) Without limitation on the scope of paragraph (1), the undertaker may temporarily close, alter or divert the streets or public rights of way specified in columns (1) and (2) of Parts 1 to 4 of Schedule 8 (streets or public rights of way to be temporarily closed) to the extent specified, by reference to the letters and numbers shown on the access, rights of way and public rights of navigation plans, in column (3) of that Schedule, and, if it does so in respect of a street or public right of way specified in Part 1 or Part 3 of Schedule 8, must provide the temporary diversion as specified in column (4) of that Part.

(5) The undertaker must not temporarily close, alter or divert—

(a) any street or public right of way specified as mentioned in paragraph (4) without first consulting the street authority; or

(b) any other street or public right of way without the consent of the street authority (such consent not to be unreasonably withheld or delayed) which may attach reasonable conditions to any consent.

(6) Where the undertaker provides a temporary diversion under paragraph (4), the temporary alternative route is not required to be of a higher standard than the temporarily closed street or public right of way in columns (1) and (2) of Part 1 or Part 3 of Schedule 8 (streets or public rights of way to be temporarily closed).

(7) Any person who suffers loss by the suspension of any private right of way under this article is entitled to compensation to be determined, in case of dispute, under Part 1 of the 1961 Act.

(8) If a street authority which receives an application for consent under paragraph (2) or (5)(b) fails to notify the undertaker of its decision before the end of the period of 28 days (or such other period as agreed by the relevant street authority and the undertaker) beginning with the date on which the application was made, it is deemed to have granted consent.

(9) Any application for consent under paragraph (2) or (5)(b) must include a statement that the provisions of paragraph (8) apply to that application.

(10) If an application for consent under paragraph (2) or (5)(b) does not include the statement required under paragraph (9) then the provisions of paragraph (8) will not apply to that application.

19.9 By Article 20, Discharge of Water:

PART 4

SUPPLEMENTAL POWERS

Discharge of water

20.—(1) The undertaker may use <u>any watercourse</u> or any public sewer or <u>drain</u> <u>for the drainage of water in connection with the carrying out or maintenance of the authorised development</u>, <u>and for that purpose may lay down, take up and alter pipes and may, on any land within the Order limits, make openings into, and connections with, the watercourse, public sewer or drain</u>.

(2) Any dispute arising from the making of connections to or the use of a public sewer or drain by the undertaker pursuant to paragraph (1) must be determined as if it were a dispute under section 106 of the Water Industry Act 1991(a) (right to communicate with public sewers).

(3) The undertaker must not discharge any water into any watercourse, public sewer or drain except with the consent of the person to whom it belongs; and such consent may be given subject to such terms and conditions as that person may reasonably impose, but must not be unreasonably withheld or delayed.

(4) The undertaker must not make any opening into any public sewer or drain except—

(a) in accordance with plans approved by the person to whom the sewer or drain belongs, but such approval must not be unreasonably withheld or delayed; and

(b) where that person has been given the opportunity to supervise the making of the opening.

(5) The undertaker must not, in carrying out or maintaining works pursuant to this article, damage or interfere with the bed or banks of any watercourse forming part of a main river.

(6) The undertaker must, unless otherwise authorised under the provisions of this Order or any environmental permit relating to the discharge of water in connection with the authorised development, take such steps as are reasonably practicable to secure that any water discharged into a watercourse or public sewer or drain under the powers conferred by this article is as free as may be practicable from gravel, soil or other solid substance, oil or matter in suspension; but nothing in this Order requires the undertaker to maintain a watercourse or public sewer or drain or the drainage works.

(7) Nothing in this article overrides the requirement for an environmental permit under regulation 12(1)(b) of the 2016 Regulations(b).

(8) This article does not permit any activity listed in paragraph 3(1) of Schedule 21 to the 2016 Regulations.

(9) If a person who receives an application for consent under paragraph (3) or approval under paragraph (4)(a) fails to notify the undertaker of a decision within 28 days (or such other period as agreed by the person receiving the application and the undertaker) of receiving an application, that person is deemed to have granted consent or given approval, as the case may be.

(10) Any application for consent under paragraph (3) or approval under paragraph (4)(a) must include a statement that the provisions of paragraph (9) apply to that application.

(11) If an application for consent under paragraph (3) or approval under paragraph (4)(a) does not include the statement required under

paragraph (10) then the provisions of paragraph (9) will not apply to that application.

(12) In this article—

(a) "public sewer or drain" means a sewer or drain which belongs to Homes England, the Environment Agency, a harbour authority within the meaning of section 57 of the Harbours Act 1964(c), an internal drainage board, a joint planning board, a local authority, a National Park Authority, a sewerage undertaker or an urban development corporation; and

(b) other expressions, excluding watercourse, used both in this article and in the 2016 Regulations have the same meaning as in those Regulations.

19.10 By Article 22, provision is made for surveying of the land:

22 –(1) The undertaker may for the purposes of this Order enter on any land either shown within the Order limits or land which may be affected by the authorised development and—

(a) survey, monitor or investigate the land (including any watercourses, groundwater, static water bodies or vegetation on the land);

(b) without prejudice to the generality of sub-paragraph (a), survey, monitor or investigate the land and any buildings on that land for the purpose of investigating the potential effects of the authorised development on that land or buildings on that land or for enabling the construction, use and maintenance of the authorised development;

(c) without limitation on the scope of sub-paragraph (a), make trial holes, boreholes, excavations or take horizontal cores in such positions on the land as the undertaker thinks fit to investigate the nature of the surface layer, subsoil, groundwater and other materials below ground level and/or remove soil, rock, water and/or other material samples and discharge water from sampling operations on to the land;

(d) without limitation on the scope of sub-paragraph (a), carry out ecological or archaeological investigations and monitoring on the

land, including making any excavations or trial holes on the land for such purposes; …

19.11 Part 5 of the DDCO provides for "Acquisition and Possession of Land":

PART 5

ACQUISITION AND POSSESSION OF LAND

Powers of acquisition

Compulsory acquisition of land

24.—(1) National Grid may acquire compulsorily so much of the Order land described in the book of reference as is required for the construction, operation and maintenance of the authorised development (including the UKPN Works) or is incidental to it or required to facilitate it.

(2) UKPN may acquire compulsorily so much of the Order land described in the book of reference as is required for the construction, operation and maintenance of the UKPN Works only.

19.12 By Article 25, Compulsory acquisition of rights

25.—(1) Subject to the provisions of this article, the undertaker may acquire compulsorily the rights, and impose the restrictions, over the Order land, described in the book of reference, including rights and restrictive covenants for the benefit of a statutory undertaker or any other person, by creating them as well as by acquiring rights and the benefits of restrictions already in existence.

(2) Subject to section 8 of the 1965 Act (other provisions as to divided land) as substituted by Schedule 9 to this Order (modification of compensation and compulsory purchase enactments for creation of new rights), where the undertaker acquires a right over land or imposes a restriction under paragraph (1), the undertaker is not required to acquire a greater interest in that land.

(3) Schedule 9 to this Order has effect for the purpose of modifying the enactments relating to compensation and the provisions of the 1965 Act in their application in relation to the compulsory acquisition under this article of a right over land by the creation of a new right or the imposition of a restriction.

(4) In any case where the acquisition of rights or the imposition of a restriction under paragraph (1) is required for the purpose of diverting, replacing or protecting apparatus of a statutory undertaker, the undertaker may, with the consent of the Secretary of State, transfer the power to acquire such rights or impose such restrictions to the relevant statutory undertaker other than in respect of the UKPN Works where no such consent is required.

(5) The exercise by a statutory undertaker of any power in accordance with a transfer under paragraph (4) is subject to the same restrictions, liabilities and obligations as would apply under this Order if that power were exercised by the undertaker.

19.13 By Article 26, Acquisition of subsoil or airspace only

26.—(1) The undertaker may compulsorily acquire so much of, or such rights in, the subsoil of, or the airspace of, the land referred to in article 24 (compulsory acquisition of land) and article 25 (compulsory acquisition of rights) as may be required for any purpose for which that land may be acquired or for which rights over or under the land may be acquired under those provisions instead of acquiring the whole of the land…

19.14 Articles 27 and 28 provide for the "Temporary use of land" by National Grid and by UK National Power Networks, respectively.

19.15 By Article 27:

27.—(1) National Grid may, in connection with the carrying out of the authorised development—

(a) enter on and take temporary possession of—

(i) so much of the land specified in column (1) of Schedule 11 (land of which temporary possession may be taken) to exercise the powers described in the book of reference for the purpose specified in relation to that land in column (2) of that Schedule relating to the part of the authorised development specified in column (3) of that Schedule; and

(ii) any other Order land in respect of which no notice of entry has been served under section 11 of the 1965 Act (other than in

connection with the acquisition of rights only) and no declaration has been made under section 4 of the 1981 Act;

(b) remove or alter any electric line, electrical plant, electronic telecommunications apparatus, buildings, structures, pylons, apparatus, equipment, vegetation or any other thing from that land;

(c) construct temporary or permanent works (including the provision of means of access, drainage, security fencing, storage areas structures, scaffolding, protective measures and buildings) on that land; and

(d) in relation to temporary possession of land taken under sub-paragraph (a)(i) construct any works specified in relation to that land in column (2) of Schedule 11 or any other mitigation works and in relation to temporary possession of land taken under sub-paragraph (a)(ii) construct any of the authorised development or any other mitigation works …

(5) Before giving up possession of land of which only temporary possession has been taken under paragraph (1)(a)(i), unless otherwise agreed with the owners of the land, National Grid must remove all temporary works and restore the land to the reasonable satisfaction of the owners of the land, but National Grid is not required to—

(a) replace a building, structure, apparatus, equipment, electric line, electrical plant or pylon removed under this article;

(b) restore the land on which any works or mitigation works have been carried out under paragraph (1)(d);

(c) remove any foundations below 1.2 metres which had been placed in that land to support pylons and electric lines constructed upon those foundations;

(d) remove any permanent work including pylons, electric lines, underground electric line, or other permanent services, constructed or installed on, over, under or in that land as part of the authorised development;

(e) remove any ground-strengthening works (being either works listed in Schedule 10 of this order or other works to provide safe and

stable ground conditions) which have been placed in that land to facilitate construction of the authorised development;

(f) remove or reposition any apparatus belonging to statutory undertakers;

(g) remove any drainage works; or

(h) restore ground levels adjusted as part of the authorised development.

(6) Before giving up possession of land of which temporary possession has been taken under paragraph (1)(a)(ii), unless otherwise agreed by the owners of the land, National Grid must either acquire the land or the interest on, over, or in the land in accordance with the provisions of paragraph (3)(b) or remove all temporary works and restore the land to the reasonable satisfaction of the owners of the land; but National Grid is not required to—

(a) replace a building, structure, apparatus, equipment, electric line, electrical plant or pylon removed under this article;

(b) restore the land on which any mitigation works have been carried out under paragraph (1)(d);

(c) remove any foundations below 1.2 metres which had been placed in that land to support pylons and electric lines constructed upon those foundations;

(d) remove any permanent work including pylons, electric lines, underground electric line, or other permanent services, constructed or installed on, over, under or in that land as part of the authorised development;

(e) remove any ground-strengthening works (being works to provide safe and stable ground conditions) which have been placed in that land to facilitate construction of the authorised development;

(f) remove or reposition any apparatus belonging to statutory undertakers;

(g) remove any drainage works; or

(h) restore ground levels adjusted as part of the authorised development.

19.16 By Article 28:

28—(1) UKPN may, in connection with the carrying out of the UKPN Works—

(a) enter on and take temporary possession of— (i) so much of the land specified in column (1) of Schedule 11 (Land of which only temporary possession may be taken) to exercise the powers described in the book of reference for the purpose specified in relation to that land in column (2) of that Schedule relating to the part of the authorised development specified in column (3) of that Schedule; and (ii) any other Order land in respect of the UKPN Works in respect of which no notice of entry has been served under section 11 of the 1965 Act (other than in connection with the acquisition of rights only) and no declaration has been made under section 4 of the 1981 Act;

(b) remove any electric line, electrical plant, buildings, structures, pylons, apparatus, equipment, vegetation or any other thing from that land;

(c) construct temporary or permanent works (including the provision of means of access, drainage and buildings or structures on that land); and

(d) construct any works specified in relation to that land in column (2) of Schedule 11 or any other mitigation works.

(2) Not less than 14 days before entering on and taking temporary possession of land under this article, UKPN must serve notice of the intended entry on the owners and occupiers of the land.

(3) UKPN may not, without the agreement of the owners of the land, remain in possession of any land under this article— (a) in the case of land referred to in paragraph (1)(a)(i), after the end of the period of 21 months beginning with the date of completion of the part of the authorised development specified in relation to that land in column (3) of Schedule 11, or (b) in the case of land referred to in paragraph (1)(a)(ii), after the end of the period of 21 months beginning with the date of completion of

the work for which temporary possession of the land was taken unless UKPN has, by the end of that period, served a notice of entry under section 11 of the 1965 Act or made a declaration under section 4 of the 1981 Act in relation to that land.

(4) UKPN must provide the owner(s) of any land of which temporary possession has been taken under this article with written notice of the date of completion of the works for which temporary possession was taken within 28 days of the completion of those works.

(5) Before giving up possession of land of which temporary possession has been taken under paragraph (1)(a)(i), unless otherwise agreed with the owners of the land UKPN must remove all temporary works and restore the land to the reasonable satisfaction of the owners of the land, but UKPN is not required to—

(a) replace a building, structure, electric line, electrical plant or pylon removed under this article;

(b) restore the land on which any works or mitigation have been carried out under paragraph (1)(d);

(c) remove any foundations below 1.2 metres which had been placed in that land to support pylons and electric lines constructed upon those foundations; or

(d) remove any pylons or electric lines or underground cables constructed or installed on, over, under or in that land as part of the UKPN Works.

(6) Before giving up possession of land of which temporary possession has been taken under paragraph (1)(a)(ii), unless otherwise agreed by the owners of the land, UKPN must either acquire the land or the interest on, over, or in the land in accordance with the provisions of paragraph (3)(b) or remove all temporary works and restore the land to the reasonable satisfaction of the owners of the land; but UKPN is not required to—

(a) replace a building, structure, electric line, electrical plant or pylon removed under this article;

(b) restore the land on which any mitigation has been carried out under paragraph (1)(d);

(c) remove any foundations below 1.2 metres which had been placed in that land to support pylons and electric lines constructed upon those foundations; or

(d) remove any pylons or electric lines or underground cables constructed or installed on, over, under or in that land as part of the UKPN Works.

19.17 By Article 29, (Perpetual) provision is made for maintaining the authorised development:

29. - —(1) Subject to paragraph (2), at any time during the maintenance period relating to any part of the authorised development, the undertaker may—

(a) enter upon and take temporary possession of any land within the Order limits if such possession is reasonably required for the purpose of maintaining the authorised development;

(b) construct such temporary works (including the provision of means of access) and buildings on the land as may be reasonably necessary for that purpose; and

(c) enter on any land within the Order limits for the purpose of gaining such access as is reasonably required for the purpose of maintaining the authorised development.

19.18 By Article 34, provision is made for the exercise of authority to acquire land and rights compulsorily:

34.—(1) After the end of the period of seven years beginning with the day on which this Order comes into force—

(a) no notice to treat may be served under Part 1 of the 1965 Act; and

(b) no declaration may be executed under section 4 of the 1981 Act as applied by article 36 (application of the 1981 Act)(b).

(2) The authority conferred by article 27 (temporary use of land by National Grid) and article 28 (temporary use of land by UKPN) ceases at the end of the period referred to in paragraph (1), save that nothing in this paragraph prevents the undertaker remaining in possession of land after the end of that period, if the land was entered and possession was taken before the end of that period.

19.19 By Article 37, Application of Part 1 of the 1965 Act, National Grid propose to engineer the Interpretation provisions of that Act so as to alter the counter-notice provisions by deferring the same:

(6) In Schedule 2A(a) (counter-notice requiring purchase of land not in notice to treat)—

(a) for paragraphs 1(2) and 14(2) substitute— "(2) But see article 26(3) (acquisition of subsoil or airspace only) of the National Grid (Norwich to Tilbury) Order 20[xx], which excludes the acquisition of subsoil or airspace only from this Schedule"; and

(b) after paragraph 29, insert—

"PART 4

INTERPRETATION

30. In this Schedule, references to entering on and taking possession of land do not include doing so under article 21 (protective works), 27 (temporary use of land by National Grid), 28 (temporary use of land by UKPN) or 29 (temporary use of land for maintaining the authorised development) of the National Grid (Norwich to Tilbury) Order 20[xx]."

19.20 By Article 41, Extinguishment of private rights and restrictive covenants relating to apparatus belonging to National Grid or UKPN removed from land subject to temporary possession:

41.(1) This article applies to any Order land of which National Grid takes temporary possession under article 27 (temporary use of land by National Grid) or UKPN takes temporary possession under article 28 (temporary use of land by UKPN).

(2) All private rights or restrictive covenants in relation to apparatus belonging to National Grid or UKPN removed from any land to which this article applies are extinguished from the date on which National Grid or UKPN gives up temporary possession of that land under article 27 (temporary use of land by National Grid) or 28 (temporary use of land by UKPN), as the case may be.

(3) The extinguishment of rights by paragraph (2) does not give rise to any cause of action relating to the presence on or in the land of any foundations (save for those which lie less than 1.2 metres underground)

referred to in article 27(5)(c) and 27(6)(c) or article 28(5)(c) or 28(6)(c) (National Grid and UKPN not required to remove foundations when giving up temporary possession).

19.21 By Article 44, Statutory undertakers:

44.—(1) Subject to the provisions of Schedule 16 (protective provisions) the undertaker may—

(a) further to the power in article 24 (compulsory acquisition of land), acquire compulsorily the Order land belonging to statutory undertakers, and described in the book of reference;

(b) extinguish or suspend the rights of, remove or reposition apparatus belonging to statutory undertakers where such apparatus is anywhere over or within the Order limits notwithstanding that repositioning may be outside of the Order limits;

(c) further to the power in article 25 (compulsory acquisition of rights), acquire compulsorily existing rights, create and acquire the new rights and impose restrictive covenants over land belonging to statutory undertakers described in the book of reference and indicated on the land plans;

(d) construct the authorised development in such a way as to cross underneath or over apparatus belonging to statutory undertakers and other like bodies within the Order limits; and

(e) construct over existing apparatus belonging to statutory undertakers any necessary track or roadway (whether temporary or permanent) together with the right to maintain or remove the same, and install such service media under or over the existing apparatus needed in connection with the authorised development…

19.22 By Article 56, (so-called) Safeguarding:

56—(1) Save in respect of exempt applications, before granting planning permission for development to which this article applies, a relevant planning authority must consult the undertaker.

(2) This article applies to development which would be wholly or partly within the Order limits.

(3) Where this article requires a relevant planning authority to consult the undertaker before granting planning permission— (a) they must give the undertaker notice of the application for planning permission (unless the applicant has served a copy of the application on the undertaker); and (b) they may not determine the application before the end of the period of 21 days, beginning two business days after the relevant planning authority has sent the notice to the undertaker by first class post or by such other means of service as may be agreed with the relevant planning authority, which will be deemed to be the date on which the undertaker receives the notice or copy of the application.

(4) But a relevant planning authority may determine an application during that period if the undertaker has— (a) made representations to the relevant planning authority about the application, or (b) notified the relevant planning authority that it does not intend to make representations.

(5) In determining an application for planning permission a relevant planning authority must take into account any representations received in accordance with this article.

(6) The requirement to consult under this article is a local land charge.

(7) The requirement to consult will cease to have effect upon completion of the decommissioning of the authorised development or the final part of it.

(8) In this article— "exempt applications" means—

(a) an application for planning permission which relates to development that—

(i) consists of an alteration to an existing building, or the change of use of an existing building or land; and

(ii) does not involve, or is not likely to involve, any construction engineering or other operations below existing ground level;

(b) an application for planning permission which is to be determined by a relevant planning authority in the period of 21 days beginning on the day after the date on which the Order comes into force; and

"relevant planning authority" means the planning authority in receipt of an application for planning permission to which this article applies.

19.23 By Article 60, provision is made for "Certification of documents":

60.—(1) National Grid must, as soon as practicable after the making of this Order, submit to the Secretary of State copies of the plans and documents identified in Schedule 19 (certified documents) of this Order for certification as true copies of those plans and documents referred to in this Order.

(2) A plan or document so certified is admissible in any proceedings as evidence of the contents of the document of which it is a copy.

(3) Where any plan or document identified in Schedule 19 is required to be amended to reflect the terms of the Secretary of State's decision to make this Order, that plan or document in the form amended to the Secretary of State's satisfaction is the version of the plan or document required to be certified under paragraph (1).

(4) Where a plan or document certified under paragraph (1)—

(a) refers to a provision in this Order (including any specified requirement) when it was in draft form; and

(b) identifies the provision by number or combination of numbers and letters, which is different from the number or combination of numbers or letters by which the corresponding provision of this Order is identified in the Order as made; the reference in the plan or document concerned must be construed for the purposes of the Order as referring to the provisions (if any) corresponding to that provision in the Order as made.

(5) The undertaker must, following certification of the plans or documents in accordance with paragraph (1), make those plans or documents available in electronic form for inspection by members of the public.

19.24 Schedule 1 provides for the "Authorised Development":

SCHEDULE 1

AUTHORISED DEVELOPMENT Article 3

A nationally significant infrastructure project as defined in sections 14 and 16 of the 2008 Act and associated development within the meaning of section 115(2) of the 2008 Act, comprising—

TRANSMISSION ELECTRIC LINE

…

In the districts of South Norfolk Council and Mid Suffolk District Council

Work No. 2 — overhead transmission electric line (Route RG) from Norwich Main Substation to Bramford Substation

Works shown as commencing on Section A Sheet 1 and terminating on Section B Sheet 22 of the works plans to construct and install a new overhead transmission electric line (Route RG) between the two gantries at Norwich Main Substation (Work No. 1) and the two gantries at Bramford Substation (Work No. 3), <u>including</u>—

(a) the foundations and steelwork to construct new pylons;

(b) the installation of 69 kilometres of overhead transmission electric line between Norwich Main Substation and <u>Bramford Substation</u>;

(c) the installation of conductors, insulators and fittings; and

(d) the installation of <u>fibre optic conductors</u>.

In the district of Mid Suffolk District Council

Work No. 3 — Bramford Substation modifications and Line Entries (North) (Route RG) Works as shown on Section B Sheet 20 of the works plans to construct and install two new gantries within Bramford Substation associated with the overhead transmission electric line (Route RG) (Work No. 2), including—

(a) foundations and steelwork to construct and install two new gantries within Bramford Substation;

(b) the installation of conductors, busbars, shunt reactors, switchgear and fittings, including downleads and downdroppers at each new gantry, to facilitate connection to the equipment within the insulated switchgear building situated within Bramford Substation;

(c) the installation of fibre optic conductors, with optical fibre terminated in joint boxes; and

(d) modifications to existing apparatus within the footprint of Bramford Substation.

19.25 In particular, Schedule 1 includes:

In the district of Mid Suffolk District Council

Work No. 4 — Bramford Substation Extension and Line Entries (Route JC)

Works as shown on Section B Sheet 20 of the works plans to construct and install an extension to the existing Bramford Substation and to construct and install two new gantries within Bramford Substation associated with the overhead transmission electric line (Route JC), including—

(a) site clearance and preparation and establishment;

(b) temporary work areas and laydown areas associated with the installation of the works;

(c) earthworks including to create platforms for the new substation equipment, structures, landscaping, roads and compounds;

(d) foundations to support all new structures and equipment;

(e) support structures;

(f) foundations and steelwork to construct and install two new gantries;

(g) equipment between gantries and switchgear;

(h) the installation of conductors, busbars, shunt reactors, switchgear and associated equipment including downleads and downdroppers at each new gantry, to facilitate connection to the equipment within the insulated switchgear building situated within Bramford Substation;

(i) electrical control panels;

(j) troughs and below ground services;

(k) earth mat;

(l) substation building(s);

(m) underground electric cables and fibre optic cables and cable ducts with optical fibre terminated in joint boxes;

(n) relay rooms, battery rooms, storage rooms and other welfare facilities;

(o) telecommunications equipment;

(p) drainage works;

(q) other site furniture;

(r) security perimeter fence including security gates;

(s) the construction of site access roads , hardstanding, car parking, footways and roadways;

(t) utility service connections for electricity, telecommunications and potable water and/or connection of power supply made from temporary generators;

(u) utility service connection for on-site storage for later disposal of grey water and sanitation;

(v) lighting, including masts and columns; and

(w) landscaping, including mitigation planting.

19.26 In further particular, Schedule 1 also includes:

In the districts of Mid Suffolk District Council and Babergh District Council

Work No. 5 — overhead transmission electric line (Route JC) from Bramford Substation to the Wenham Grove Cable Sealing End Compound

Works shown as commencing on Section B Sheet 20 and terminating on Section C Sheet 6 of the works plans to construct and install a new overhead transmission electric line (Route JC) between the two gantries at Bramford Substation (Work No. 4) and the two sealing end compound gantries at the Wenham Grove Cable Sealing End Compound (Work No. 6), including—

(a) the foundations and steelwork to construct new pylons;

(b) the installation of 9 kilometres of overhead transmission electric line between Bramford Substation and the Wenham Grove Cable Sealing End Compound;

(c) the installation of conductors, insulators and fittings, including downleads and downdroppers at each gantry to facilitate connection to the equipment within the Wenham Grove Cable Sealing End Compound; and

(d) the installation of fibre optic conductors, with optical fibre terminated in joint boxes.

19.27 In further particular, Schedule 1 also includes works described as "Distribution":

DISTRIBUTION ELECTRIC LINE WORKS (UKPN WORKS)

In the district of Mid Suffolk District Council and Babergh District Council

Work No. 28 — replacement of existing overhead distribution electric line (Route PHB)

Works shown as commencing on Section B Sheet 20 and terminating on Section C Sheet 2 of the works plans to replace 3 kilometres of the existing overhead distribution electric line (Route PHB) from Bramford Substation and terminating at or in proximity to a point indicated as PHB21 with a new underground distribution electric line, including —

(a) the dismantling and removal of overhead distribution electric line and pylons, including foundations, steelwork and associated conductors, downleads, insulators and fittings, commencing at or in proximity to a point indicated as Bramford Substation on Section B Sheet 20 of the Work Plans and terminating at or in proximity to a point indicated as PHB21 on Section C Sheet 2 of the Work Plans;

(b) modifications to the cable sealing ends and substation equipment within the existing Bramford Substation;

(c) the installation of a new cable sealing end, either—

(i) on platform pylons; or

(ii) by modifying existing pylons to install cable sealing end platforms; or

(iii) within compounds, including foundations, steelwork and associated conductors, downleads, insulators and fittings;

(d) the installation of 3.2 kilometres of new underground distribution electric line, including cable ducts, joint bays, link pillars, fibre optic conductors and earthing and protection and control systems, to facilitate a connection between the new cable sealing end platform pylon PHB21 and Bramford Substation; and

(e) the temporary diversion of the existing overhead distribution electric line (Route PHB) in order to facilitate the works as described above.

19.28 In further particular, Schedule 1 also includes works described as "Distribution":

In the districts of Mid Suffolk District Council and Babergh District Council

Work No. 29 — replacement of existing overhead distribution electric line (Route PLD)

Works shown as commencing on Section B Sheet 20 and terminating on Section B Sheet 21 of the works plans to replace 1.3 kilometres of the existing overhead distribution electric line (Route PLD) commencing at or in proximity to a point indicated as Bramford Substation to a point indicated as PLD48 with a new underground distribution electric line, including—

(a) the dismantling and removal of overhead distribution electric line and pylons, including foundations, steelwork and associated conductors, downleads, insulators and fittings, commencing at or in proximity to a point indicated as Bramford Substation on Section A Sheet 20 of the Work Plans and terminating at or in proximity to a point indicated as PLD48 on Section B Sheet 21 of the Work Plans;

(b) modifications to the cable sealing ends and substation equipment within the existing Bramford Substation;

(c) the installation of a new cable sealing end, either—

(i) on platform pylons; or

(ii) by modifying existing pylons to install cable sealing end platforms; or

(iii) within compounds, including foundations, steelwork and associated conductors, downleads, insulators and fittings;

(d) *the installation of 1.6 kilometres of new underground distribution electric line, including cable ducts, joint bays, link pillars, fibre optic conductors and earthing and protection and control systems, to facilitate a connection between Bramford substation and the new cable sealing end platform pylon PLD48; and*

(e) *the temporary diversion of the existing overhead distribution electric line (Route PLD) in order to facilitate the works as described above.*

19.29 In further particular, Schedule 1 also includes works described as "Temporary construction compounds":

CONSTRUCTION, MAINTENANCE AND USE - <u>TRANSMISSION</u> ELECTRIC LINE

In the districts of South Norfolk Council, Mid Suffolk District Council, Babergh District Council, Tendring District Council, Colchester City Council, Braintree District Council, Chelmsford City Council, Brentwood Borough Council and Thurrock Council Work No. 37 — Temporary construction compounds

Work No. 37 — Temporary construction compounds

Works to construct temporary site compounds as part of the authorised development, which may include—

(a) *earthworks, soil stripping and storage, ground improvement;*

(b) *car parking, hard standing, roadways and access roads (including construction site services and temporary bridges);*

(c) *drainage works;*

(d) *office and staff welfare facilities;*

(e) *utility service connections for electricity, communications and potable water and/or connection of power supply made from temporary generators;*

(f) *utility service connection or on-site storage for later disposal of grey water and sanitation;*

(g) *emergency electrical generator;*

(h) *materials, tools and fuel storage and laydown areas;*

(i) *assembly areas;*

(j) *plant and equipment storage areas;*

(k) wheel cleaning facilities;

(l) security cabin and fencing and gates;

(m) construction and security lighting; and

(n) construction waste management facilities.

19.30 In further particular, Schedule 1 also includes works described as “Temporary construction compounds with batching plant”:

In the districts of Babergh District Council, Tendring District Council and Colchester City Council

Work No. 38 — Temporary construction compounds with batching plant

Works to construct temporary site compounds as part of the authorised development, which may include—

(a) earthworks, soil stripping and storage, ground improvement;

(b) car parking, hard standing, roadways and access roads (including construction site services and temporary bridges);

(c) drainage works;

(d) office and staff welfare facilities;

(e) utility service connections for electricity, communications and potable water and/or connection of power supply made from temporary generators;

(f) utility service connection or on-site storage for later disposal of grey water and sanitation;

(g) emergency electrical generator;

(h) materials, tools and fuel storage and laydown areas;

(i) assembly areas;

(j) plant and equipment storage areas;

(k) wheel cleaning facilities;

(l) security cabin and fencing and gates;

(m) construction and security lighting;

(n) construction waste management facilities; and

(o) batching plant.

19.31 In further particular, Schedule 1 also includes works described as "Distribution":

CONSTRUCTION, MAINTENANCE AND USE - <u>DISTRIBUTION ELECTRIC LINE</u>

In the districts of Mid Suffolk District Council, Babergh District Council, Braintree District Council, Chelmsford City Council, Brentwood Borough Council, Basildon Borough Council and Thurrock Council

Work No. 40 — Temporary construction compounds

Works to construct temporary site compounds as part of the UKPN Works, which may include—

(a) earthworks, soil stripping and storage, ground improvement;

(b) car parking, hard standing, roadways and access roads (including construction site services and temporary bridges);

(c) drainage works;

(d) office and staff welfare facilities;

(e) utility service connections for electricity, communications and potable water and/or connection of power supply made from temporary generators;

(f) utility service connection or on-site storage for later disposal of grey water and sanitation;

(g) emergency electrical generator;

(h) materials, tools and fuel storage and laydown areas;

(i) assembly areas;

(j) plant and equipment storage areas;

(k) wheel cleaning facilities

(l) security cabin and fencing and gates;

(m) construction and security lighting; and

(n) construction waste management facilities.

19.32 In further particular, Schedule 1 also includes works described as "Associated Development":

ASSOCIATED DEVELOPMENT

Such associated development not listed above, within the Order limits, as may be necessary or expedient for the purposes of or in connection with the construction or maintenance of the above Work Nos. or any of them, including—

(a) ramps, means of access (including crossovers), footpaths, bridleways, trackways and pontoons;

(b) permanent vehicular access road(s), hardstanding, drainage (including attenuation ponds), and site services and utilities connections, including power supply to substations and sealing end compounds;

(c) temporary vehicular access road(s), hardstanding, drainage (including attenuation ponds), and site services and utilities connections, including power supply to temporary construction compounds;

(d) embankments, bridges, aprons, abutments, foundations, retaining walls, drainage, wing walls, fencing and culverts;

(e) works to alter the position of apparatus, including mains, sewers, drains, conductors and cables;

(f) works to alter the position of UKPN apparatus, including construction and installation, decommissioning and partial removal and alteration of electric line, conductors, cables and pylons;

(g) works to alter the course of, or otherwise interfere with a watercourse, drainage works, dewatering works, attenuation ponds, and temporary culverts;

(h) landscaping, including mitigation planting, and other works to mitigate any adverse effects of the construction, maintenance, operation or use of the authorised development, together with means of access;

(i) tree, hedgerow and vegetation planting and maintenance works;

(j) works for the benefit or protection of the environment;

(k) works for the benefit or protection of land, structures, apparatus or equipment affected by the authorised development (including arcing horns, earthing and works for monitoring);

(l) works required for the strengthening, improvement, maintenance, or reconstruction of any streets;

(m) works to streets and any alteration, removal or installation of road furniture, traffic signage and signals, including where required to facilitate the construction of temporary accesses;

(n) works to place, alter, divert, relocate, protect, remove or maintain the position of apparatus (including statutory undertakers' apparatus), services, plant and other equipment in, under or above a street, or in other land, including mains, sewers, drains, pipes, lights, electric line, conductors, cables, fencing and other boundary treatments;

(o) site preparation works, site clearance (including fencing, gates, vegetation removal, demolition of existing buildings or structures and the creation of alternative footpaths), earthworks (including soil stripping and storage, site levelling, ground improvement);

(p) establishment of site construction compounds, temporary laydown and storage areas, temporary offices, temporary vehicle parking, construction fencing, perimeter enclosure, security fencing, gates, construction related buildings, welfare facilities, construction and security lighting and haulage roads;

(q) establishment of launch pits and/or receiving pits to facilitate the use of trenchless cable installation techniques to install any underground electric line;

(r) wheel cleaning facilities;

(s) supervisory control and data acquisition communication equipment;

(t) installation of wires, cables, ducts, pipes and conductors, establishment of winching points and the installation of scaffolding; and

(u) such other works, including scaffolding, working sites storage areas, and works of demolition (which includes but is not limited to demolition of residential properties), as may be necessary or expedient for the purposes of or in connection with the construction of the authorised development and which do not give rise to any materially new or materially different environmental effects from those identified in the environmental statement.

19.33 Schedule 2 (and Article 2) provides for “Plans”.

19.34 Schedule 3 (and Article 3) provides for “Requirements”.

19.35 By Requirement 4, Construction Management Plans:

(1) No stage of the authorised development may commence until, for that stage, the following plans as relevant to that stage have been submitted to and approved by the relevant planning authority (in consultation with Natural England in the case of the landscape and ecological management plan) or other discharging authority as may be appropriate to the relevant plan concerned. The relevant plans are—

(a) code of construction practice (which must be substantially in accordance with the outline code of construction practice);

(b) construction traffic management plan (which must be substantially in accordance with the outline construction traffic management plan);

(c) landscape and ecological management plan (which must be substantially in accordance with the outline landscape and ecological management plan);

(d) public rights of way management plan (which must be substantially in accordance with the outline public rights of way management plan);

(2) All construction works for each stage of the authorised development must be carried out in accordance with the approved plans referred to in paragraph (1), unless otherwise agreed with the relevant planning authority or other discharging authority as may be appropriate to the relevant plan concerned.

(3) For the avoidance of doubt, all pre-commencement operations must be carried out in accordance with the outline code of construction practice, the outline construction traffic management plan, the outline landscape and ecological management plan and the outline public rights of way management plan unless otherwise agreed with the relevant planning authority or other discharging authority as may be appropriate to the relevant plan concerned.

19.36 By Requirement 6, Design and layout plans (elevations):

6. Design and layout plans (elevations)

(1) The authorised development must be carried out in general accordance with the levels shown on the design and layout plans (elevations).

(2) The authorised development will not be in general accordance with the design and layout plans (elevations) to the extent that any departure from the design and layout plans (elevations) gives rise to any materially new or materially different environmental effects from those identified in the environmental statement.

19.37 By Requirement 8, Retention and removal of trees, woodland and hedgerows:

8. Retention and removal of trees, woodland and hedgerows

(1) Unless otherwise agreed with the relevant planning authority, no stage of the authorised development may commence until, for that stage, a plan showing the trees, groups of trees, woodlands and hedgerows to be retained and/or removed during that stage has been submitted to and approved by the relevant planning authority…

19.38 By Requirement 9, Reinstatement planting plan:

9. Reinstatement planting plan

(1) Unless otherwise agreed with the relevant planning authority, no stage of the authorised development may be brought into operational use until, for that stage, a reinstatement planting plan for trees, groups of trees, woodlands and hedgerows to be reinstated during that stage has been submitted to and approved by the relevant planning authority…

19.39 Importantly, by Requirement 10, Reinstatement schemes:

10. Reinstatement schemes

(1) Subject to sub-paragraphs (2) and (3), any land within the Order limits which is used temporarily for construction is to be reinstated to a condition suitable for its former use, or such condition as the relevant planning authority may approve, within 21 months of completion of the construction of the stage of authorised development for which it was required, or such further time as may be approved by the relevant planning authority.

(2) The requirement to reinstate the land to a condition suitable for its former use does not apply to land above or within 10 metres of underground cables installed as part of the authorised development.

(3) The requirement to reinstate the land to a condition suitable for its former use is subject to the provisions of article 27 (temporary use of land by National Grid), article 28 (temporary use of land by UKPN) and article 29 (temporary use of land for maintaining the authorised development).

20. OUTLINE CODE OF CONSTRUCTION PRACTICE

20.1 Document **APP-300**, the Outline Code of Construction Practice, includes as follows:

2.2.2 Should consent be granted, it is anticipated that construction of the Project would commence in 2027 and continue for four years through to 2031 (including demobilization)…

20.2 Table 2.1, Proposed temporary construction compounds, describes that:

Compound Name (reference)	Project Section	Compound Type	DCO (document reference 3.1)

			Schedule 1 Work Number
Land to the east of Bramford Substation	Mid Suffolk B	Substation compound	37
UKPN Compounds			
PHB/PLD, south-east of Bramford Substation	B	132 kV overhead line mitigation works compound	40

20.3 Section 6, Mitigation Measures, Environmental Commitments and Monitoring includes as follows:

Agriculture and Soils

6.1.3 ES Chapter 6: Agriculture and Soils (document reference 6.6) considers the potential effects of the Project on soil quality and soil resources. The chapter sets out the mitigation measures that will be undertaken in relation to soil. Effective management of the soil resource through the construction process is required to maintain good soil quality as recognised in the following documents which have been considered when producing this Outline CoCP:

- *Construction Code of Practice for the Sustainable Use of Soils on Construction Sites (Department for Environment, Food and Rural Affairs (Defra), 2009);*
- *Institute of Quarrying (IoQ) Good Practice Guide for Handling Soils in Mineral Workings (IoQ, 2021).*

20.4 Section 6, Mitigation Measures, Environmental Commitments and Monitoring further includes as follows:

Contaminated Land, Geology and Hydrogeology

6.1.9 ES Chapter 9: Contaminated Land, Geology and Hydrogeology (document reference 6.9) considers the potential impacts on contaminated land, geology and hydrogeology during construction and operation (and maintenance) of the Project, and whether those impacts are likely to result in significant effects on groundwater, mineral deposits, designated geological sites, surface water (associated with groundwater impacts) and human health.

20.5 Section 6, Mitigation Measures, Environmental Commitments and Monitoring further includes as follows:

Hydrology, Land Drainage and Flood Risk

6.1.15 ES Chapter 12: Hydrology, Land Drainage and Flood Risk (document reference 6.12) considers the potential effects on hydrology, land drainage and flood risk, including surface water receptors. In addition, a Flood Risk Assessment (document reference 7.9) and Water Framework Directive Assessment (document reference 7.10) have been produced as part of the application for development consent.

20.6 Table 6.1, "Mitigation Measures/environmental commitments", includes GG21 and GG22:

a) GG21 provides:

Materials and equipment will be moved, handled and stored in the most efficient, safe and appropriate manner. When loading and unloading materials from vehicles, including cable drums and excavated materials, drop heights will be limited.

The Main Works Contractor(s) will prepare a Surface Water Management Plan to inform discharge of the DCO Requirement. The Surface Water Management Plan will demonstrate how runoff across the site will be controlled to prevent any off-site increases in flood risk and/or pollution, including consideration of exceedance flow routes. A variety of methods including header drains, buffer zones around watercourses, on-site ditches, silt traps and bunding, shall be adopted as specified in the Surface Water Management Plan, and where identified as necessary during inspections, audits and in response to incidents. Construction drainage measures will be developed liaising with the Lead Local Flood Authorities (LLFAs), with ongoing dialogue during implementation of the measures. There will be no intentional discharge of site runoff to ditches,

watercourses, drains or sewers without appropriate treatment and agreement of the appropriate authority (except in the case of an emergency).

b) GG22 provides:

The Main Works Contractor(s) will prepare a Surface Water Management Plan to inform discharge of the DCO Requirement. The Surface Water Management Plan will demonstrate how runoff across the site will be controlled to prevent any off-site increases in flood risk and/or pollution, including consideration of exceedance flow routes. A variety of methods including header drains, buffer zones around watercourses, on-site ditches, silt traps and bunding, shall be adopted as specified in the Surface Water Management Plan, and where identified as necessary during inspections, audits and in response to incidents. Construction drainage measures will be developed liaising with the Lead Local Flood Authorities (LLFAs), with ongoing dialogue during implementation of the measures. There will be no intentional discharge of site runoff to ditches, watercourses, drains or sewers without appropriate treatment and agreement of the appropriate authority (except in the case of an emergency).

c) GG24 provides:

Earthwork mounds and stockpiled soil will be protected in line with the Outline SRP (as shown in Appendix C) (to avoid dust generation) by covering, seeding, or using water suppression where appropriate (to be determined by the soil type and the likely storage duration).

d) GG31 provides:

Stockpiles, material storage, vehicle tracking, and soil bunds will be located away from trees and hedgerows, where practical, to ensure no damage occurs to these features and works remain outside of the root protection zone of the features. Works that cannot be undertaken without entering into a root protection zone will be addressed in a bespoke way (within an Arboricultural Method Statement (AMS)) to ensure all appropriate measures are in place to protect the area (unless otherwise agreed with the relevant LPA).

e) GG32 provides:

Runoff across the site will be controlled through a variety of methods including header drains, buffer zones around watercourses, on-site ditches, silt traps and bunding. There will be no intentional discharge of site runoff to ditches, watercourses, drains, including highways drainage systems, or sewers without appropriate treatment and agreement of the appropriate authority. All practicable steps would be put in place to prevent pollution of watercourses in the case of an emergency, with protocols in place to address accidental spills and severe weather events.

f) GG33 provides:

The inclusion of a largely continuous haul roads to reduce effects on the local highway network during construction, that will only be discontinuous at major obstructions along the corridor (major roads, railways, areas of environmental or historical significance and/ or major watercourses).

20.7 Table 6.1 then provides for Agriculture and Soils including as follows:

a) AS01 provides:

Soil management measures are detailed in an Outline Soil Resource Plan (see Appendix C). Measures will include but not be limited to the following:

- *Details of the soil resources present*
- *How topsoil and subsoil will be stripped and stockpiled based on their specific characteristics*
- *Suitable conditions for when handling soil will be undertaken and climatic STOP conditions*
- *Principles to determine suitable soil storage locations*
- *How soil stockpiles will be designed taking into consideration site conditions and the nature/composition of the soil*
- *Specific measures for managing sensitive soils*
- *Suitable protective surfacing where soil stripping can be avoided, based on sensitivity of the environment and proposed works*

- *Approach to reinstating soil that has been compacted, where required*

- *Details of measures required for soil restoration.*

b) AS02 provides: (Emphasis added)

Land required temporarily for construction will be returned to its former agricultural use / condition or a use / condition as discussed with the landowner, where practicable. Any agreements to restore land to a condition as discussed with the landowner will be fully recorded.

c) AS03 provides: (Emphasis added)

Where practicable and safe to do so, existing access to and from residential, commercial, community and agricultural land uses will be maintained throughout the construction period or as agreed through the landowner discussions. This may require signed diversions or temporary restrictions to access. The means of access to affected properties, facilities and land parcels will be communicated to affected parties at the start of the Project / at the start of the relevant sections, with any changes communicated in advance of the change being implemented. Where field-to-field access points require alteration because of construction, alternative field access will be provided in consultation with the landowner/occupier.

d) AS05 provides:

Engagement with affected landowners will be carried out to investigate the current extent of land drainage. A scheme of pre-construction land drainage will be designed with the intent of maintaining the efficiency of the existing known land drainage system and to assist in maintaining the integrity of the working area during construction. The Project may include a system of 'cut-off' drains which feed into a new header drain and the Project will also consider surface water runoff measures. The Main Works Contractor(s) will ensure any land drains within the Order Limits, affected as a result of the Project, will be reinstated to their former condition, where agreed with the landowner. Any installed pre-construction land drainage to replace existing land drains affected by permanent infrastructure, as well as any drainage improvements resulting from the

Project, would be retained. Those outside the Order Limits will be the responsibility of the landowner.

e) AS09 provides:

Appropriate technology / material will be installed in areas where heavy equipment, such as cranes and piling rigs, are to be used, as outlined in GG28 to provide stable working areas and reduce disturbance to the ground. Typically the area will be stripped of the topsoil (and subsoil where required), which will be stored and reinstated (following removal) in accordance with the soil management measures contained in the Outline Soil Resource Plan (Appendix C of the Outline CoCP (document reference 7.2)).

20.8 In relation to Land Drainage, the Table includes:

a) W01 provides:

All qualifying works within and in proximity to main rivers and flood defences will be in accordance with a method approved under environmental permits issued by the Environment Agency under the Environmental Permitting (England and Wales) Regulations 2016. Qualifying works to ordinary watercourses will accord with the protective provisions of the DCO for the benefit of the LLFAs.

b) W02 provides:

For open cut watercourse crossings and installation of vehicle crossing points, mitigation measures will include but not be limited to:

Where practicable, reducing the working width for open cut crossings of a main or ordinary watercourse whilst still providing safe working and reinstating the riparian vegetation and natural bed of (where practical) the watercourse, using the material removed when appropriate on completion of the works and compacting as necessary • Installation of a pollution boom downstream of open cut works

- *The use and maintenance of temporary lagoons, tanks, bunds, silt fences or silt screens as required*
- *Have spill kits and straw bales readily available at all crossing points for downstream emergency use in the event of a pollution incident*

- *The use of all static plant such as pumps in appropriately sized spill trays*
- *Prevent refuelling of any plant or vehicle within 15 m of any watercourse*
- *Prevent storing of soil stockpiles within 15 m of any watercourse or drain where practicable*
- *Inspect all plant prior to work adjacent to watercourses for leaks of fuel or hydraulic fluids.*

c) W04 provides: (Emphasis added)

Active private water supplies will be identified with landowners through the landowner discussions and baseline monitoring will be undertaken. Appropriate measures will be considered during construction to protect these private water supplies. In the event of a landowner or tenant reporting that installation activities have affected their private water supplies, an initial response will be provided within 24 hours. Where the installation works have been shown to affect a private water supply, an alternative water supply will be provided, as appropriate. Irrigation pipes will be avoided where practicable or alternative supplies will be provided where temporary interactions are unavoidable.

d) W13 provides:

Surface water drainage features, based on Sustainable Drainage System (SuDS) techniques, will be installed at temporary compound sites and laydown areas during construction. These areas will be reinstated after completion of the temporary works, as agreed with the landowner. Access roads and haul roads, as well as areas where impermeable material will be installed where heavy equipment would be used, will also have suitable drainage provisions via appropriate SuDS that will provide attenuation and treatment of runoff.

e) W14 provides: (Emphasis added)

Once the Project has been constructed, the working areas will be removed. Any stripped topsoil will be reinstated, and the site will be returned to its former use, subject to any planting restrictions or

agreements with landowners. Temporary bridges and culverts (associated with the construction haul roads) will only be retained by exception e.g. if the new temporary structure has replaced an existing one in poor repair. When these locations are confirmed, crossings would be designed to reflect their permanence e.g. culvert sizing to accommodate climate change allowance. Replacement drainage schemes will be installed where appropriate. A specialised drainage contractor(s) will review the drainage designs and the relevant LLFA will be consulted on proposals (where it is not simply a replacement of the existing drainage run). The specialist contractor(s) will provide advice to National Grid and the Main Works Contractor(s) during all relevant construction and reinstatement activities. Permanent records of the land drainage locations will be made and passed to the landowners/occupiers.

20.9 In respect of Socio-Economics, Recreation and Tourism, the Table includes as follows.

a) S02 provides:

PRoWs crossing the working areas will be managed in discussion with the relevant Local Planning Authorities and potential temporary closures and diversions applied, where required. Road closures and diversions will be kept as brief as possible, with alternative routes maintained where practicable. Access disruption would be reduced while construction activities occur where practicable. Any required temporary diversions will be clearly marked at both ends with signage explaining the diversion, the duration of the diversion and a contact number for any concerns. Management of PRoW during construction is detailed in the Outline PRoW Management Plan (document reference 7.6).

20.10 The Table then provides in relation to the above: (Emphasis added)

Compliance Date and Details

To be confirmed by the Main Works Contractor(s) if Project is consented.

SECTION 9 – LAW AND LEGAL REQUIREMENTS

"SUBJECT TO LEGAL REQUIREMENTS"

(A) On the 22nd November 2023 (updated 17th January 2024), Parliament designated NPS EN-1 as a National Policy Statement. NPS EN-1 includes: (Emphasis added)

3.3.63 Subject to any legal requirements, the urgent need for CNP Infrastructure to achieving our energy objectives, together with the national security, economic, commercial, and net zero benefits, will in general outweigh any other residual impacts not capable of being addressed by application of the mitigation hierarchy. Government strongly supports the delivery of CNP Infrastructure and it should be progressed as quickly as possible.

(B) The legal requirements are as follows below.

(C) In March 2023 (updated November 2024), Parliament designated NPS EN-5 as a National Policy Statement. NPS EN-5 includes: (Emphasis added)

2.6.3 As a last resort, where it does not succeed in reaching the agreement that it requires, the network company may, as part of its application to the Secretary of State, seek to acquire rights compulsorily over the land in question by means of a provision in the DCO.

(D) The cases relating to compulsory acquisition of land, and their legal requirements, are as follow below.

(E) The cases relating to compulsory acquisition of land are set out first because these cases show the particular approach to be taken to the interpretation of statutory provisions in the circumstances of compulsory purchase.

21. COMMON LAW REQUIREMENTS

21.1 The Correct Approach to Statutory Construction in the Compulsory Purchase Sphere

21.1.1 In Chilton v Telford Development Corporation [1987] 1 WLR 872, the Court of Appeal allowed an appeal in respect of the establishment of the correct "valuation date" for the assessment of compensation – after a compulsory purchase order had been made and confirmed. That Court held that because the Compulsory Purchase Act 1965 and the New Towns Act 1965 were statutes which deprived the citizen of property rights by the compulsory acquisition of land and therefore the provisions dealing with the

calculation of compensation and interest were intended by Parliament to protect the owner or occupier who was being dispossessed, the statutory provisions in issue were to be construed in favour of the owner or occupier. In particular, the Court of Appeal held: (Emphasis added)

So one is left here with a provision which has on its face an open-ended power granted to the acquiring authority to act or not to act. It may at least be questioned whether that was entirely the intention of Parliament in enacting what are essentially provisions for the protection of an owner or occupier who is subjected to the necessary, but nevertheless draconian, powers of the acquiring authority to dispossess him of his title and occupation of his land.

For my part, in approaching the construction of these statutory provisions I have two concepts in mind: first, to give to this part of the legislation, if it is open to do so, a purposive construction, bearing in mind the general considerations and need for these provisions. Secondly, to bear in mind that it is a statute which is ***depriving the citizen of his rights in property and his title****, and the right to enjoy occupation of his lands, or perhaps somebody else's lands.*

So, looking at section 12 of the New Towns Act 1965 , and Schedule 6, I pose the question: What is the purpose of requiring the acquiring authority to give notice of not less than 14 days of an intention to enter on and take possession of the land? What it cannot cover, in my judgment, is a contingent intention, not formally adopted, and not in fact carrying with it the intention to act upon it within a reasonable time. Otherwise, the statute provides that the acquiring authority does not have to serve a notice of intention to enter in respect of the whole of the land, subject to the notice to treat, or of the compulsory purchase order itself as relates to the particular owner or occupier; and that they may serve, as and when necessary — which I would construe as meaning as and when they form the intention necessary to bring into effect the provisions of paragraph 4(1) of Schedule 6 — the intention to enter on and take physical possession thereof.

… choosing between the two alternative approaches to this legislation, and I hope fairly recognising the lacuna which exists for practical purposes in the day-to-day carrying out of these exercises, I adopt the construction which is favourable to the owner and occupier of the land, because these sections, although incidentally dealing with calculation of compensation and interest, were primarily enacted for the protection of such a person…

21.1.2 More recently, in *R(on the application of Sainsbury's Supermarkets Ltd) Wolverhampton City Council* [2011] 1 AC 437, the Supreme Court considered the correct approach to the construction of statutory terms relating to the development of land in circumstances of compulsory purchase for development immediately after a compulsory purchase order had been confirmed. The Supreme Court held: (Emphasis added)

1. This appeal is about compulsory acquisition of private property by local authorities under the Town and Country Planning Act 1990 in connection with the development or redevelopment of land. It raises for the first time, in the context of compulsory acquisition, a number of controversial issues which have arisen in the context of planning permission, including these: how far a local authority may go in finding a solution to problems caused by the deterioration of listed buildings; to what extent a local authority may take into account off-site benefits offered by a developer; and what offers (if any) made by a developer infringe the principle or policy that planning permissions may not be bought or sold…

8. CPOs made by a local authority under section 226 must be confirmed by the Secretary of State. If the owner of the land which is the subject of a CPO objects to the order, the Secretary of State will appoint an independent inspector to conduct a public inquiry. The inspector's report and recommendation will be considered by the Secretary of State when a decision whether or not to confirm the CPO is taken. Where land has been acquired by a local authority for planning purposes, the authority may dispose of the land to secure the best use of that or other land, or to secure the construction of buildings needed for the proper planning of the area: section 233(1) .

9. Compulsory acquisition by public authorities for public purposes has always been in this country entirely a creature of statute: Rugby Joint Water Board v Shaw-Fox [1973] AC 202 , 214. The courts have been astute to impose a strict construction on statutes expropriating private property, and to ensure that rights of compulsory acquisition granted for a specified purpose may not be used for a different or collateral purpose: see Taggart, "Expropriation, Public Purpose and the Constitution", in The Golden Metwand and the Crooked Cord: Essays on Public Law in Honour of Sir William Wade , (1998) ed Forsyth & Hare, p 91.

*10. In **Prest** v Secretary of State for Wales (1982) 81 LGR 193 , 198 Lord Denning MR said:*

*"I regard it as a principle of our constitutional law that no citizen is to be deprived of his land by any public authority against his will, unless it is **expressly** authorised by Parliament and the public interest decisively so demands …"*

and Watkins LJ said, at pp 211–212:

"The taking of a person's land against his will is a serious invasion of his proprietary rights. The use of statutory authority for the destruction of those rights requires to be most carefully scrutinised. The courts must be vigilant to see to it that that authority is not abused. It must not be used unless it is clear that the Secretary of State has allowed those rights to be violated by a decision based upon the right legal principles, adequate evidence and proper consideration of the factor which sways his mind into confirmation of the order sought."

11. Recently, in the High Court of Australia, French CJ said in R & R Fazzolari Pty Ltd v Parramatta City Council [2009] HCA 12 , paras 40, 42, 43:

"40. Private property rights, although subject to compulsory acquisition by statute, have long been hedged about by the common law with protections. These protections are not absolute but take the form of interpretative approaches where statutes are said to affect such rights."

"42. The attribution by Blackstone, of caution to the legislature in exercising its power over private property, is reflected in what has been called ***a presumption, in the interpretation of statutes, against an intention to interfere with vested property rights*** *…*

"43. The terminology of 'presumption' is linked to that of 'legislative intention'. As a practical matter it means that, ***where a statute is capable of more than one construction, that construction will be chosen which interferes least with private property rights****."*

21.1.3 In summary, that is: (Emphasis added)

"… *where a statute is capable of more than one construction, that construction will be chosen which interferes least with private property rights".*

21.1.4 Without detracting from the case, the approach in paragraph 11(42) and (43) can be described as the application of "*contra proferentum*" in the public law sphere against the acquiring authority and at all stages and all statutes in relation to the circumstances of the compulsory purchase.

21.2 **The "draconian" nature of a compulsory purchase order**

21.2.1 In *De Rothschild v Secretary of State for Transport* (1988) 57 P&CR 330, the Court of Appeal considered a challenge to a compulsory purchase order over land belonging to the appellants for the construction of a by-pass in which the objector had advanced four alternative route for the proposal. The Secretary of State held a public inquiry and confirmed the order made. The Court of Appeal held that no "special rules" applied to a statutory challenge when it was being considered *by the Court*, that the ordinary principles of law applicable to claims for judicial review applied, and dismissed the challenge. However, in doing so, the Court of Appeal considered *Prest* and held:

… Though all the judgments in Prest contained observations regarding onus, I, for my part, read them as doing no more than giving a warning that in cases where a compulsory purchase order is under challenge, the draconian nature of the order will itself render it more vulnerable to successful challenge

on Wednesbury / Ashbridge grounds unless sufficient reasons are adduced affirmatively to justify it on its merits.

…[i]t has to be recognised that the compulsory purchase of land involves a serious invasion of the private proprietary rights of citizens. As Purchas L.J. described them in Chilton v. Telford Development Corporation , [2] the powers of compulsory purchase of an acquiring authority are of a draconian nature. The power to dispossess a citizen of his land against his will is clearly not one to be exercised lightly and without good and sufficient cause…

I have also already accepted that, given the draconian nature of such an order, no reasonable Secretary of State would be likely to confirm such an order in the absence of what he perceived to be a sufficient justification of his decision on its merits.

21.3 **The common law requirement in the compulsory acquisition sphere for the acquiring authority to show "both": a) "for the land; and" b) "the power to acquire it compulsorily".**

21.3.1 In *R v Secretary of State for the Environment, ex parte Leicester City Council* (1988) 55 P&CR 364, the High Court held that on a true construction of section 112(1)(a) of the Town and Country Planning Act 1971 , the section required that the land must be required and required the need for its acquisition by the local authority in order to secure its development. Consequently, the Secretary of State had not erred in law when he refused to confirm a compulsory purchase order on the grounds that where the local authority would not compulsorily acquire the land if the owners entered into an agreement with the authority to make financial contributions towards the construction of roads and sewers the land was not required to be compulsorily acquired by the local authority. In particular, the High Court held:

…Mr. Thomas invited me to treat the word "required" as indicating no more than that development, redevelopment or improvement was required. He submitted that there was no need for a compulsory purchase order to be required, let alone that compulsory acquisition was required. In my opinion such a construction is inconsistent with the plain words of the section. It

*could not stand with the phrase "and is required in order to." In my judgment the section requires that the land must be required, **and** requires the need for its acquisition by the local authority in order to secure its development. So much for the second sentence of paragraph 8 of the decision letter.*

… It seems to me, as it must have seemed to the Secretary of State, that it could not be said that the city council required the acquisition of the majority of the order land….

21.3.2 In *Sharkey v Secretary of State for the Environment* (1991) 62 P&CR 126, the High Court considered both *ex parte Leicester City Council* (1988) 55 P&CR 364, and the word "required" in section 112(1)(b) of the Town and Country Planning Act 1971. The High Court held that "required" meant that the land is *needed* for the accomplishment of one of the activities or purposes set out in the section. It is not enough that compulsory acquisition is *desirable*:

Mr. Sales' reply on behalf of the applicants is that the power given by section 112 of the Town and Country Planning Act 1971 is one which should be used as a last resort; that this was accepted by the Secretary of State in paragraph 6 of his decision letter where the Secretary of State says that he does not accept in its entirety the inspector's conclusion that the council has not satisfactorily shown that the only practical means of achieving the aim of putting the order land to a suitable rural use is by compulsory acquisition…

*[I]t emerges from the earlier passages in the judgment of McCullough J. that he considered that the word "required" meant more than simply the acquisition of the land being in the view of the local planning authority and the Secretary of State desirable and that what had to be demonstrated was a need on the part of the local authority both for the land **and** the power to acquire it compulsorily.*

… The second decision was that of McCullough J. in R. v. Secretary of State for the Environment, ex p. Leicester City Council where McCullough J. held that the Secretary of State had been right to refuse to authorise a compulsory purchase order made by the Leicester City Council under section 112(1)(a) of the 1971 Act on

the ground that the local authority had not shown that it required the land and the compulsory purchase order in order to secure the carrying out of the development contemplated.

… it emerges from the earlier passages in the judgment of McCullough J. that he considered that the word "required" meant more than simply the acquisition of the land being in the view of the local planning authority and the Secretary of State desirable and that what had to be demonstrated was a need on the part of the local authority both for the land and the power to acquire it compulsorily.

Although both those cases involve consideration of section 112(1)(a) , in my judgment the word "required" must have the same meaning in section 112(1)(a) and in section 112(1)(b) . Because of the nature of the power given to local authorities by section 112 , namely, to deprive the owner of his land against the owner's will, I prefer and adopt the stricter meaning of the word "required" suggested by the judgment of McCullough J. In my judgment the word means that the compulsory acquisition of the land is called for; it is a thing needed for the accomplishment of one of the activities or purposes set out in the section. However, I accept the dictum of Sir Douglas Frank, Q.C. to this extent that neither the local authority nor the Secretary of State have to go so far as to show the compulsory acquisition of the land is indispensable to the carrying out of the activity or the achieving of the necessary planning purpose. The local authority need not have tried to use all their other powers before resorting to compulsory purchase, provided there is evidence on which they and the Secretary of State can conclude that, without the use of compulsory purchase powers, the necessary planning purpose is unlikely to be achieved.

21.3.3 In *Sharkey v Secretary of State for the Environment* (1992) 63 P&CR 126, the Court of Appeal held: (Emphasis added)

In Company Developments (Property) Ltd. v. Secretary of State for the Environment and Salisbury District Council Sir Douglas Frank held that the word "required" in this context does not mean "essential," but only that the acquiring authority and the Secretary

of State consider it desirable to acquire the land to secure the carrying out of the activity in question.

In R. v. Secretary of State for the Environment, ex p. Leicester City Council McCullough J. considered that the word "required" meant more than mere desirability. Roch J., in this case, dealt with that argument as follows.

Because of the nature of the power given to local authorities by section 112 , namely, to deprive the owner of his land against that owner's will, I prefer and adopt the stricter meaning of the word "required" suggested by the judgment of McCullough J. In my judgment the word means that the compulsory acquisition of the land is called for; it is a thing needed for the accomplishment of one of the activities or purposes set out in the section. However, I accept the dictum of Sir Douglas Frank QC to this extent that neither the local authority nor the Secretary of State have to go so far as to show the compulsory acquisition of the land is indispensable to the carrying out of the activity or the achieving of the necessary planning purpose. The local authority need not have tried to use all their other powers before resorting to compulsory purchase, provided there is evidence on which they and the Secretary of State can conclude that, without the use of compulsory purchase powers, the necessary planning purpose is unlikely to be achieved…

I agree with Roch J. that the local authority do not have to go so far as to show that the compulsory purchase is indispensable to the carrying out of the activity or the achieving of the purpose; or, to use another similar expression, that it is essential. On the other hand, I do not find the word "desirable" satisfactory, because it could be mistaken for "convenient," which clearly, in my judgment, is not sufficient. I believe the word "required" here means "necessary in the circumstances of the case."

21.3.4 In particular, Lord Justic Scott held: (Emphasis added)

I agree with the judgment that McCowan L.J. has given and would add only one point.

Both before us and before Roch J. Mr. Sales submitted that the power of compulsory purchase given by section 112 of the 1971 Act

was a power which should be used only as "a last resort," as he put it. That may be so as between the various statutory powers available to the local authority under the Town and Country Planning Acts. If, however, the choice is between an exercise of the power of compulsory purchase and the alternative route by means of which a local authority may seek to enforce the planning law, namely High Court proceedings for a civil injunction, then I do not agree.

… Which of the two, compulsory purchase or High Court proceedings, is to be preferred may depend upon the facts of a particular case. Which ought to be the last resort may be a matter of debate in a number of cases. But in the circumstances with which the council was faced in the instant case, I do not regard an application for a High Court injunction, with the possibility of contempt proceedings following, as something which had to be tried before the compulsory purchase procedure could be invoked.

21.4 **The Correct Approach to Evidence in the consideration of a Compulsory Purchase Order.**

21.4.1 In *Prest v Secretary of State for Wales* (1983) 266 EG 527, the Court of Appeal considered circumstances where land was sought "urgently" by a water authority for the construction of a new sewage plant: (Emphasis added)

The reason for this imminent seizure is to make a new sewage works for the neighbouring towns and villages. It is urgent. The existing sewage works are grossly over-loaded. It is anticipated – and hoped – that the district may be developed for industrial use. So that more facilities are needed for the disposal of sewage.

21.4.2 The Court of Appeal held that when considering a compulsory purchase order the Secretary of State must consider all relevant information and should not limit himself to those matters alone which have been dealt with by the inspector: the onus of showing that a compulsory purchase order has been *properly made* is on the authority seeking it. What does "properly made" mean? In particular, the Court of Appeal held: (Emphasis added)

These findings give rise to several points of law.

The use of compulsory purchase powers

The first is fundamental. To what extent is the Secretary of State entitled to use compulsory powers to acquire the land of a private individual? It is clear that no Minister or public authority can acquire any land compulsorily except [sic. "if"] the power to do so be given by Parliament: and Parliament only grants it, or should only grant it, when it is necessary in the public interest. In any case, therefore, where the scales are evenly balanced — for or against compulsory acquisition w the decision — by whomsoever it is made — should come down against compulsory acquisition. I regard it as a principle of our constitutional law that no citizen is to be deprived of his land by any public authority against his will, unless it is expressly authorised by Parliament and the public interest decisively so demands: and then only on the condition that proper compensation is paid, see Attorney-General v. De Keyser's Royal Hotel Ltd. (1920) A.C. 508 . If there is any ***reasonable*** *doubt on the matter, the balance must be resolved in favour of the citizen. This principle was well applied by Mr. Justice Forbes in Brown v. Secretary of State for the Environment (1978) P. & C.R. 285 , where there were alternative sites available to the local authority, including one owned by them. He said (at page 291):*

"It seems to me that there is a very long and respectable tradition for the view that an authority that seeks to dispossess a citizen of his land must do so by showing that it is necessary … If, in fact, the acquiring authority is itself in possession of other suitable land other land that is wholly suitable for that purpose – then it seems to me that no reasonable Secretary of State faced with that fact could come to the conclusion that it was necessary for the authority to acquire other land compulsorily for precisely the same purpose."

21.4.3 "Reasonable" doubt does not mean "*Wednesbury*" reasonable doubt, as in, whether the acquiring authority considers there to be a "doubt". In law, "reasonable doubt" means the *existence of a doubt* based on the objective *evidence*. For an example of this legal concept in practice, and where a compulsory purchase was sought to be based on "draft" hydrological evidence.

21.4.4 An example of the application of that Principle is the refusal by the Secretary of State for Transport, at paragraph of 9 the HIGHWAYS ENGLAND (M27 SOUTHAMPTON JUNCTION 8 IMPROVEMENT SCHEME – M27 JUNCTION 8 AND WINDHOVER ROUNDABOUT) (SPECIAL ROAD) (SIDE ROADS) ORDER 2021 and the HIGHWAYS ENGLAND (M27 SOUTHAMPTON JUNCTION 8 IMPROVEMENT – M27 JUNCTION 8 & WINDHOVER ROUNDABOUT) (SPECIAL ROAD) COMPULSORY PURCHASE ORDER 2021 for want of decisive hydrological evidence to underpin the requirement to compulsory purchase Mr Keeling's private land adjacent to the M27, Junction 8 roundabout. In particular, that Secretaty of State evaluated that the evidence could not decisively show and instead founded a *reasonable doubt* ("may not be"), that the requirement for the land was not justified:

9. The Secretary of State considers that the evidence provided by Mr Keeling in relation to flood data modelling, shows that the long-term risks of flooding <u>may not be</u> sufficiently addressed and that National Highways have not sufficiently proved that the flood basin on Mr Keeling's land is necessary. This is highlighted at IR 8.2.4.46 to IR 8.2.4.50. The Secretary of State believes this is a convincing reason not to confirm the Orders at this time. 10.Having reflected on all aspects of the matter, the Secretary of State is satisfied there is a compelling case which would justify <u>not</u> confirming the CPO. Consequently, it would not be correct to confirm the SRO, as both Orders are intrinsically linked. As such, the Secretary of State agrees with the Inspector's conclusions and recommendations and has decided NOT to confirm 'The Highways England (M27 Southampton Junction 8 Improvement Scheme – M27 Junction 8 And Windhover Roundabout) (Special Road) (Side Roads) Order 2021' and 'The Highways England (M27 Southampton Junction 8 Improvement – M27 Junction 8 & Windhover Roundabout) (Special Road) Compulsory Purchase Order 2021'.

11. In making this decision, the Secretary of State has relied on the information that all parties have provided, that contained in the Orders, plans, diagrams and any statements or correspondence, as being factually correct.

21.4.5 In *R(on the application of Sainsbury's Supermarkets Ltd) Wolverhampton City Council* [2011] 1 AC 437, the Supreme Court affirmed *Prest v Secretary of State for Wales.* Consequently, *Prest* remains today in 2025 good law affirmed at the highest level.

21.5 **The intended use of Compulsory Purchase Powers as a "Last Resort"**

21.5.1 In Saravanamthu v Secretary of State for Communities, Housing and Local Government [2025] EWHC 2132 (Admin), the High Court held:

155. …There should be evidence of reasonable steps being taken with a view to acquiring the land required for the scheme underlying compulsory purchase by agreement. Nevertheless, in order to maintain the momentum of the scheme, it may be appropriate to take steps to secure compulsory purchase powers whilst also pursuing negotiations to acquire the land and rights needed for the scheme by agreement.

156. It is important to have well in mind why these considerations are relevant to the decision whether to confirm a compulsory purchase order. The acquiring authority is expected to advance a compelling case in the public interest for confirmation of the order. Compulsory purchase is intended as a last resort. ***Unless*** *the acquiring authority has engaged in* ***meaningful negotiations*** *with land owners and rights owners whose property is needed to achieve the purposes for which the order is made,* ***it will not be possible*** *(at least in the majority of cases)* ***for the confirming authority*** *to determine whether resort to compulsory acquisition* ***might*** *have been avoided. In the absence of evidence of reasonable efforts to acquire the requisite land and rights by agreement, it is unlikely to be open to the confirming authority safely to conclude that a compelling case for compulsory acquisition has been established.*

157. However, what is required in order to demonstrate that the acquiring authority has at least attempted to engage in and take forward such meaningful negotiations, and has made reasonable efforts to acquire the land and rights required for the scheme by agreement, will vary from case to case. Moreover, the judgment whether the action taken by the acquiring authority fulfils those

policy requirements is primarily for the confirming authority, in this case the inspector, subject only to statutory review by this court on Wednesbury principles.

158. It is vital also to have well in mind that the policy of the CPO Guidance is to ***require*** *the acquiring authority to* ***attempt and take forward meaningful*** *negotiations* ***and make*** *reasonable efforts to acquire by agreement. It is not to insist on those negotiations and efforts achieve a successful outcome. Ex hypothesi, there will be cases in which the acquiring authority will need to resort to compulsory purchase because the parties have failed to reach an agreement for sale or possession of the requisite land or rights which is mutually acceptable, despite the meaningful and reasonable efforts of the acquiring authority to secure such an agreement….*

22. **STATUTORY FRAMEWORK REQUIREMENTS**

ELECTRICITY ACT 1989

22.1 The Electricity Act 1989 regulates the provision of electricity.

22.2 Within Part 1 of the Act, by section 3A: (Bold and underlined emphasis added)

1) The principal objective of the Secretary of State and the Gas and Electricity Markets Authority (in this Act referred to as "the Authority") in carrying out their respective functions under this Part is to protect the interests of existing and future consumers in relation to electricity conveyed by distribution systems ***or*** *transmission systems…*

1C) Before deciding to carry out functions under this Part in a particular manner with a view to promoting competition as mentioned in subsection (1B), the Secretary of State or the Authority shall consider—

a) to what extent the interests referred to in subsection (1) of consumers would be protected by that manner of carrying out those functions; and

b) whether there is any other manner (whether or not it would promote competition as mentioned in subsection (1B)) in which the Secretary of State or the Authority (as the case may be) could carry out those functions which would better protect those interests.

2) *In performing the duties under subsections (1B) and (1C), the Secretary of State or the Authority shall have regard to –*

a) *the need to secure that all reasonable demands for electricity are met;*

b) *the need to secure that licence holders are able to finance the activities which are the subject of obligations imposed by or under this Part, the Utilities Act 2000, Part 2 or 3 of the Energy Act 2004, Part 2 or 5 of the Energy Act 2008 or section 4, Part 2, sections 26 to 29 of the Energy Act 2010, Part 2 of the Energy Act 2013, the Nuclear Energy (Financing) Act 2022 or Chapter 1 of Part 2, Chapters 2 and 3 of Part 4 and sections 245 to 247 of the Energy Act 2023;*

c) *the need to contribute to the achievement of sustainable development.*

3) *…*

8) *In this Part, unless the context otherwise requires– …*

"licence" means a licence under section 6 and "licence holder" shall be construed accordingly.

22.3 (As amended from 1st October 2024) by section 4: (Emphasis added)

1) ***A person who*** –

a) *generates electricity for the purpose of giving a supply to any premises or* ***enabling*** *a supply to be so given;*

b) ***participates*** *in the transmission of electricity* ***for that purpose****;*

bb) ***distributes*** *electricity* ***for that purpose****;*

c) *supplies electricity to any premises;*

ca) *co-ordinates and directs the flow of electricity onto and over transmission systems by means of which the transmission of electricity takes place;*

d) *participates in the operation of an electricity interconnector;*

e) provides a smart meter communication service; or

f) performs the function of code manager in relation to a designated electricity licence document (see further subsections (3H) and (3I)),

*shall be guilty of an offence **unless** he is authorised to do so by a licence.*

2) A person guilty of an offence under this section shall be liable—

a) on summary conviction, to a fine not exceeding the statutory maximum;

b) on conviction on indictment, to a fine.

3) No proceedings shall be instituted in England and Wales in respect of an offence under this section except by or on behalf of the Secretary of State or the Authority…

3A) In subsection (1)(b) above, the reference to a person who participates in the transmission of electricity is to a person who—

*b) **makes available for use for the purposes of a transmission system** by means of which the transmission of electricity takes place **anything which forms part of it**…*

4) In this Part, unless the context otherwise requires—

"distribute", in relation to electricity, means distribute by means of a distribution system, that is to say, a system which consists (wholly or mainly) of low voltage lines and electrical plant and is used for conveying electricity to any premises or to any other distribution system;

"generate", in relation to electricity, means generate at a relevant place;

"supply", in relation to electricity, means its supply to premises in cases where—

a) it is conveyed to the premises wholly or partly by means of a distribution system, or

*b) (**without being so conveyed**) it is supplied to the premises from a substation to which it has been conveyed by means of a transmission system,*

but does not include its supply to premises occupied by a licence holder for the purpose of carrying on activities which he is authorised by his licence to carry on;

"transmission", in relation to electricity, means transmission by means of a transmission system;

"transmission system" means a system which—

a) consists (wholly or mainly) of high voltage lines and electrical plant, and

b) is used for conveying electricity from a generating station to a substation, from one generating station to another or from one substation to another…

5) In this section -

"relevant place" means a place in Great Britain, in the territorial sea adjacent to Great Britain or in a Renewable Energy Zone; and
"system" means a system the whole or a part of which is at a relevant place; …

22.4 By section 5:

1) The Secretary of State may by order grant exemption from [paragraph (a), (b), (bb), (c), (ca), (d), (e) or (f) of section 4(1):

a) either to a person or to persons of a class;

b) either generally or to such extent as may be specified in the order; and

c) either unconditionally or subject to such conditions as may be so specified.

2) Before making an order under subsection (1) the Secretary of State shall give notice –

a) stating that he proposes to make such an order and setting out the terms of the proposed order;

b) stating the reasons why he proposes to make the order in the terms proposed; and

c) specifying the time (not being less than 28 days from the date of publication of the notice) within which representations with respect to the proposals may be made,

and shall consider any representations which are duly made in respect of the proposals and not withdrawn.

3) …

4) Notice of an exemption granted to a person shall be given–

a) by serving a copy of the exemption on him; and

b) by publishing the exemption in such manner as the Secretary of State considers appropriate for bringing it to the attention of other persons who may be affected by it.

5) …

6) …

7) Conditions subject to which an exemption is granted may (in particular) require any person carrying on any activity in pursuance of the exemption–

a) to comply with any direction given by the Secretary of State or the Authority as to such matters as are specified in the exemption or are of a description so specified;

b) except in so far as the Secretary of State or the Authority consents to his doing or not doing them, not to do or to do such things as are specified in the exemption or are of a description so specified; and

c) to refer for determination by the Secretary of State or the Authority such questions arising under the exemption as are specified in the exemption or are of a description so specified.

8) The Secretary of State may by order revoke an order by which an exemption was granted to a person or vary an order by which more than one exemption was so granted so as to terminate any of the exemptions–

a) at the person's request;

b) in accordance with any provision of the order by which the exemption was granted; or

c) if it appears to the Secretary of State inappropriate that the exemption should continue to have effect…

22.5 By section 6: (Emphasis added)

1) The Authority <u>may grant any of the following licences</u> –

a) a licence authorising a person to generate electricity <u>for the purpose of giving a supply to any premises or enabling a supply to be so given</u> ("a generation licence");

b) <u>a licence authorising a person to participate in the transmission of electricity for that purpose ("a transmission licence</u>");

c) *a licence authorising a person to distribute electricity for that purpose ("a distribution licence");*

d) *a licence authorising a person to supply electricity to premises ("a supply licence");*

da) *subject to subsections (1ZB) and (2ZA), a licence authorising a person to co-ordinate and direct the flow of electricity onto and over transmission systems by means of which the transmission of electricity takes place ("an electricity system operator licence");*

e) *a licence authorising a person to participate in the operation of an electricity interconnector ('an interconnector licence');*

f) *subject to subsection (1C), a licence authorising a person to provide a smart meter communication service ("a smart meter communication licence"); or*

g) *a licence authorising a person to perform the function of code manager in relation to a designated electricity licence document ("a code manager licence").*

1ZA) Subject to subsection (2ZA), the Secretary of State may grant an electricity system operator licence.

1ZB) The first electricity system operator licence may only be granted by the Secretary of State.

1ZC) For the purposes of this section, references to the grant of an electricity system operator licence include the giving of a direction under section 167 of the Energy Act 2023 in respect of a transmission licence.

2) The same person may not be the holder of both a distribution licence and –

a) *a generation licence; or*

b) *a supply licence.*

2ZA) A person may not be granted an electricity system operator licence unless the same person—

a) *already holds a licence granted under section 7AA of the Gas Act 1986, or*

b) *is granted such a licence at the same time as the person is granted an electricity system operator licence.*

2A) The same person may not be the holder of an interconnector licence and the holder of a licence falling within any of paragraphs (a) to (da) of subsection (1)…

6) A distribution licence may authorise the holder to distribute electricity in any area, or only in an area specified in the licence…

6A) A transmission licence may authorise the holder to participate in the transmission of electricity in any area, or only in an area specified in the licence…

8) A licence shall, unless previously revoked in accordance with any term of the licence and subject to subsection (8A), continue in force for such period as may be specified in or determined by or under the licence.

9) In this Part –

"electricity distributor" means any person who is authorised by a distribution licence to distribute electricity except where he is acting otherwise than for purposes connected with the carrying on of activities authorised by the licence;

"electricity generator" means any person who is authorised by a generation licence to generate electricity except where that person is acting otherwise than for purposes connected with the carrying on of activities authorised by the licence;

"electricity supplier" means any person who is authorised by a supply licence to supply electricity except where he is acting otherwise than for purposes connected with the carrying on of activities authorised by the licence.

10) In this section –

"designated electricity licence document" has the same meaning as in section 4; …

"premises" has the same meaning as in section 4.

22.6 By sections 6A and 6B there is a procedure for applications for any licence. By section 6A(2): "The application shall be made in such form and manner, and shall contain, or be accompanied by, such information and documents and such fee (if any), as may be prescribed."

22.7 By section 9: (Emphasis added)

1) It shall be the duty of an electricity distributor –

a) to develop and maintain an efficient, co-ordinated and economical system of electricity distribution;

b) to facilitate competition in the supply and generation of electricity.

2) It shall be the duty of the holder of a licence authorising him to participate in the transmission of electricity —

a) to develop and maintain an efficient, co-ordinated and economical system of electricity transmission; and

b) to facilitate competition in the supply and generation of electricity.

2A) Subsection (2)(a) shall not have effect to require the holder of a transmission licence which is subject to a condition of the kind mentioned in section 7(2A)(a) to carry on an activity which he would be authorised by the licence to carry on apart from the condition. …

22.8 By section 10: (Emphasis added)

1) Subject to subsection (2) below, Schedule 3 to this Act (which provides for the compulsory acquisition of land) and Schedule 4 to this Act (which confers other powers and makes other provision) shall have effect—

a) in relation to the holder of a transmission licence or of an electricity system operator licence; and

b) to the extent that his licence so provides, in relation to an electricity distributor or any other licence holder;

and references in those Schedules to a licence holder shall be construed accordingly.

2) Where any provision of either of the Schedules mentioned in subsection (1) above is applied to a licence holder by his licence, it shall have effect subject to such restrictions, exceptions and conditions as may be included in the licence for the purpose of qualifying that provision as so applied or any power or right conferred by or under it…

22.9 By Schedule 3 to the Electricity Act 1989, paragraph 1 provides: (Emphasis added)

1) Subject to paragraph 2 below, the Secretary of State may authorise a licence holder to purchase compulsorily any land required for any

purpose connected with the carrying on of the activities which he is authorised by his licence to carry on.

2) In this paragraph and paragraph 2 below "land" includes any right over land (other than, in Scotland, a right to abstract, divert and use water); and the power of the Secretary of State under this paragraph includes power to authorise the acquisition of rights over land by creating new rights as well as acquiring existing ones.

22.10 By paragraph 2:

1) No order shall be made under paragraph 1 above authorising the compulsory purchase of land belonging to another licence holder except with the consent of the Authority.

2) The Authority shall not give their consent under this paragraph if –

a) the land is being used by the licence holder to whom it belongs for the purposes of an installation necessary for the carrying on of the activities which he is authorised by his licence to carry on; or

b) it appears to the Authority that the land will be so used and that the use will commence, or any necessary planning permission or consent under section 36 or 37 of this Act will be applied for, within the period of five years beginning with the date of the application for his consent.

5) In this paragraph –

"the Planning Act" means the Town and Country Planning Act 1990 …

"planning permission" means a planning permission granted under Part III of the Planning Act.

22.11 By paragraph 3, provision is made for common, open space or a fuel or field garden allotment; and by (2): "Where for any purpose a licence holder has acquired, or proposes to acquire, any land to which this paragraph applies, or any right over any such land, and other land is required for the purpose of being given in exchange for the land or right in question, the Secretary of State may authorise the licence holder to purchase that other land compulsorily, or he may acquire it by agreement."

22.12 By paragraph 4:

Where a licence holder has acquired any land by virtue of paragraph 1 above, he shall not dispose of that land or of any interest in or right over it except with the consent of the Authority.

22.13 By Schedule 3 to the Electricity Act 1989, paragraphs 1-X include 6 that provides: (Emphasis added)

1) This paragraph applies where—

a) for any purpose connected with the carrying on of the activities which he is authorised by his licence to carry on, it is necessary or expedient to obtain the right to install and keep installed an electric line on, under or over any land; and

b) the owner or occupier of the land, having been given a notice requiring him to give the necessary wayleave within a period (not being less than 21 days) specified in the notice—

i) has failed to give the wayleave before the end of that period; or

ii) has given the wayleave subject to terms and conditions to which the licence holder objects;

and in this paragraph as it so applies "the necessary wayleave" means consent for the licence holder to install and keep installed the electric line on, under or over the land and to have access to the land for the purpose of inspecting, maintaining, adjusting, repairing, altering, replacing or removing the electric line.

2) This paragraph also applies where—

a) for any purpose connected with the carrying on of the activities which he is authorised by his licence to carry on, it is necessary or expedient for a licence holder to keep an electric line installed on, under or over any land; and

b) the owner or occupier of the land has given notice to the licence holder under paragraph 8(2) below requiring him to remove the electric line;

and in this paragraph as it so applies "the necessary wayleave" means consent for the licence holder to keep the electric line installed on, under or over the land and to have access to the land for the purpose of inspecting, maintaining, adjusting, repairing, altering, replacing or removing the electric line.

3) Subject to sub-paragraphs (4) and (5) below, the Secretary of State may, on the application of the licence holder, himself grant the necessary wayleave subject to such terms and conditions as he thinks fit; and a necessary wayleave so granted shall, unless previously terminated in

accordance with a term contained in the wayleave, continue in force for such period as may be specified in the wayleave.

4) …

5) Before granting the necessary wayleave, the Secretary of State shall afford—

a) the occupier of the land; and

b) where the occupier is not also the owner of the land, the owner, an opportunity of being heard by a person appointed by the Secretary of State.

6) A necessary wayleave granted under this paragraph—

a) shall not be subject to the provisions of any enactment requiring the registration of interests in, charges over or other obligations affecting land; but

b) shall bind any person who is at any time the owner or occupier of the land.

7) …

7A) A necessary wayleave granted to a licence holder under this paragraph may be transferred to another licence holder.

22.14 By section 37:

1) Subject to subsections (1A) to (2A) below, an electric line shall not be installed or kept installed above ground except in accordance with a consent granted by the Secretary of State.

1A) So far as relating to the installation of an electric line, subsection (1) is subject to section 33(1) of the Planning Act 2008 (exclusion of requirement for other consents for development for which development consent required).

1B) So far as relating to keeping an electric line installed, subsection (1) does not apply if keeping the line installed is authorised by an order granting development consent under the Planning Act 2008…

4) Any person who without reasonable excuse contravenes the provisions of this section shall be liable on summary conviction to a fine not exceeding level 3 on the standard scale.

22.15 By section 38:

The provisions of Schedule 9 to this Act (which relate to the preservation of amenity and fisheries) shall have effect.

22.16 By Schedule 9, provision is made including as follows:

1) In formulating any relevant proposals, a licence holder or a person authorised by exemption to generate, distribute, supply or participate in the transmission of electricity –

a) shall have regard to the desirability of preserving natural beauty, of conserving flora, fauna and geological or physiographical features of special interest and of protecting sites, buildings and objects of architectural, historic or archaeological interest; and

b) shall do what he reasonably can to mitigate any effect which the proposals would have on the natural beauty of the countryside or on any such flora, fauna, features, sites, buildings or objects…

2) In considering any relevant proposals for which its consent is required under section 36 or 37 of this Act, the appropriate authority shall have regard to—

a) the desirability of the matters mentioned in paragraph (a) of sub-paragraph (1) above;

b) the extent to which the person by whom the proposals were formulated has complied with his duty under paragraph (b) of that sub-paragraph…

22.17 By section 111:

1) In this Act, unless the context otherwise requires –

"the Authority" means the Gas and Electricity Markets Authority; …

"contravention", in relation to any direction, condition, requirement, regulation or order, includes any failure to comply with it and cognate expressions shall be construed accordingly;

2) For the purposes of this Act any class or description may be framed by reference to any matters or circumstances whatever.

23. *TOWN AND COUNTRY PLANNING ACT 1990*

23.1 The Town and Country Planning Act 1990 regulates the development of land. By section 55:

1) Subject to the following provisions of this section, in this Act, except where the context otherwise requires, "development," means the

carrying out of building, engineering, mining or other operations in, on, over or under land, or the making of any material change in the use of any buildings or other land…

23.2 By section 57:

1) Subject to the following provisions of this section, planning permission is required for the carrying out of any development of land.

23.3 By sections 59 and 60, the Secretary of State is required by order (in this Act referred to as a *"development order"*) provide for the granting of planning permission.

23.4 By section 336: (Emphasis added)

1) In this Act, except in so far as the context otherwise requires and subject to the following provisions of this section and to any transitional provision made by the Planning (Consequential Provisions) Act 1990— …

"building" includes any structure or erection, and any part of a building, as so defined, but does not include plant or machinery comprised in a building; …

"compulsory acquisition" does not include the vesting in a person by an Act of Parliament of property previously vested in some other person; …

"development consent" means development consent under the Planning Act 2008;…

"land" means any corporeal hereditament, including a building, and, in relation to the acquisition of land under Part IX, includes any interest in or right over land; ….

24. *TOWN AN COUNTRY PLANNING (GENERAL PERMITTED DEVELOPMENT)(ENGLAND) ORDER 2015/596*

24.1 The Town and Country General (Permitted Development)(England) Order 2015/596 provides for planning permission on the following terms.

24.2 By Article 3:

1) Subject to the provisions of this Order and regulations 75 to 78 of the Conservation of Habitats and Species Regulations 2017 (general development orders), planning permission is hereby granted for the classes of development described as permitted development in Schedule 2.

2) Any permission granted by paragraph (1) is subject to any relevant exception, limitation or condition specified in Schedule 2…

24.3 Class B of Part 15 is not expressed to be subject to prior approval.

24.4 Within Schedule 2, Part 15 provides for "Power related development".

24.5 Within Class B, electricity undertakings, paragraph B: (Emphasis added)

B. ***Development by statutory undertakers for the generation, transmission, distribution or supply of electricity for the purposes of their undertaking consisting of—***

a) ***the installation or replacement in, on, over or under land of an electric line and the construction of shafts and tunnels and the installation or replacement of feeder or service pillars or transforming or switching stations or chambers reasonably necessary in connection with an electric line;***

b) ***the installation or replacement of any electronic communications line which connects any part of an electric line to any electrical plant or building, and the installation or replacement of any support for any such line;***

c) ***the sinking of boreholes to ascertain the nature of the subsoil and the installation of any plant or machinery reasonably necessary in connection with such boreholes;***

d) ***the extension or alteration of buildings on operational land;***

e) ***the erection on operational land of the undertaking of a building solely for the protection of plant or machinery;***

f) ***any other development carried out in, on, over or under the operational land of the undertaking.***

24.6 Class B B.1. provides:

Development is not permitted by Class B if—

a) in the case of any Class B(a) development—

i) it would consist of or include the installation or replacement of an electric line to which section 37(1) of the Electricity Act 1989 (consent required for overhead lines) applies; …

b) in the case of any Class B(b) development— …

ii) the height of any support would exceed 15 metres; …

c) in the case of any Class B(d) development—

d) in the case of any Class B(e) development, the building would exceed 15 metres in height, or

e) in the case of any Class B(f) development, it would consist of or include— …

24.7 Class B B.2. includes:

Development is permitted by Class B subject to the following conditions—

a) in the case of any Class B(a) development consisting of or including the replacement of an existing electric line, compliance with any conditions contained in a planning permission relating to the height, design or position of the existing electric line which are capable of being applied to the replacement line;

b) in the case of any Class B(a) development consisting of or including the installation of a temporary electric line providing a diversion for an existing electric line, on the ending of the diversion or at the end of a period of 6 months from the completion of the installation (whichever is the sooner) the temporary electric line is removed and the land on which any operations have been carried out to install that line is restored as soon as reasonably practicable to its condition before the installation took place; …

c) …

d) in the case of any Class B(e) development, approval of details of the design and external appearance of the buildings must be obtained, before development is begun, from— …

iii) in any other case, the district planning authority.

24.8 Class B B.3. provides:

For the purposes of Class B(a), "electric line" has the meaning given by section 64(1) of the Electricity Act 1989 (interpretation etc. of Part 1).

24.9 Class B B.5. provides: (Emphasis added)

For the purposes of Class B(d), (e) and (f), the land of the holder of a licence under section 6(1) of the Electricity Act 1989 (licensing of supply etc.) is treated as operational land if it would be operational land within section 263 of the Act (meaning of "operational land") if such licence holders were statutory undertakers for the purpose of that section.

25. PLANNING ACT 2008

Planning Act 2008 - Definitions

25.1 The Planning Act 2008 regulates the development of land for "nationally significant infrastructure projects" ("NSIPs"). By section 235: (Emphasis added)

1) In this Act – …

"building" has the meaning given by section 336(1) of TCPA 1990; …

"development" has the meaning given by section 32;

"development consent" has the meaning given by section 31;…

"electric line" has the same meaning as in Part 1 of the Electricity Act 1989 (c. 29) (see section 64(1) of that Act); …

"land" includes buildings and monuments, and land covered with water, and in relation to Part 7 must be read in accordance with section 159;…

"nationally significant infrastructure project" has the meaning given by Part 3;

"national policy statement" has the meaning given by section 5(2); …

2) A reference in this Act to a right over land includes a reference to a right to do, or to place and maintain, anything in, on or under land or in the air-space above its surface.

25.2 By section 159, Interpretation: land and rights over land: (Emphasis added)

1) This section applies for the purposes of this Part [7].

2) "Land" includes any interest in or right over land.

3) Acquiring a right over land includes acquiring it by the creation of a new right as well as by the acquisition of an existing one.

Planning Act 2008 - National Policy Statements

25.3 Part 2 provides for National Policy Statements. By section 5: (Emphasis added)

1) The Secretary of State may designate a statement as a national policy statement for the purposes of this Act if the statement—

a) is issued by the Secretary of State, and

b) sets out national policy in relation to one or more specified descriptions of development.

2) In this Act "national policy statement" means a statement designated under subsection (1) as a national policy statement for the purposes of this Act…

3) …

4) A statement may be designated as a national policy statement for the purposes of this Act only if the consultation and publicity requirements set out in section 7, and the parliamentary requirements set out in section 9 , have been complied with in relation to it –

a) the consideration period for the statement has expired without the House of Commons resolving during that period that the statement should not be proceeded with …

25.4 Section 13 provides that a court may entertain proceedings for questioning a national policy statement or anything done, or omitted to be done, by the Secretary of State in the course of preparing such a statement only if a challenge by means of a claim for judicial review is brought against an NPS within 6 weeks of the date of designation of the NPS by Parliament.

Planning Act 2008 – Scope of Nationally Significant Infrastructure Projects

25.5 Part 3 provides for nationally significant infrastructure projects. By section 14: (Emphasis added)

1) In this Act "nationally significant infrastructure project" means a project which consists of any of the following— …

b) the installation of an electric line above ground; …

25.6 By section 16: (Emphasis added)

1) The installation of an electric line above ground is within section 14(1)(b) only if (when installed) the electric line will be—

a) wholly in England …

2) …

3) The installation of an electric line above ground is not within section 14(1)(b)—

a) if the nominal voltage of the line is expected to be less than 132 kilovolts,

*aa) if the length of the line (when installed) will be **less than** two kilometres,*

ab) if -

i) the line will replace an existing line,

ii) the nominal voltage of the line is expected to be greater than the nominal voltage of the existing line (but see subsection (3A)),

iii) the height above the surface of the ground of any support for the line will not exceed the height of the highest existing support or support which is being replaced by more than 10 per cent, and

iv) where the line is to be installed in a different position from the existing line, the distance between any new support and the existing line will not exceed 60 metres and the existing line will be removed within twelve months from the date on which the installation of the line which replaces it is complete,

b) to the extent that (when installed) the line will be within premises in the occupation or control of the person responsible for its installation, or

c) if section 37(1) of the Electricity Act 1989 (consent required for overhead lines) does not apply to it by virtue of the Overhead Lines (Exemption) (England and Wales) Regulations 2009 (S.I. 2009/640), as amended by the Overhead Lines (Exempt Installations) (Consequential Provisions) Order 2010…

25.7 By Article 3, Exemption from section 37(1) of the Act:

1) Section 37(1) of the Act shall not apply in relation to—

a) the installation or keeping installed of an electric line which—

i) connects an electric line installed below ground with apparatus mounted on a pole or structure; and

ii) is attached to the pole or structure throughout its length except where it passes through a fuse or other apparatus;

b) the installation or keeping installed of a wire or cable (including its casing or coating) which forms part of electronic communications apparatus (within the meaning given to that expression in the electronic communications code set out in Schedule 3A to the Communications Act 2003) and which is supported, or carried by, or suspended from the supports for an existing line;

c) the installation or keeping installed, subject to the provisions of regulation 5, for a period not exceeding six months of an electric line (no part of which is within a European site or an SSSI) which connects two points on an existing line which are no further apart than the maximum distance so as to provide a diversion for the existing line;

d) the installation or keeping installed of an electric line attached to a building (other than a scheduled monument, listed building or building in a conservation area) where the building in question crosses a road, railway or watercourse and its principal purpose is not the support of the electric line;

e) the installation or keeping installed, subject to the limitations in regulation 4 and the provisions of regulation 5, of an electric line (no part of which is within a European site or an SSSI) which replaces an existing line whether or not it is installed in the same position as the existing line in question; or

f) the installation or keeping installed, subject to the limitations in regulation 4 and the provisions of regulation 5, of one or more additional poles to support an existing line.)

Planning Act 2008 – Requirement for Development Consent

25.8 Part 4 of the Planning Act 2008 provides for the Requirement for Development Consent.

25.9 By section 31: (Emphasis added)

Consent under this Act ("development consent") is required for development to the extent that the development is or forms part of a nationally significant infrastructure project.

25.10 By section 32:

1) In this Act (except in Part 11) "development" has the same meaning as it has in TCPA 1990. This is subject to subsections (2) and (3)….

25.11 Within Part 6, provision is made for the Deciding Applications for Order Granting Development Consent.

25.12 Within Chapter 5, Decisions on Applications, by section 103:

1) The Secretary of State has the function of deciding an application for an order granting development consent.

25.13 By section 104: (Emphasis added)

1) This section applies in relation to an application for an order granting development consent if a national policy statement has effect in relation to development of the description to which the application relates.

2) In deciding the application the Secretary of State must have regard to –

a) any national policy statement which has effect in relation to development of the description to which the application relates (a "relevant national policy statement"), …

b) …

c) …

d) any other matters which the Secretary of State thinks are both important and relevant to the Secretary of State's decision.

3) The Secretary of State must decide the application in accordance with any relevant national policy statement, except to the extent that one or more of subsections (4) to (8) applies.

4) …

5) This subsection applies if the Secretary of State is satisfied that deciding the application in accordance with any relevant national policy statement would lead to the Secretary of State being in breach of any duty imposed on the Secretary of State by or under any enactment.

6) This subsection applies if the Secretary of State is satisfied that deciding the application in accordance with any relevant national policy statement would be unlawful by virtue of any enactment.

7) This subsection applies if the Secretary of State is satisfied that the adverse impact of the proposed development would outweigh its benefits.

8) This subsection applies if the Secretary of State is satisfied that any condition prescribed for deciding an application otherwise than in accordance with a national policy statement is met…

25.14 By section 105:

1) This section applies in relation to an application for an order granting development consent if section 104 does not apply in relation to the application.

2) In deciding the application the Secretary of State must have regard to—

a) any local impact report (within the meaning given by section 60(3)) submitted to the Secretary of State before the deadline specified in a notice under section 60(2),

b) any matters prescribed in relation to development of the description to which the application relates, and

c) any other matters which the Secretary of State thinks are both important and relevant to the Secretary of State's decision.

25.15 By section 114:

1) When the Secretary of State has decided an application for an order granting development consent, the Secretary of State must either—

a) make an order granting development consent, or

b) refuse development consent…

2) The Secretary of State may by regulations make provision regulating the procedure to be followed if the Secretary of State proposes to make an order granting development consent on terms which are materially different from those proposed in the application.

Planning Act 2008 – Associated Development Provisions

25.16 Section 115 makes provision for "Development for which development consent may be granted": (Emphasis added)

1) Development consent may be granted for development which is—

a) development for which development consent is required, or

b) associated development, or

c) related housing development.

2) "Associated development" means development which—

*a) is associated with the development within subsection (1)(a) (**or any part of it**),*

b) …, and

c) is within subsection (3), (4) or (4A).

3) Development is within this subsection if it is to be carried out wholly in one or more of the following areas—

a) England;

b) …

c) in the case of development in the field of energy, a Renewable Energy Zone … .

4) …

*4A) **Development** is within **this** subsection if the development within subsection (1)(a) with which it is **associated is**—*

a) the construction or extension of a generating station … or

*b) the installation of **an electric line** that is or (when installed) is expected to be within section 14(1)(b)…*

25.17 The Shorter Oxford English Dictionary (6th Edition) defines "associated" to mean: "joined in… function…; concomitant; sharing in responsibility, function … but with a secondary or subordinate status".

Planning Act 2008 – Compulsory Purchase Provisions

25.18 Within Part 7, Orders Granting Development Consent, provision is made for the Content of Orders, for Compulsory Acquisition, and for Statutory Undertakers.

25.19 Within Chapter 1, by section 120:

1) An order granting development consent may impose requirements in connection with the development for which consent is granted.

2) The requirements may in particular include —

a) requirements corresponding to conditions which could have been imposed on the grant of any permission, consent or authorisation, or the giving of any notice, which (but for section 33(1)) would have been required for the development;

b) requirements to obtain the approval of the Secretary of State or any other person, so far as not within paragraph (a).

3) An order granting development consent may make provision relating to, or to matters ancillary to, the development for which consent is granted.

4) The provision that may be made under subsection (3) includes in particular provision for or relating to any of the matters listed in Part 1 of Schedule 5.

5) An order granting development consent may -

a) apply, modify or exclude a statutory provision which relates to any matter for which provision may be made in the order;

b) make such amendments, repeals or revocations of statutory provisions of local application as appear to the Secretary of State to be necessary or expedient in consequence of a provision of the order or in connection with the order;

c) include any provision that appears to the Secretary of State to be necessary or expedient for giving full effect to any other provision of the order;

d) include incidental, consequential, supplementary, transitional or transitory provisions and savings.

6) In subsection (5) "statutory provision" means a provision of an Act or of an instrument made under an Act.

7) Subsections (3) to (6) are subject to subsection (8) and the following provisions of this Chapter…

25.20 By section 122, Purpose for which compulsory acquisition may be authorised:

1) An order granting development consent may include provision authorising the compulsory acquisition of land only if the Secretary of State is satisfied that the conditions in subsections (2) and (3) are met.

2) The condition is that the land—

a) is required for the development to which the development consent relates,

b) is required to facilitate or is incidental to that development, or

c) is replacement land which is to be given in exchange for the order land under section 131 or 132.

3) The condition is that there is a compelling case in the public interest for the land to be acquired compulsorily.

25.21 By section 127, Statutory undertakers' land: (Emphasis added)

1) This section applies in relation to land ("statutory undertakers' land") if—

a) the land has been acquired by statutory undertakers for the purposes of their undertaking,

b) a representation has been made about an application for an order granting development consent before the completion of the examination of the application, and the representation has not been withdrawn, and

c) as a result of the representation the Secretary of State is satisfied that—

i) the land is used for the purposes of carrying on the statutory undertakers' undertaking, or

ii) an interest in the land is held for those purposes.

2) An order granting development consent may include provision authorising the compulsory acquisition of statutory undertakers' land only to the extent that the Secretary of State is satisfied of the matters set out in subsection (3).

3) The matters are that the nature and situation of the land are such that—

a) it can be purchased and not replaced without serious detriment to the carrying on of the undertaking, or

b) if purchased it can be replaced by other land belonging to, or available for acquisition by, the undertakers without serious detriment to the carrying on of the undertaking.

4) Subsections (2) and (3) do not apply in a case within subsection (5).

5) An order granting development consent may include provision authorising the compulsory acquisition of a right over statutory undertakers' land by the creation of a new right over land only to the extent that the Secretary of State is satisfied of the matters set out in subsection (6).

6) The matters are that the nature and situation of the land are such that—

a) the right can be purchased without serious detriment to the carrying on of the undertaking, or

b) any detriment to the carrying on of the undertaking, in consequence of the acquisition of the right, can be made good by the undertakers by the use of other land belonging to or available for acquisition by them.

8) In this section—

"statutory undertakers" has the meaning given by section 8 of the Acquisition of Land Act 1981 (c. 67) and also includes the undertakers—

a) which are deemed to be statutory undertakers for the purposes of that Act, by virtue of another enactment;

b) which are statutory undertakers for the purposes of section 16(1) and (2) of that Act (see section 16(3) of that Act). …

Planning Act 2008 – Changes to Development Consent Orders

25.22 By section 153, Changes to, and revocation of, orders granting development consent:

Schedule 6 (changes to, and revocation of, orders granting development consent) has effect.

25.23 Schedule 6 includes as follows. Paragraph 2 includes: (Emphasis added)

1) The Secretary of State may make a change to a development consent order if the Secretary of State is satisfied that the change is not material. This is subject to sub-paragraph (13).

1A) The Secretary of State may by regulations make provision about—

a) the decision-making process in relation to the exercise of the power conferred by sub-paragraph (1);

b) the making of the decision as to whether to exercise that power;

c) the effect of a decision to exercise that power.

This is subject to sub-paragraph (2).

1B) The power to make regulations under sub-paragraph (1A) includes power to allow a person to exercise a discretion.

2) In deciding whether a change is material, the Secretary of State must have regard to the effect of the change, together with any previous changes made under this paragraph, on the development consent order as originally made.

3) The power conferred by sub-paragraph (1) includes power—

a) the following provisions of this paragraph, and

b) paragraphs 4 and 5.

4) The power conferred by sub-paragraph (1) may be exercised only on an application made to the Secretary of State by or on behalf of—

a) the applicant or a successor in title of the applicant,

b) a person with an interest in the land, or

c) any other person for whose benefit the development consent order has effect.

5) An application under sub-paragraph (4) must be made in the prescribed form and manner.

6) Sub-paragraph (7) applies in relation to an application under sub-paragraph (4) made by or on behalf of a person with an interest in some, but not all, of the land to which the development consent order relates.

7) The application may be made only in respect of so much of the order as affects the land in which the person has an interest.

8) The Secretary of State and the person who has made the application under subparagraph (4) must comply with such requirements as may be prescribed as to consultation and publicity in relation to the exercise of the power conferred by sub-paragraph (1). This is subject to sub-paragraphs (9) to (11).

8A) The power to make regulations under sub-paragraph (8) includes power to allow the Secretary of State or the person who has made the application under sub-paragraph (4) to exercise a discretion.

9) If the development consent order was required to be contained in a statutory instrument, the power conferred by sub-paragraph (1) may be exercised only by order contained in a statutory instrument.

11) As soon as practicable after the instrument containing the order is made, the Secretary of State must deposit a copy of it in the office of the Clerk of the Parliaments.

12) If a change is made to a development consent order under the power conferred by sub-paragraph (1)—

a) the order continues in force,

b) the Secretary of State must give notice of the change to the order to such persons as may be prescribed, and

c) the change to the order takes effect from the date on which the notice is issued, or, if the change to the order is required to be made by order contained in a statutory instrument, the date specified in the order making the change…

26. ***INFRASTRUCTURE PLANNING (ENVIRONMENTAL IMPACT ASSESSMENT) REGULATIONS 2017***

26.1 The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 include as follows.

26.2 Regulation 3(1) includes: (Emphasis added)

"EIA" has the meaning given by regulation 5;…

"environmental information" means the environmental statement (or in the case of a subsequent application, the updated environmental statement), including any further information and any other information, any representations made by any body required by these Regulations to be invited to make representations and any representations duly made by any other person about the environmental effects of the development and of any associated development;

"environmental statement" has the meaning given by regulation 14; …

26.3 Regulation 4 provides: (Emphasis added)

3) This regulation applies to—

a) applications for an order granting development consent for EIA development received by the Secretary of State; and

b) subsequent applications for EIA development received by a relevant authority.

4) Where this regulation applies, the Secretary of State or relevant authority (as the case may be) must not (in the case of the Secretary of State) make an order granting development consent or (in the case of the relevant authority) grant subsequent consent unless an EIA has been carried out in respect of that application.

26.4 Regulation 5 provides: (Emphasis added)

6) The environmental impact assessment ("the EIA") is a process consisting of—

a) the preparation of an environmental statement or updated environmental statement, as appropriate, by the applicant;

b) the carrying out of any consultation, publication and notification as required under these Regulations or, as necessary, any other enactment in respect of EIA development; …

7) The EIA must identify, describe and assess in an appropriate manner, in light of each individual case, the direct and indirect significant effects of the proposed development on the following factors—

…

c) land, soil, water, air and climate;

…

d) the interaction between the factors referred to in sub-paragraphs (a) to (d).

8) The effects referred to in paragraph (2) on the factors set out in that paragraph must include the operational effects of the proposed development, where the proposed development will have operational effects. …

9) …

10) The Secretary of State or relevant authority, as the case may be, must ensure that they have, or have access as necessary to, sufficient expertise to examine the environmental statement or updated environmental statement, as appropriate.

27. COMMON LAW EIA & MODIFICATION REQUIREMENTS

"Rochdale"

27.1 In *R v Rochdale MBC, ex parte Milne* [2001] Env. L.R. 22, Sullivan J (as he then was) considered an outline application for planning permission that was subject to the EIA Regulations. He held:

84. The directive does not require environmental assessment of every industrial estate, or urban development project, only those "where Member States consider that their characteristics … require" assessment. In general terms, it is likely that assessment will be required for substantial projects of this kind. The test adopted in the assessment regulations is whether such a project "would be likely to have significant effects on the environment by virtue of factors such as its nature, size or location", see the definition of Schedule 2 application in regulation 2(1).

87. At pages 96G to 97H of Tew I mentioned the contrast between projects such as this and most of the other descriptions of development that are listed in annex II to the directive and repeated in Schedule 2 to the assessment regulations. The other projects are either industrial projects for particular processes, or "one off" infrastructure projects, such as the construction of

roads, tramways, dams or pipelines, which will, by their very nature, have to be defined in considerable engineering detail at the outset….

89. Since the "description of the project" required by Article 5(2) is a means to that end, in that it provides the starting point for the assessment process, there is no reason to believe that the directive was seeking to be unduly prescriptive as to what would amount to an appropriate description of a particular project. The requirement in Article 5(2) (see page 89C to E) to provide "information on the site, design and size of the project" is, and is intended to be, sufficiently flexible to accommodate the particular characteristics of the different types of project listed in annexes I and II (Schedules 1 and 2 to the assessment regulations). It may be possible to provide more or less information on site, design and size, depending on the nature of the project to be assessed.

90. If a particular kind of project, such as an industrial estate development project (or perhaps an urban development project) is, by its very nature, not fixed at the outset, but is expected to evolve over a number of years depending on market demand, there is no reason why "a description of the project" for the purposes of the directive should not recognise that reality. What is important is that the environmental assessment process should then take full account at the outset of the implications for the environment of this need for an element of flexibility. The assessment process may well be easier in the case of projects which are "fixed" in every detail from the outset, but the difficulty of assessing projects which do require a degree of flexibility is not a reason for frustrating their implementation. It is for the authority responsible for granting the development consent (in England the local planning authority or the Secretary of State) to decide whether the difficulties and uncertainties are such that the proposed degree of flexibility is not acceptable in terms of its potential effect on the environment….

In my judgment, integrating environmental assessment into the domestic procedure for seeking outline planning permission, which acknowledges this need for flexibility for some kinds of building projects, is not contrary to the objectives of the Directive. There is no analogy between the procedure for obtaining outline planning permission, with certain matters reserved for detailed approval, and the procedure which was in issue in Bozen. In that case, not only was there no environmental assessment, the legislative act which authorised the project was generalised in the extreme, amounting to little more than a proposed programme, which was subject to preliminary feasibility assessments, see paragraphs 5, 71 and 79 of the Advocate General's opinion

in that case. The European Court was also concerned with proposed "modifications to development projects". If such modifications have not been subjected to environmental assessment, the Court's conclusion that they should be "when by reason of their nature, size or location they were likely to have significant effects on the environment" (see paragraphs 40 and 49) is readily understandable. Provided the outline application has acknowledged the need for details of a project to evolve over a number of years, within clearly defined parameters, provided the environmental assessment has taken account of the need for evolution, within those parameters, and reflected the likely significant effects of such a flexible project in the environmental statement, and provided the local planning authority in granting outline planning permission imposes conditions to ensure that the process of evolution keeps within the parameters applied for and assessed, it is not accurate to equate the approval of reserved matters with "modifications" to the project. The project, as it evolves with the benefit of approvals of reserved matters, remains the same as the project which was assessed.

27.2 In Smith v First Secretary of State [2003] Env. L.R. 32, the Court of Appeal considered the legal scope of the Rochdale Envelope, the Town and Country Planning (Assessment of Environmental Effects) Regulations 1988 (SI 1988/1199) and the Directive 85/337/EEC on environmental assessment (as amended) and from which the Regulations derived.

27.3 That Court held as follows, in particular, at paragraph 33 in respect of the terms of the constraints for "mitigation", what the instant decision maker was required to consider, and also the requirement for the downstream decision maker to have relevant environmental objectives as part of its decision making process: (Emphasis added)

24. We have also been referred to the following decisions: R. v Rochdale Metropolitan Borough Council Ex p. Tew [1999] 3 P.L.R. 74 and R. v Rochdale Metropolitan Borough Council Ex p. Milne [2001] J.P.L. 470 decisions of Sullivan J.; R. v Cornwall County Council Ex p. Hardy [2001] Env. L.R. 26 a decision of Harrison J. which followed Sullivan J.'s approach in Tew and Milne; R. (on the application of Barker) v London Borough of Bromley [2002] Env. L.R. 631 CA in which Sullivan J.'s approach in Milne and Tew was approved.

25. Principles which those authorities establish seem to me to be the following: First, where outline planning consent is being applied for

(and Tew and Milne were cases concerned with outline planning consent, Milne being round two of a battle over the same development), it is at the outline consent stage that the planning authority must have sufficient details of the proposed development, sufficient details of any impact on the environment, and sufficient details of any mitigation to enable it to comply with its Art.4(2) obligation.

26. Second, the reason for that is that once outline planning consent has been given there is effectively no going back without (at the very least) the payment of compensation. As Sullivan J. said in Tew:

"Even if significant adverse impacts are identified at the reserved matters stage, and it is then realised that mitigation measures will be inadequate, the local planning authority is powerless to prevent the development from proceeding" [97F].

There will accordingly be no proper opportunity when the planning authority considers the matters reserved to reappraise the environmental issues. Indeed Barker held that the obligation under Art.4(2) is not an obligation on the planning authority at the consideration of the reserved issue stage.

27. Third, the planning authority or the Inspector will have failed to comply with Art.4(2) if they attempt to leave over questions which relate to the significance of the impact on the environment, and the effectiveness of any mitigation. This is so because the scheme of the regulations giving effect to the Directive is to allow the public to have an opportunity to debate the environmental issues, and because it is for those considering whether consent to the development should be given to consider the impact and mitigation after that opportunity has been given. As Harrison J. put it in Hardy:

… At the reserved matters stage there are not the same statutory requirements for publicity and consultation. The environmental statement does not stand alone. Representations made by consultees are an important part of the environmental information which must be considered by the local planning authority before granting planning permission. Moreover, it is clear from the comprehensive list of likely significant effects in para.2(c) of Sch.3 , and the reference to mitigation measures in para.2(d), that it is intended that in accordance with the objectives of the Directive, the information contained in the environmental statement should be both comprehensive and systematic, so that a decision to grant planning permission is taken 'in full knowledge' of

the project's likely significant effects on the environment. If consideration of some of the environmental impacts and mitigation measures is effectively postponed until the reserved matters stage, the decision to grant planning permission would have been taken with only a partial rather than a 'full knowledge' of the likely significant effects of the project. That is not to suggest that full knowledge requires an environmental information statement to contain every conceivable scrap of environmental information about a particular project. The Directive and the Assessment Regulations require likely significant effects to be assessed. It will be for the local planning authority to decide whether a particular effect is significant, but a decision to defer a description of a likely significant adverse effect and any measures to avoid, reduce or remedy it to a later stage would not be in accordance with the terms in Sch.3 , would conflict with the public's right to make an input into the environmental information and would therefore conflict with the underlying purpose of the Directive."

28. Fourth, (and here as it seems to me one reaches the most difficult area) it is certainly possible consistent with the above principles to leave the final details of for example a landscaping scheme to be clarified either in the context of a reserved matter where outline planning consent has been granted, or by virtue of a condition where full planning consent is being given as in the instant case…

33. In my view it is a further important principle that when consideration is being given to the impact on the environment in the context of a planning decision, it is permissible for the decision maker to contemplate the likely decisions that others will take in relation to details where those others have the interests of the environment as one of their objectives. The decision maker is not however entitled to leave the assessment of likely impact to a future occasion ***simply*** *because he contemplates that the future decision maker will act competently.* ***Constraints must be placed*** *on the planning permission* ***within which*** *future details can be worked out, and* ***the decision maker must form a view about the likely details and their impact on the environment****.*

"Hillside"

27.4 In *Hillside Parks Ltd v Snowdonia National Park Authority [2022] 1 WLR 5077,* the Supreme Court affirmed the *Pilkington* Principle and amplified its application to situation where a planning permission was being carried out and,

during that execution a further planning permission is granted and begun to be executed on the same land as that to which the first permission relates. The Supreme Court held:

29. The leading case is the decision of a three-judge Divisional Court in Pilkington v Secretary of State for the Environment [1973] 1 WLR 1527. The facts were that the owner of a plot of land was granted planning permission to build a bungalow on the plot. After the bungalow was built, he discovered an earlier planning permission granted to the previous owner to build a bungalow on a different part of the same plot of land. The description of the development in the earlier permission and the relevant plan showed that it was contemplated that the rest of the plot would be used as a smallholding. The question was whether the landowner could lawfully build another bungalow in the location specified in the earlier permission. The Divisional Court held that he could not.

30. Lord Widgery CJ (with whose judgment Bridge and May JJ agreed) pointed out that a landowner "is entitled to make any number of applications for planning permission which his fancy dictates," even though they may be mutually inconsistent with one another. The landowner may wish, for example, to "test the market" by putting in applications for alternative schemes before deciding which one to implement. In general, it is the duty of the local planning authority to regard each application as a proposal for a separate and independent development and to consider the application on its own merits. In saying this, Lord Widgery CJ expressly set to one side cases "where one application deliberately and expressly refers to or incorporates another" (p 1531).

31. Where two separate applications are granted in respect of the same site, one of them is then implemented, and the question then arises—as it did in the Pilkington case—whether it is lawful to carry out the development contemplated by the other permission, Lord Widgery CJ stated the test as being "whether it is possible to carry out the development proposed in that second permission, having regard to that which was done or authorised to be done under the permission which has been implemented" (p 1532B). Applying this test, the Divisional Court held that, having regard to what had been built pursuant to the later permission, the development contemplated by the earlier planning permission could not be carried out. This was because the development contemplated by that permission was not simply the building of a bungalow, but "the building of a bungalow in a particular site as ancillary to the smallholding which was to occupy the rest of the site" (p 1532D).

32. The Pilkington case has been approved and followed on numerous occasions, including in several decisions of the Court of Appeal: see e g Hoveringham Gravels Ltd v Chiltern District Council (1977) 35 P & CR 295 ; Durham County Council v Secretary of State for the Environment (1989) 60 P & CR 507 ; and Staffordshire County Council v NGR Land Developments Ltd [2003] JPL 56. The Authority contends, and the courts below held, that the present case is one where, on a straightforward application of the Pilkington test, development carried out under later permissions granted

after 1987 has rendered the 1967 permission incapable of further implementation…

41. The principle underlying the Pilkington case can be analysed further. In the passage of his judgment quoted at para 36 above Lord Widgery CJ said that his decision was based on the "physical impossibility" of carrying out what was authorised by the unimplemented planning permission; and elsewhere in his judgment he used the phrase "practical possibility" (see p 1532C). Two points arise from this. First, it is important to recognise that the test of physical impossibility applies to the whole site covered by the unimplemented planning permission, and not just the part of the site on which the landowner now wishes to build. Thus, in the Pilkington case, as pointed out in later cases, it remained perfectly possible to build a bungalow in the position authorised by the earlier, unimplemented planning permission, as that part of the site remained vacant. The reason why it was not physically possible to carry out the development authorised by the earlier permission was that the proposal for which permission was granted involved using the rest of the land as a smallholding and this could not be achieved when part of that land was occupied by the first bungalow…

43. On the facts of the Pilkington case the planning permission which had already been implemented included a condition that the bungalow built in accordance with that permission should be "the only dwelling to be erected" on the plot. Lord Widgery CJ, however, specifically stated that his decision did not in any way depend on the fact that building the second bungalow would be a breach of this condition (see p 1532H). What mattered, as he made clear, was whether it was physically possible to carry out the development authorised by the terms of the unimplemented permission. That depends upon (a) the terms of the unimplemented permission and (b) what works have actually been done. It would not make sense to have regard to the terms of the permission under which development has already taken place, as a central theme of the judgment is that mere inconsistency between the two permissions does not prevent the second permission from being implemented. What must be shown is that development in fact carried out makes it impossible to implement the second permission in accordance with its terms.

45. In essence, the principle illustrated by the Pilkington case is that a planning permission does not authorise development if and when, as a result of physical alteration of the land to which the permission relates, it becomes physically impossible to carry out the development for which the permission was granted (without a further grant of planning permission). Unlike a doctrine of abandonment, this principle is consistent with the legislative code. Indeed, as Lord Scarman observed in Pioneer Aggregates at p 145C, it serves to "strengthen and support the planning control imposed by the legislation". Where the test of physical impossibility is met, the reason why further development carried out in reliance on the permission is unlawful is simply that the development is not authorised by the terms of the permission, with the result that it does not comply with section 57(1) .

68. In summary, failure or inability to complete a project for which planning permission has been granted does not make development carried out pursuant

to the permission unlawful. But (in the absence of clear express provision making it severable) a planning permission is not to be construed as authorising further development if at any stage compliance with the permission becomes physically impossible.

69. The Pilkington principle should not be pressed too far. Rightly in our view, the Authority has not argued on this appeal that the continuing authority of a planning permission is dependent on exact compliance with the permission such that any departure from the permitted scheme, however minor, has the result that no further development is authorised unless and until exact compliance is achieved or the permission is varied. That would be an unduly rigid and unrealistic approach to adopt and, for that reason, would generally be an unreasonable construction to put on the document recording the grant of planning permission—all the more so where the permission is for a large multi-unit development. The ordinary presumption must be that a departure will have this effect only if it is material in the context of the scheme as a whole: see Lever Finance Ltd v Westminster (City) London Borough Council [1971] 1 QB 222, 230 . What is or is not material is plainly a matter of fact and degree.

74. In our view, that is indeed the legal position where, as here, a developer has been granted a full planning permission for one entire scheme and wishes to depart from it in a material way. It is a consequence of the very limited powers that a local planning authority currently has to make changes to an existing planning permission. But although this feature of the planning legislation means that developers may face practical hurdles, the problems should not be exaggerated. Despite the limited power to amend an existing planning permission, there is no reason why an approved development scheme cannot be modified by an appropriately framed additional planning permission which covers the whole site and includes the necessary modifications. The position then would be that the developer has two permissions in relation to the whole site, with different terms, and is entitled to proceed under the second.

75. The Authority has argued that, because the planning legislation does not confer any power on a local planning authority to make a material change to an existing planning permission, a later planning permission cannot have the effect of modifying in any material way the development scheme authorised by an earlier permission.

76. The trial judge, Judge Keyser QC, did not find this argument persuasive and nor do we. We agree with him that, although there cannot strictly be a variation of a planning permission (save as mentioned in paras 24 above), there is "no reason why a grant of permission might not, on its true construction, authorise development in accordance with an earlier permission (e.g. the Master Plan) but with specified modifications": para 48. That seems to us to be how, at least prima facie, a planning permission described as a "variation" of an earlier planning permission would reasonably be understood. The legal analysis which best gives effect to the expressed intention is to construe the permission described as a "variation" as a permission to carry out the development described in the original permission as modified to accommodate the development specifically authorised by the new permission

(and as modified by any previous such "variations"). However, if an application for a permission described as a "variation" is properly to be analysed in this way, ordinarily it would have to be accompanied by a plan which showed how the proposed new permission incorporated the changes indicated into a coherent design for the whole site. Mere use of the "variation" label by itself is not sufficient to show how the new permission ought properly to be interpreted, when read as a whole and having regard to the relevant context.

77. Where an application for a variation of a previous permission is properly to be regarded as an application for a fresh permission for the whole site, this may of course mean that the application is required to be accompanied by certain documentation relevant to the whole site, such as an environmental impact assessment. Where the variation is comparatively minor and circumstances have not changed, it may be possible to re-use or update such documentation submitted in support of the application for the previous permission. Whether this is possible or not will depend upon the particular circumstances…

APPENDIX 1

HM Land Registry
Official copy of title plan

Title number **SK316171**
Ordnance Survey map reference **TM1045NE**
Scale **1:5000** reduced from 1:2500
Administrative area **Suffolk: Mid Suffolk**

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SEE ENLARGEMENT

Enlargement
Scale 1:1250

This official copy issued on 12 February 2024 shows the state of this title plan on 23 November 2023 at 09:30:10.
It is admissible in evidence to the same extent as the original (s.67 Land Registration Act 2002).
This title plan shows the general position, not the exact line, of the boundaries. It may be subject to distortions in scale. Measurements scaled from this plan may not match measurements between the same points on the ground.
This title is dealt with by HM Land Registry, Durham Office.

APPENDIX 2 – 1

House of Commons Library

Research Briefing
11 August 2025
Number 10182

By Paul Bolton

Clean power targets

Summary

The Labour Party made a 'national mission for clean power by 2030' a key part of its manifesto for the 2024 general election.[1]

In December 2024, the Department for Energy Security and Net Zero (DESNZ) published its Clean Power 2030 Action Plan.[2] This set out the government's pathway to a clean power system and what it plans to do to achieve this. It included details of how the clean power target will be defined:

> In a typical weather year, the 2030 power system will see clean sources produce at least as much power as Great Britain consumes in total over the whole year, and at least 95% of Great Britain's generation; reducing the carbon intensity of our generation from 171gCO_2e/kWh [grams of carbon dioxide equivalent per kilowatt hour] in 2023 to well below 50gCO_2e/kWh in 2030.[3]

The action plan says that "The shift to a clean power system by 2030 forms the backbone of the transition to net zero". This will initially be through cutting fossil fuel emissions from power generation and later through displacing fossil fuels in other sectors including transport and heating.[4]

The government defines clean power as current generation from renewables and nuclear plus future low carbon technologies such as gas with carbon capture and storage. This briefing follows the government's approach by

1 Labour Party Manifesto 2024: Making Britain a clean energy superpower (accessed 4 February 2025)
2 DESNZ, Clean Power 2030 Action Plan: A new era of clean electricity, 13 December 2024
3 DESNZ, Clean Power 2030 Action Plan: A new era of clean electricity (p 10), 13 December 2024
4 DESNZ, Clean Power 2030 Action Plan: A new era of clean electricity (pp38-39), 13 December 2024

using the term 'clean power' to refer to electrical energy generated from these low carbon sources.

This briefing looks at progress on these targets to date, how they are measured and includes background data on different types of generation, new capacity, demand and emissions from the power sector.

1 Clean power 2030 targets

The government's Clean Power Action Plan defined the 2030 target for the first time. It explained the target means Great Britain will produce enough clean power to meet its annual electricity demand, "backed up by unabated gas supply to be used only when essential". This means moving to an electricity system with the following characteristics in a typical weather year:

> **Metric 1a:** Clean sources produce at least as much power as Great Britain consumes in total
>
> **Metric 1b:** Clean sources produce at least 95% of Great Britain's generation

The government expects that meeting these targets will make Great Britain a net exporter of electricity, meaning annual exports will be greater than annual imports. [5] It would also mean the country would generate more electricity than it consumes across a year.

Clean power is also expected to result in a fall in the carbon intensity of power generation and the final metric includes a target for this:

> **Metric 2:** Reduce the carbon intensity of electricity generation to below 50gCO2e/kWh[6]

The clean power targets and action plan refer to the power generation system in Great Britain. There is a different electricity system in Northern Ireland. Despite this, the data used in the action plan is for the UK.[7] The data the government uses will be reviewed in the future. This briefing uses UK-wide data for most statistics, but also includes a breakdown of clean generation and demand across the UK.

What progress has been made on clean power metrics?

The latest data is summarised in the charts on the following page.[8]

5 The UK has been a net importer of electricity since in each year of the last four decades, apart from 2022 when reduced output from France meant the UK exported more than it imported.

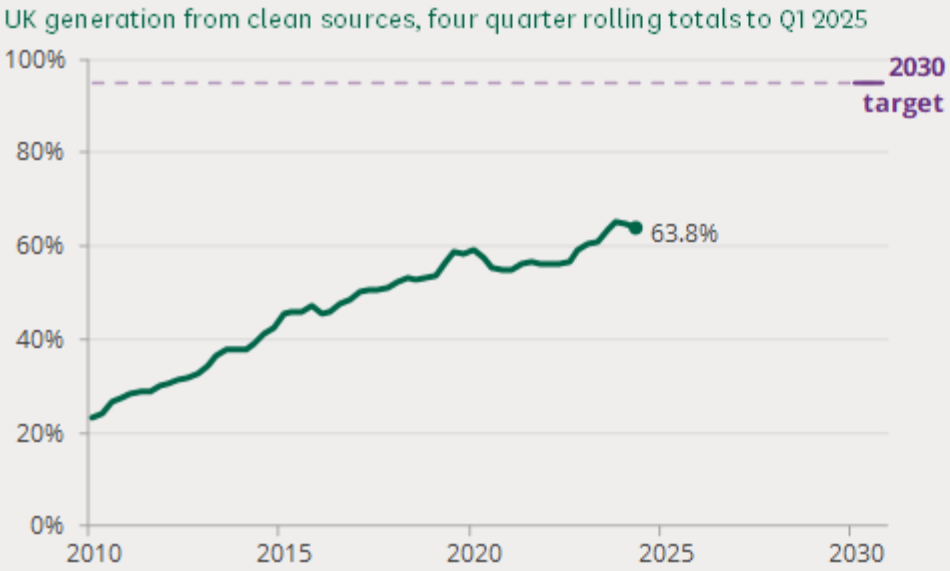
6 DESNZ, Clean Power 2030 Action Plan: A new era of clean electricity (pp 25-26), 13 December 2024

7 This data will be reviewed to better track delivery, as with the definition of clean power.

8 Sources: DESNZ, Energy Trends: UK renewables (Table 6.1), DESNZ, Energy Trends: UK Electricity (Tables 5.1, 5.2 and 5.14)

Progress on Clean Power 2030 metrics

1a: Clean sources produce at least 95% of GB's generation

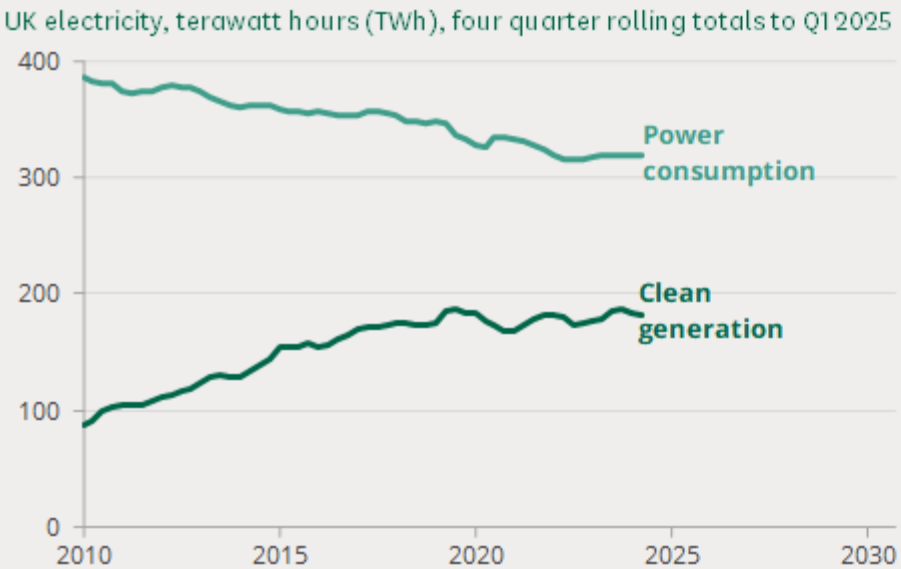


In the latest 12 months 63.8% of UK generation came from clean sources.

Most of the growth in the past three years has been from offshore wind.

Nuclear generation has fallen consistently since 2016. Bioenergy output peaked in 2021.

1b: Clean sources produce at least as much power as GB consumes in total

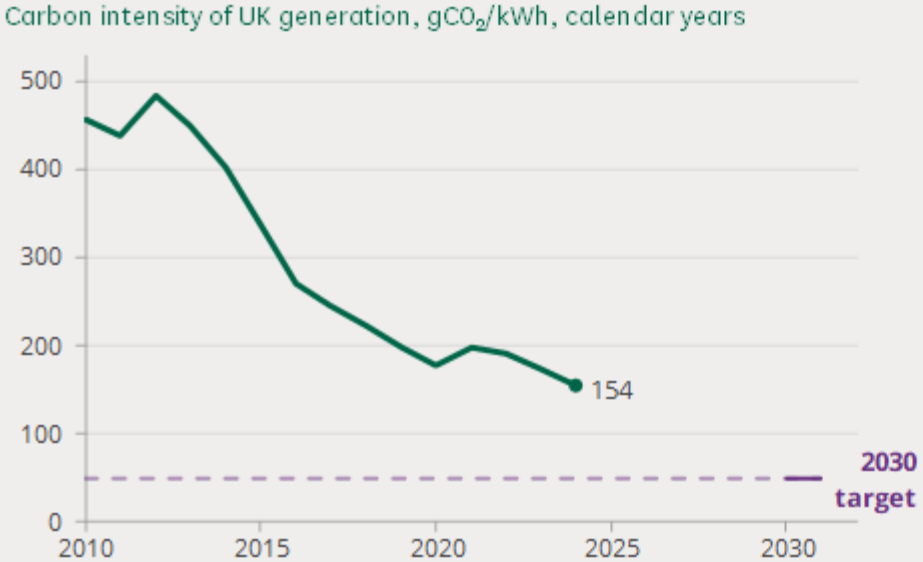


In the latest 12 months UK clean generation was 182 TWh, or 43%, lower than UK power consumption.

There has been little change in total clean generation since 2020.

UK power consumption has fallen steadily over the past 20 years.

2: Reduce the carbon intensity of electricity generation to below 50gCO_2e/kWh



In 2024 the average carbon intensity of UK generation was 154g of CO_2 per kWh.

There was a 65% drop in carbon intensity between 2006 and 2020. This was initially due to the shift from coal to gas, and latterly to increased renewable generation.

How is clean power defined?

The action plan says that clean power (electricity) includes renewables (wind, solar and bioenergy), nuclear, gas with carbon capture and storage and hydrogen to power. The technical annex published alongside the action plan provides further detail on how clean power will be defined. Measurement of the targets will exclude generation produced by energy from waste (EfW) and smaller combined heat and power (CHP) plants which are described as "primarily solutions for waste management and industrial use" respectively.[9]

Gas CHP from larger 'major power producers' (MPPs) will still be included in the clean power targets and form part of the 'unabated gas' element.[10] In 2024, CHP plants which were MPPs produced 5% of UK generation and other CHP plants produced 7% of UK generation.[11] This data covers all fuel types.

The data used in the action plan included all CHP and EfW in its assessments of how the UK did against the metrics in 2023. It added that these statistics will be reviewed in the future "to allow us to accurately track delivery."[12] This briefing uses the same coverage of clean power data as the action plan.

2 Background data

2.1 UK clean generation

Types of technology

The latest data on UK clean generation is set out in the chart below.

At 26%, offshore wind was the largest single source of total clean generation in 2024. It has been the largest source of clean generation since it overtook nuclear in the year to Q1 2023.

Variable renewables (wind and solar) made up 53% of clean generation, while nuclear made up 22% and bioenergy/waste made up 21%.

9 DESNZ, Clean Power 2030 Action Plan: A new era of clean electricity – technical annex
10 Major power producers are companies whose prime purpose is the generation of electricity.
11 DESNZ, Digest of UK Energy Statistics 2025: Electricity (Table 5.15)
12 DESNZ, Clean Power 2030 Action Plan: A new era of clean electricity (pp 25-26), 13 December 2024

UK generation from clean sources

2024

Technology	TWh
Offshore wind	48.5
Nuclear	40.6
Onshore wind	34.7
Plant biomass	26.6
Solar	14.4
Hydro	5.8
Energy from waste	5.5
Anaerobic digestion	3.5
Landfill gas	2.9
Sewage sludge digestion	1.0
Other	0.8
Total	**184.3**

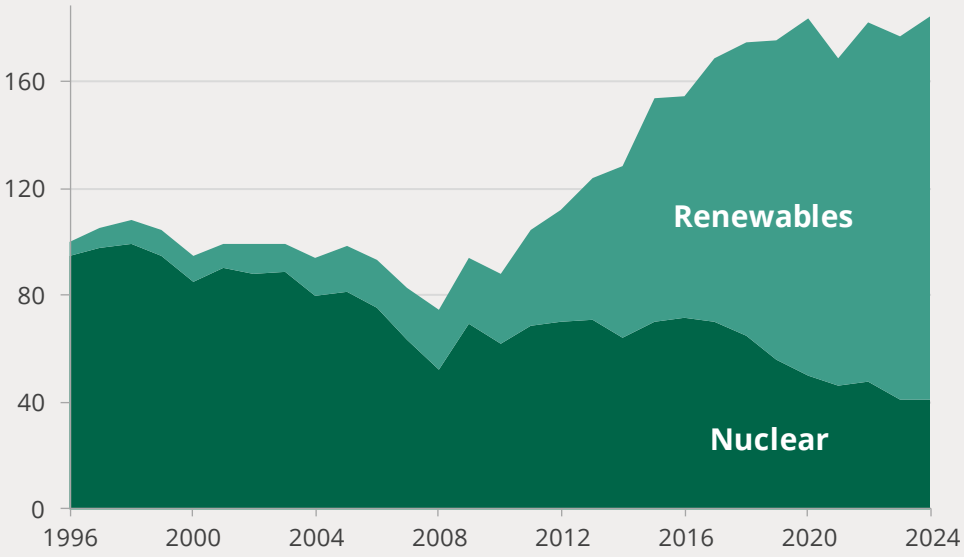
Source: DESNZ, Energy Trends UK renewables (Table 6.1) and UK Electricity (Table 5.1)

Energy from waste will be excluded from the definition of clean power in the future. This would cut total clean generation in 2024 from 184.3 to 178.9 terawatt hours (TWh), or from 63.8% to 62.8% of all generation.

The next chart looks at the long-term outputs of nuclear and renewables in UK clean generation. Nuclear output has declined over time from almost 100 TWh in the late 1990s to just over 40 TWh in 2024. Renewable generation increased from just under 10 TWh in the late 1990s to 144 TWh in 2024.

Clean power output more than doubled 2008 to 2020

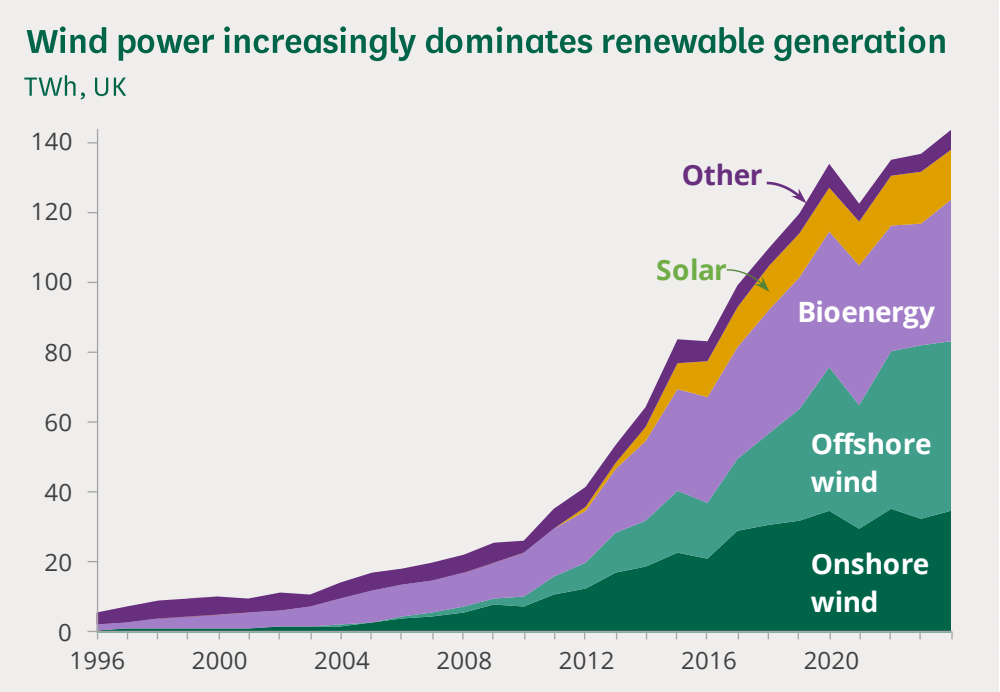
TWh, UK



Sources: DESNZ, Digest of UK Energy Statistics 2024 (electricity table 5.15 and renewables table 6.2); DESNZ, Energy Trends UK renewables (Table 6.1) and UK Electricity (Table 5.1)

Renewable output overtook nuclear output in 2014. The fastest period of growth for renewables was between 2012 and 2020, when the average increase was almost 12 TWh a year.

The chart below examines trends in generation from different types of renewables. This was initially dominated by bioenergy and 'other' sources (mainly hydroelectric power).[13]



Sources: DESNZ, Digest of UK Energy Statistics 2025: Renewable sources of energy (table 6.2); DESNZ, Energy Trends UK renewables (Table 6.1)

There was rapid growth in generation from bioenergy and onshore wind in the early 2010s. Growth in these sources stalled in the late 2010s and early 2020s, since when most of the increase in renewable output has been in offshore wind.

In 2024, total renewable generation was 144 TWh, a record high figure and the first substantial increase since 2020. Most of the increase in 2024 was due to higher output from bioenergy (particularly plant biomass) and onshore wind.

Sub-national data

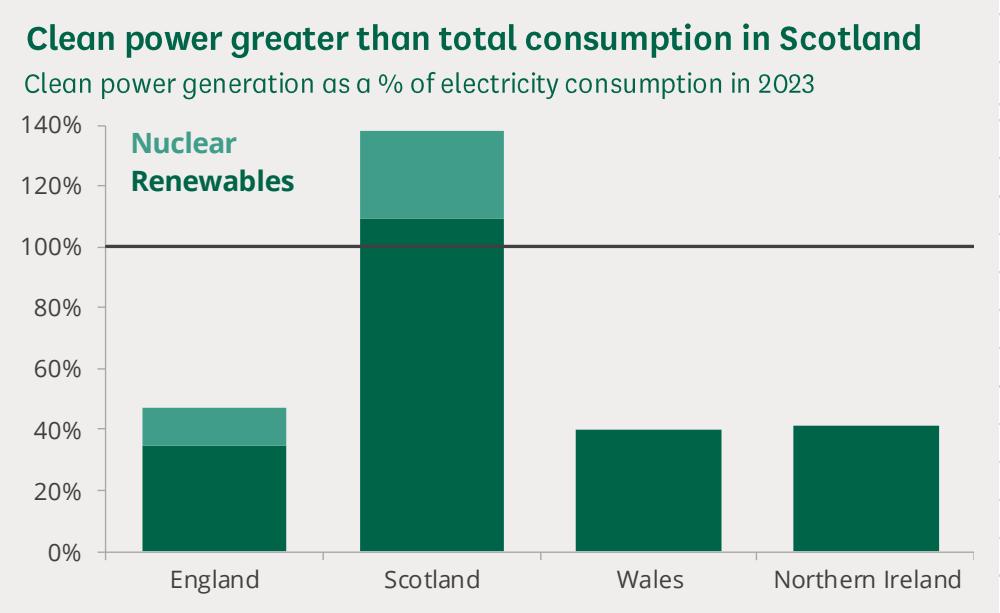
In 2023, clean power made up 92% of generation in Scotland, 57% in England, 43% in Northern Ireland and 34% in Wales. The rate for Great Britain (the area covered by the clean power targets, which excludes Northern Ireland) was 61%, or just above the 60% figure for the UK.[14] As a result, performance on

[13] In 2024 bioenergy consisted of solid plant and animal biomass, landfill gas, sewage gas, anaerobic digestion, energy from waste and bioliquids.

[14] DESNZ, Energy Trends: October 2024, special feature article - Regional renewable electricity in 2023

clean power metric 1a in 2023 was slightly closer to the target than the UK figures (used in the rest of this briefing) would suggest.

The following chart compares renewable generation with consumption in each part of the UK. In 2023, the proportion of clean energy that Scotland generated was greater than its total electricity consumption.[15] The proportions of clean generation in the other parts of the UK were all less than half their total electricity consumption.



Sources: DESNZ, Electricity generation and supply in Scotland, Wales, Northern Ireland and England, 2019 to 2023; DESNZ, Energy Trends: October 2024, special feature article - Regional renewable electricity in 2023

Great Britain measured half of one percentage point higher than the UK for clean power generation as a percentage of electricity consumption in 2023.

2.2 Clean power capacity

Data on the capacities of different clean technologies can be viewed as a leading indicator of how much generation each one can or will produce in the near future. This is particularly true for data on the capacity of projects which are under construction or at earlier stages in the planning pipeline.

Trends by technology

The installed capacity of a generating plant is the maximum power it can produce at any one point in time. Different types of plants operate at different percentages of their maximum capacity over the year.

[15] Consumption is defined here as total generation plus all transfers to the rest of the UK and Europe. This is consistent with the UK-wide figures used earlier in this briefing on clean power metric 1b.

UK nuclear power stations have generally operated at 60 to 80% of their capacity.[16]

Plant/animal biomass and anaerobic digestion plants have typically operated at 60 to 70% of their capacity over the past decade.[17] All are thermal renewable sources, and their output depends on the supply of 'fuel' and market conditions (demand/prices and fuel costs).

Variable renewables, like wind and solar, depend on weather conditions and operate at lower proportions of their maximum capacity across a year. Over the past decade, this has generally been 10 to 11% for solar, 24 to 28% for onshore wind and 38 to 41% for offshore wind.[18]

This means that a gigawatt (GW) of solar capacity is 'worth' less than a gigawatt of offshore wind capacity (in terms of the electricity it is expected to produce over a year), which itself is 'worth' less than a gigawatt of nuclear capacity.

Installed capacities of different types of clean generation should therefore not be directly compared. The charts below look at trends in the capacities of different types of clean power. They each have a different scale and are intended to show individual trends for each technology, not comparisons of capacity across different technologies.

There was rapid growth in the capacity of onshore wind, solar and bioenergy up to the mid to late 2010s. Subsequent growth has been slower for onshore wind and bioenergy. There was little growth in solar capacity in the late 2010s and early 2020s, but it's rate of growth has increased again since 2024.

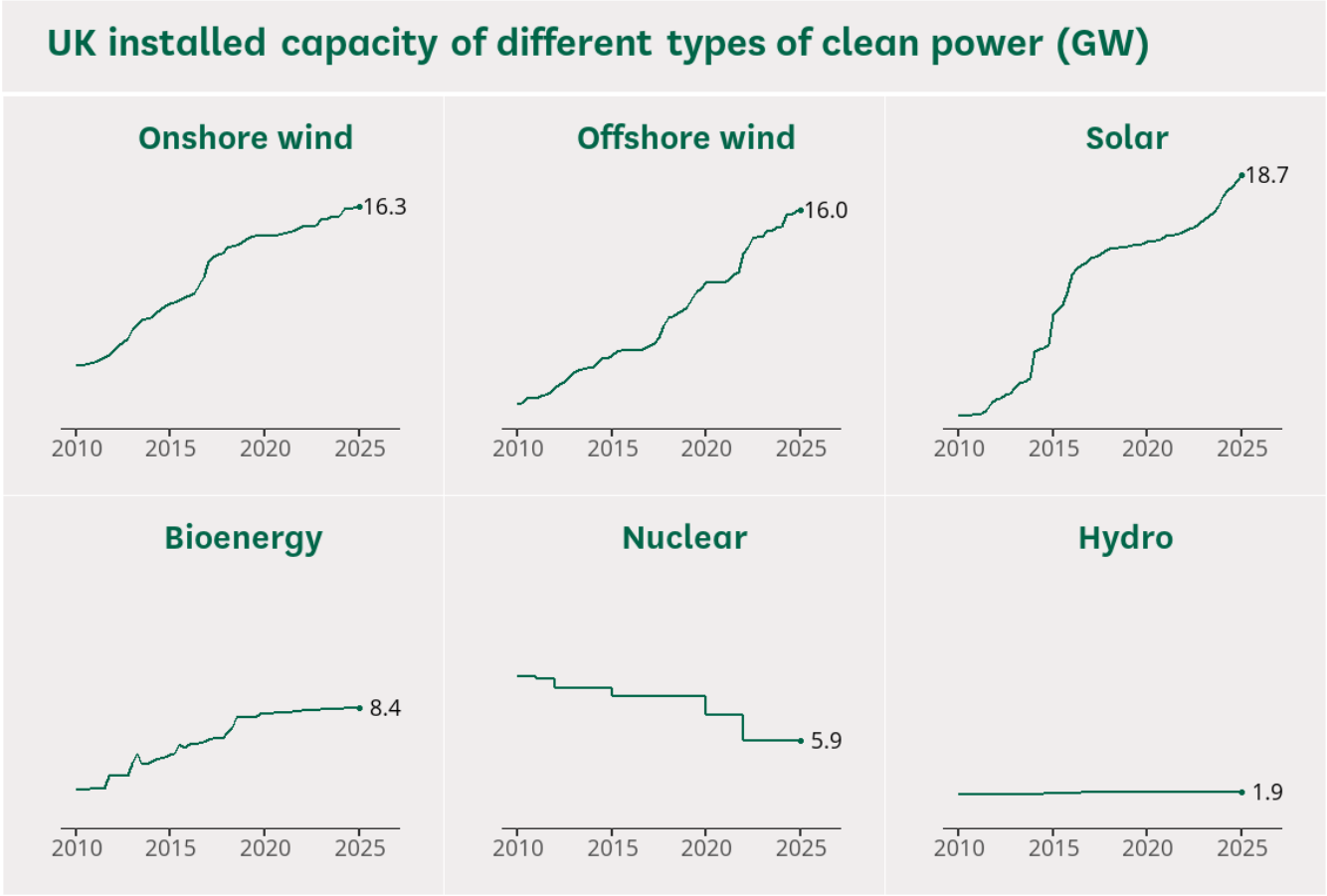
It has been argued that changes to planning rules introduced in 2015 amounted to a 'de facto ban' on new onshore wind projects in England.[19] The Library briefing Planning for onshore wind provides further details.[20]

The Renewables Obligation, which supported large-scale renewable projects, closed for larger solar projects in 2015, smaller solar projects and all onshore wind projects in 2016, and all other technologies in 2017. Support for new renewables projects is now delivered through the Contracts for Difference scheme.[21]

Offshore wind capacity has increased more consistently than other technologies.

16 DESNZ, Digest of UK Energy Statistics 2024 (table 5.10)
17 DESNZ, Energy Trends: UK renewables (Table 6.1)
18 DESNZ, Energy Trends: UK renewables (Table 6.1)
19 See, for instance, this Renewable UK blog urging the Sunak Government to remove what they call the "effective ban" on new onshore wind projects in England.
20 HC Library briefing paper SN04370, Planning for onshore wind (17 May 2024)
21 HC Library briefing paper CBP09871, Contracts for Difference scheme (14 October 2024)

Nuclear capacity has fallen due to plant closures and in 2024 was 46% lower than in 2010.



Sources: DESNZ, Energy Trends: UK renewables (Table 6.1); DESNZ, Digest of UK Energy Statistics 2024 (table 5.7)

Future capacity

In its Clean Power 2030 Action Plan, the government established a range of possible capacities for different technologies in 2030. These are based on scenarios developed by the National Energy System Operator (NESO), as well as internal modelling and the maximum feasible amount based on the current project pipeline. The capacity ranges are designed to reflect the fact that "there is no singular path to achieving clean power, but instead, that there are a range of scenarios that could get us there."

The capacity ranges are set out in the table below alongside current capacity (either for the end of 2023 or mid-2024) levels by technology.[22] It includes a total for unabated gas (gas-fired power without carbon capture) which is not included within the government's definition of clean power, but is expected to play a back-up role at times to ensure the security of electricity supply.

[22] DESNZ, Clean Power 2030 Action Plan: A new era of clean electricity (pp 31-33), 13 December 2024

Possible capacity ranges for 2030
GW, Great Britain

	Current installed capacity	DESNZ 'Clean Power Capacity Range'
Offshore Wind	14.8	43-50
Onshore Wind	14.2	27-29
Solar	16.6	45-47
Nuclear	5.9	3-4
Low carbon dispatchable power	4.3	2-7
Unabated gas	35.6	35

Source: DESNZ, Clean Power 2030 Action Plan: A new era of clean electricity (Table 1), 13 December 2024

The 2030 ranges are around three times the current offshore wind and solar capacity levels and around double the current amount of onshore wind capacity. The range for nuclear is below the current capacity (see the subsection covering nuclear for more discussion of this).

The lower end of the low carbon dispatchable power range is below the current capacity due to uncertainty about future support arrangements for some biomass generation.[23] This was clarified in February 2025 when the government announced that support for large-scale biomass generators would be extended from 2027 to 2031. This support with be different from the current mechanism and include a cap and floor on generation and enhanced sustainability criteria.[24]

The government expects that over time there will be more clarity about the combination of technologies that it expects to deliver clean power by 2030.

Renewable planning pipeline for larger projects

In April 2025, there were 255 renewable energy projects under construction across the UK with a combined capacity of 12.9 GW.[25] The table below breaks these totals down by type of technology, and includes data on projects that have received planning permission and are 'awaiting construction'. It only includes larger projects in Great Britain, so gives lower totals for some technologies (especially solar).

[23] Low carbon dispatchable power includes biomass, bioenergy with carbon capture and storage, gas with carbon capture usage and storage and hydrogen.

[24] DESNZ, Transitional support mechanism for large-scale biomass generators: government response, 10 February 2025

[25] There were a further 76 battery storage projects under construction with a combined capacity of 5.4 GW and 589 battery energy projects 'awaiting construction' with a total capacity of 44.7 GW.

Renewable energy projects with planning permission
GW, Great Britain, April 2025

	Operational	Under Construction	Awaiting Construction
Wind Offshore	14.7	7.7	16.4
Wind Onshore	13.5	1.7	6.0
Solar Photovoltaics	9.6	2.5	18.4
Other	7.7	1.0	2.0
Total	**45.5**	**12.9**	**42.8**

Note: Before 2021 includes projects with a capacity of over 1MW. This threshold was reduced to 150kW from 2021.

Source: DESNZ, Renewable Energy Planning Database: quarterly extract: April 2025

The Clean Power 2030 Action Plan includes illustrations of the gap between current capacity, the amount 'under construction or committed' and the Department for Energy Security and Net Zero (DESNZ) clean power capacity range.[26][27] Their 'under construction or committed' category is wider than the 'Under Construction' data in the table above.

There could still be a considerable time lag before some of the projects under construction become operational, and some may never start operating. There is even greater uncertainty about the projects 'awaiting construction'. For instance, only 3.4 GW of the 10.5 GW of capacity which received planning permission in 2015 was operational in October 2024. 5.2 GW was under construction (mainly offshore wind) and the projects making up the remaining 1.9 GW had either been abandoned, had their planning permission expire or had made no further progress.[28]

Nuclear

The government's latest energy projections expect that nuclear capacity will fall during the 2020s as older plants are retired.

Nuclear capacity is not expected to increase again until new reactors at Hinkley Point C and Sizewell C start operating in 2030 to 2031, and 2035 to 2036 respectively. This means that nuclear is expected to make a smaller contribution to clean power in 2030 than it does at present.

In 2024 , UK nuclear power produced almost 41 TWh of electricity; in 2030 it is expected to produce 15 TWh.[29][30]

26 'Under construction or committed' are projects with a Contract for Difference, but not yet operational.
27 DESNZ, Clean Power 2030 Action Plan: A new era of clean electricity (pp 71-73), 13 December 2024
28 DESNZ, Renewable Energy Planning Database: quarterly extract: January 2025
29 DESNZ, Digest of UK Energy Statistics: electricity (Table 5.6)
30 DESNZ, Energy and emissions projections: 2023 to 2050 (Annex J), 17 December 2024

Since these projections were made, EDF has announced life extensions for four UK nuclear power stations which were due to end generation in the next few years. Heysham 1 and Hartlepool will now continue for one more year to March 2027, while Heysham 2 and Torness will see an additional two years of generation to March 2030.[31]

These life extensions to nuclear plants still mean that nuclear generation is likely to make a substantially smaller contribution to clean power in 2030. It would take further extensions until new capacity comes online for nuclear to maintain its current generation capacity.

Storage and other forms of flexibility

The action plan highlights the importance of short-term and long-term flexibility in an electricity system which is expected to be reliant on variable renewable sources for much of its generation.

The plan includes some indicative ranges for the total amount of electrical storage capacity such a system might need. However, it does not include storage or flexibility within any of its targets for 2030. Therefore, this briefing does not look at any data on storage capacity or the amount of electricity input or output to or from storage.

2.3 How has UK generation decarbonised to date?

The earlier data on clean power metric 2 showed that the UK power sector had undergone considerable decarbonisation over the last decade.

Total greenhouse gas emissions from the power sector fell by 78% in the two decades to 2024. In 2004, power sector emissions were the largest single source of UK greenhouse gases and made up 25% of total UK emissions. In 2024, power sector emissions were smaller than sector totals for transport, buildings, industry and agriculture.[32]

This means that further decarbonisation of the power sector can, on its own, only make a limited contribution to the UK's goal of reaching net zero by 2050. However, when combined with the electrification (using electricity rather than fossil fuels) of transport, heating and industry, it has a much greater scope to cut overall emissions. The next section looks at possible future increases in electricity demand due to electrification.

31 EDF confirms boost to UK's clean power targets with nuclear life extensions, 4 December 2024

32 DESNZ, Provisional UK greenhouse gas emissions national statistics 2023 (Table 1a)

2.4 How much is electricity demand expected change in the future?

The National Energy System Operator's (NESO) clean power 2030 pathways assume that total electricity demand will increase by around 11% between 2023 and 2030.[33] [34] This is due to electrification and increased demand from some sectors (including data centres), with some offsetting efficiency improvements.

Higher levels of electricity demand mean that more clean power generation will be needed to meet the clean power target metrics than if demand remained at current levels. NESO projects that electrification will accelerate during the 2030s, when demand is expected to increase by around 19 TWh a year, compared with around 3 TWh a year between 2023 and 2030.[35] Generation from clean sources would need to keep pace with this increased demand from 2030 to help meet the carbon budgets on the way to the net zero by 2050 target.

2.5 How much clean electricity do other countries produce?

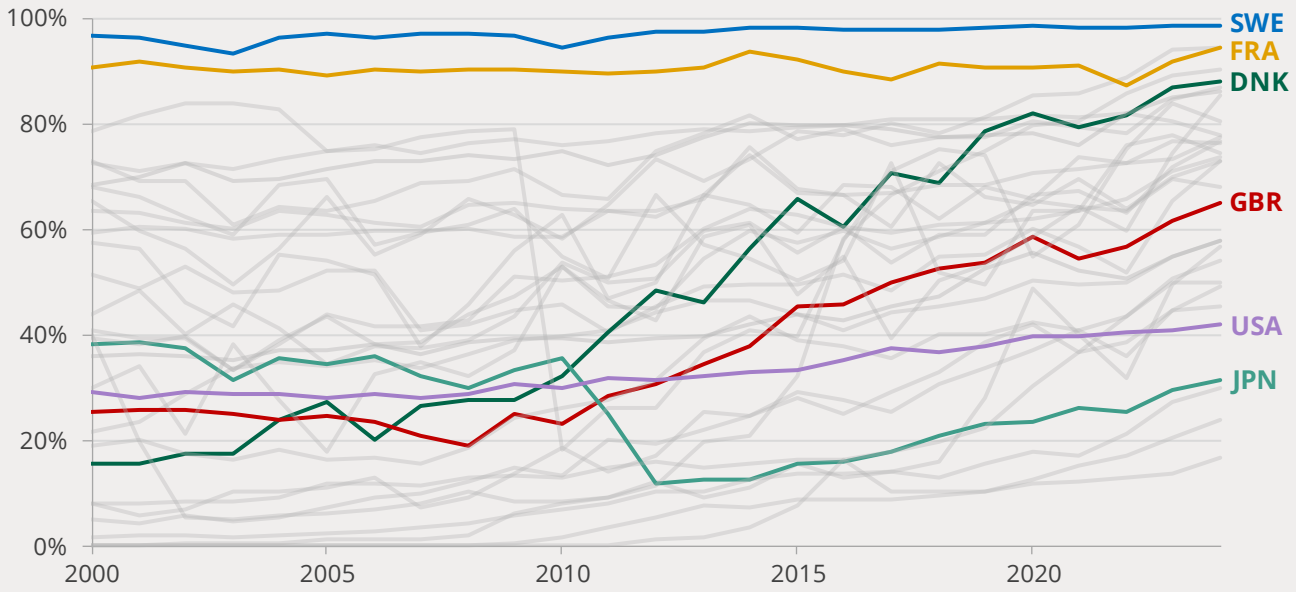
The first chart below looks at the share of clean power generation in the EU and G7 countries. Sweden and France have long produced nearly all their electricity from clean sources. In 2023, Sweden produced 40% of its generation from hydroelectric sources, 29% from nuclear and 21% from wind. In the same year, France produced 65% of its generation from nuclear 11% from hydroelectric sources and 9% from wind.

Denmark is notable for recording the largest sustained growth in clean energy generation, rising from 16% in 2000 to 88% in 2024. 58% of Denmark's generation came from wind in 2024, the highest of any of the EU and G7 countries.[36]

[33] NESO is the independent body which plans and operates Great Britain's electricity and gas systems.
[34] NESO, Clean Power 2030 (p21), 5 November 2024
[35] NESO, Clean Power 2030. Annex 1: Electricity demand and supply analysis, 5 November 2024
[36] EMBER, Yearly Electricity Data (accessed 7 February 2025)

Share of clean generation in the EU and G7

Renewable and nuclear generation as a percentage of all domestic generation

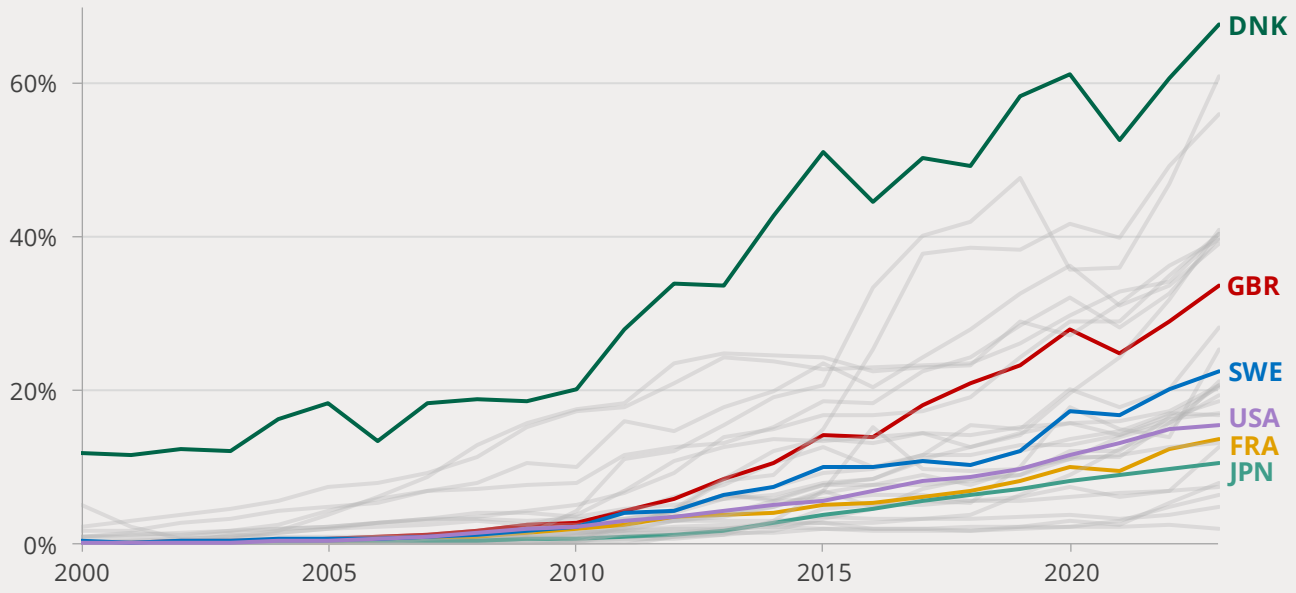


Source: EMBER, Yearly Electricity Data (accessed 8 August 2025)

The UK government expects that most of the UK's clean generation in 2030 will come from variable renewables: wind and solar. NESO's clean power pathways estimate that the total amount of clean generation from variable renewables in the UK will be between 77% and 82% of generation in 2030.[37] The chart below shows the share of variable renewables in the EU and G7 up to 2023.

Share of variable renewable generation in the G7 and EU

Combined wind and solar generation as a percentage of all domestic generation



Source: EMBER, Yearly Electricity Data (accessed 8 August 2025)

[37] NESO, Clean Power 2030 data workbook (sheet CP.06)

Many of the EU and G7 countries with the largest shares of clean generation rely on nuclear power or 'firm' renewables such as hydroelectric sources or bioenergy.

Denmark stands out as having the highest share of variable renewable generation at 68% in 2023. Among other countries, only Lithuania and Luxembourg had shares of variable renewables above 50% in 2023. Denmark's share of variable renewable generation has increased steadily since 2010.

Great Britain's share of variable renewable generation would have to increase at a much faster rate than previously up to 2030 to meet the shares outlined in the NESO pathways. It would also need to increase at a faster rate for a sustained period of time than any of these other countries have managed. The absolute increase in electricity generation from these sources would be larger still, as total electricity demand is expected to increase (as set out in section 2.4 above).

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APPENDIX 2 – 2

Clean Power 2030

Advice on achieving clean power for Great Britain by 2030

NESO
National Energy System Operator

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Annex 2: Networks, connections and network access analysis

Annex 3: Operability and operations analysis

Annex 4: Costs and benefits analysis

Foreword

Fintan Slye
CEO, NESO

I am proud to present the National Energy System Operator's (NESO) advice on how to achieve clean power by 2030. This report is NESO's first since its establishment, in its capacity as a strategic advisor to the Government and Ofgem.

As NESO passes this advice to the Government for it to consider, I am reminded of how far Great Britain has come on its journey to decarbonisation. Earlier this year, the electricity system was run at 95% zero carbon for a short period of time, demonstrating the power of world-leading engineering and innovation. In September 2024, coal was phased out from our power system completely.

These proof points demonstrate that monumental shifts can be made by doing things differently. However, our advice to the Government indicates that to achieve clean power by 2030, a once in a generation shift in approach and in the pace of delivery is required. Without that shift, we risk failing to help consumers, society and the economy navigate a transition to clean energy that is secure, reliable, affordable and fair for all.

There's no doubt that the challenges ahead on the journey to delivering clean power are great. But if the scale of those challenges is matched with the bold, sustained actions that are outlined in this report, the benefits delivered could be even greater. A secure, clean power system - a backbone of home-grown energy that breaks the link between volatile international gas prices; that affordably powers our homes and buildings; that decarbonises the transport that we take to school and work; that drives the businesses of today and catalyses the innovations of the future.

Overall, what this process has demonstrated to me is the enthusiasm to collaborate across the energy sector, government, Ofgem and wider society, to deliver a clean power system that benefits everyone across Great Britain.

Finally, on behalf of NESO, I would like to extend my sincere thanks to all the stakeholders that took the time to engage with our analysis process. It is only with your insight and the challenging questions that you have asked of our approach and assumptions that we have been able to deliver this report with confidence and assurance.

Key messages

1 Clean power is a huge challenge but is achievable for Great Britain by 2030.

- It is possible to build, connect and operate a clean power system for Great Britain by 2030, while maintaining security of supply.
- Several elements must deliver at the limit of what is feasible: a key challenge will be making sure all deliver simultaneously, in full and at maximum pace, in a way that does not overheat supply chains, is sustainable and sets Great Britain on the right path beyond 2030.

2 Clean power will require doing things differently. It will only be achieved with bold action and sustained momentum, across every area and every step of the way between now and 2030.

- Harness the value of flexibility for households, businesses, suppliers and aggregators by unlocking markets, promoting engagement and removing wider barriers.
- Contract as much offshore wind capacity in the coming one to two years as in the last six combined.
- Deliver first-of-a-kind clean dispatchable technologies, such as carbon capture and storage and hydrogen to power.
- Build all planned transmission network on time, which involves twice as much in the next five years as was built in total over the last decade.
- Reform connection processes in 2025 to align with the clean power goal and future strategic plans.
- Reform planning and consenting processes and improve community engagement. Key decisions on funding, awarding contracts, consenting and policy are needed within the next year to ensure construction on key projects starts as soon as possible.
- Reform electricity markets while ensuring a stable and attractive investment environment, to secure over £40 billion of investment annually to 2030.
- Consolidate isolated and siloed digitalisation initiatives into a unified sector-wide prioritised plan, with expedited data sharing and enhanced decision-making driven through rapid adoption of artificial intelligence.

3 Achieving clean power by 2030 will put Great Britain in a strong position.

- Cut the link between electricity bills and volatile international gas prices, without increasing costs to consumers. Other factors will also impact electricity bills to 2030, including a reduction in legacy policy costs (as contracts expire) and energy efficiency improvements.
- Help meet the UK's carbon targets and ramp up supply chains and delivery momentum ready to meet the annual growth in demand from electrification beyond 2030.
- Opportunities for local growth and good jobs in the clean power investment programme and its supporting supply chain.
- Opportunities for positive impacts on nature, the environment and public health.

Executive summary

The Government's clean power mission must be about delivery. Clean power by 2030 is a huge challenge that will only be met by doing things differently, by prioritising pace over perfection and by working together across the industry towards a shared vision.

Our analysis, and what we have heard from stakeholders, give us confidence that the step up can be made. The pipeline of projects exists, the necessary network expansion has begun, the system would be secure and operable, and the technologies are available at reasonable cost. It will not be easy, but the foundations are in place.

Reaching clean power by 2030 would restore Great Britain's access to homegrown resources for electricity generation and support the wider push towards net zero by 2050. It will involve an investment programme averaging £40 billion or more annually, which, with the right policy mix, can be delivered without increasing costs for consumers, without compromising security of supply, and while bringing local economic and job opportunities.

Clean power also enables a compelling offer to consumers to 'plug in and go green' and positions Great Britain for the required surge in electric vehicles, heat pumps, electrification of industry and hydrogen production through the 2030s.

Flexibility from both demand and supply will be vital to managing the system and keeping costs down, while offering an opportunity for consumers to engage with the energy system and unlock lower costs for their energy. Data and digital will be key enablers across the whole energy system, but particularly for more efficient use of greater levels of flexibility, to the benefit of consumers.

In this report, we lay out pathways for how Great Britain can reach a clean power system by 2030. Offshore wind must be the bedrock of that system, providing over half of Great Britain's generation, with onshore wind and solar providing another 29%. New dispatchable low carbon technologies, such as using carbon capture and storage (CCS) or hydrogen, add significant value to the system, with even relatively small levels of operational capacity materially reducing the overall challenge for the rest of the programme.

A major network expansion is needed, in line with published plans for the transmission network and with further strengthening at distribution level. Important projects face multiple barriers, and some are already expected to deliver after 2030. However, they must now be accelerated to deliver by 2030 if the clean power goal is to be achieved. Failure in any single area – generation, flexibility, networks – will lead to failure overall; all parts need to deliver to achieve clean power.

Our pathways imply some choices for the Government and markets to make. Given the scale of the challenge, it may be appropriate to aim high and unblock barriers across all areas, driving through delivery at maximum pace while staying responsive to changing circumstances and new information. Inevitably, some areas will underdeliver, but most investments are low regret, and the risk of over-building is low, given the need to meet growing electricity demand through the 2030s.

A clear plan for clean power, along the lines of the pathways we lay out in this report, can enable a new phase of focused and fast delivery. It should guide decisions on planning, community and public engagement, contracting, grid connections, markets and system operations. With a short and shrinking window of time, pace must be the primary goal. However, this cannot come at the expense of public consent or excessive cost as that would mean the clean power objective would be self-defeating.

An effective plan should give as much visibility as possible to industry, including looking through 2030 to the 2030s and beyond. Clean power is not just a build challenge. The plan should look beyond the infrastructure programme to the supply chain, to operations, including digitalisation, to distribution networks and to the consumer, and beyond power to the rest of the economy.

Our advice reflects a significant programme of analysis and stakeholder engagement, building on previous work such as the Future Energy Scenarios and Pathway to 2030. The next step will be for the Government, reflecting on the advice in this report, to set out its own plan for clean power and then use it to drive delivery. We will use the Government's plan as the starting point for our Strategic Spatial Energy Plan (SSEP), for the reformed connections queue, and as a guide to the changes we will make as NESO to enable a secure, flexible and efficiently operated clean power system by 2030.

A clean power plan for Great Britain by 2030

A clean power system is one where demand is met by clean sources (mainly renewables), with gas-fired generation used only rarely to ensure security of supply, primarily during sustained periods of low wind. For the analysis in this report , we have described this as: by 2030, clean sources produce at least as much power as Great Britain consumes in total and unabated gas should provide less than 5% of Great Britain's generation in a typical weather year.*

Our analysis points to the following priorities for successful pathways to clean power:

- **Unlock flexibility of demand and supply.** Flexibility is vital in a system with more variable renewables. There are large opportunities to increase flexibility in both demand and supply, across residential and commercial applications, and in industry. However, flexibility is not currently valued in full and faces multiple barriers. Markets and processes must be redesigned, and data and digital approaches embraced, enabling infrastructure must be delivered and barriers unblocked.
- **Backing offshore wind and renewables.** There is no path to clean power without mass deployment of offshore wind, together with onshore wind and solar. Sustained rollout of offshore wind is needed at over double the highest rate ever achieved in Great Britain. Increased rollout will need to continue through the 2030s. Transparent and comprehensive investment signals, contracting arrangements and delivery environment for these projects will be key to the costs and success of the clean power programme as a whole.
- **Recognising the value of dispatchable low carbon plants.** These play a vital role that is different to weather-dependent and firm low carbon plants in being able to match to demand regardless of conditions. Biomass can shift into this role as can new CCS and hydrogen projects if they can come online by 2030. CCS and hydrogen are also important and currently under-developed technologies for the global transition, implying progress in this area can help lead the global effort. Contracting arrangements should be developed with the expectation that these plants operate flexibly, rather than operating continuously. More will be needed beyond 2030 and will be advantageous if delivered earlier, potentially enabling a lower cost 2030 system that takes pressure off other delivery challenges.
- **Delivering network plans in full and faster.** Current plans for network expansion are sufficient, but must overcome many barriers to deliver on time, and some vital projects need to be accelerated to deliver by 2030. More than twice as much transmission network needs to be built in the coming five years than the previous ten, along with accompanying enabling works, connections and distribution network strengthening.
- **Keeping options open.** Our pathways recognise various uncertainties, including on demand and deliverability of certain options. In the face of these uncertainties, and the need to manage delivery risk, there is high value in pursuing multiple options where they exist and encouraging competition between, not just within, different technologies.

The rest of this summary outlines the findings from our analysis and engagement: our pathways, their feasibility, critical enablers of clean power and the benefits and costs.

* This is the description of Clean Power used in this report. Government will set out how it is defining Clean Power 2030 in due course.

Clean power pathways

As Great Britain has improved efficiency and rolled out renewables, the share of electricity generation from unabated gas (from gas-fired plants not using carbon capture and storage) has fallen to around a third. A further 12% of demand was met by imported power in 2023.

Our clean power pathways see Great Britain become a net exporter of power and reduce the share of unabated gas generation to below 5%. All our pathways involve early electrification of heat, transport and industry. A reductionist approach that slows down electrification to lessen the challenge of clean power would undermine the core objectives of cutting energy costs and supporting net zero.

Our clean power pathways see a four-to-fivefold increase in demand flexibility (excluding storage heaters), an increase in grid connected battery storage from 5 GW to over 22 GW, more pumped storage and major expansions in onshore wind (from 14 GW to 27 GW) and solar (from 15 GW to 47 GW) along with nuclear plant life extensions.

Our work identifies two primary clean power pathways. In addition to the elements outlined above, one pathway successfully builds 50 GW of offshore wind by 2030, but no new dispatchable power from hydrogen or gas with CCS. The other pathway delivers new dispatchable plants (totalling 2.7 GW) and 43 GW offshore wind. Either of these requires a dramatic acceleration in progress compared to anything achieved historically and can only be achieved with a determined focus on pace and a huge collective effort across the industry.

The pathways involve different risks and challenges, both at the portfolio and project levels. Delivering new dispatchable power would reduce supply chain pressures for renewables and bring lower system costs in our analysis. However, new technologies may need more government support initially and would leave some exposure to volatile international gas prices, albeit significantly reduced from today. The higher levels of both offshore wind and dispatchable power will be needed soon after 2030 and progressing both could in parallel bring industrial benefits and new jobs to Great Britain.

Our clean power pathways push the limits of what is feasibly deliverable, but there are some flexibilities at the margin. For example, onshore wind and solar could substitute for offshore wind, more demand side response could substitute for batteries and more hydrogen or CCS could substitute for most other supply options.

A major expansion of the electricity networks is needed alongside to connect and transmit these new power supplies. Operation of the system will need to evolve too, which can be done and will be reflected through our developing plans, which will be updated in our March 2025 Operability Strategy Report to align to the clean power goal.

Feasibility of clean power

Delivering a clean power system by 2030 will be hard, but our analysis and engagement indicates the foundations exist to make it possible. Success will need a combination of efforts across the household, community, regional and national levels.

Historically, customer engagement with energy has been low. However, energy efficiency has improved as lights and appliances become more efficient. Trials of demand flexibility, by us and market participants, demonstrate the untapped potential that can grow with the rollout of new technologies like electric cars alongside smart capabilities and digitalisation. We are already seeing demand side flexibility playing a role in the balancing mechanism, frequency services and distribution network markets.

Key supply-side technologies (e.g. offshore wind, onshore wind, solar, batteries) will all need to deploy more on average each year to 2030 than they have ever done in a single year before. This will inevitably stretch supply chains and require accelerated decision making in planning, permitting and awarding of contracts. But there are enough projects in the pipelines to sustain the required rollout if they can progress to delivery.

CCS and hydrogen are first-of-a-kind projects for Great Britain and previous attempts have not progressed to delivery. The Government has begun awarding funding, which provides a platform for a material contribution by 2030 or soon after. There are developers with specific projects ready to deliver for 2030 under the right conditions.

Our clean power pathways require up to £60 billion of network investment cumulatively to 2030, to build nearly 1,000 km of onshore and over 4,500 km of offshore network and accompanying enabling works. That is more than double over five years what has been built in total in the last ten. The industry has begun to mobilise for this challenge, with most projects set out in the ESO Pathway to 2030 network plan underway and aiming for delivery by 2030. A handful of key projects will need to be brought earlier from their current delivery dates of after 2030.

The clean power system must also be a secure system. Our analysis shows that the mix of demand, storage and supply in our clean power pathways can manage the risks associated with balancing supply and demand at the same or better than current levels. This will require that even as use of gas generation drops to very low levels, most of today's gas plants remain on the system out to 2030 and beyond. Appropriate arrangements will need to be in place to ensure these plants remain open but do not run excessively (such as to provide power for export).

Perhaps the hardest challenge will be delivering across all areas together. Many elements of the supply chain are shared and there are overlaps in the required workforce and skills. Failures in any one area can cascade to failures elsewhere. At the same time, doing things differently, the shift to a mission-led approach, the opportunity for a positive national conversation, the chance to provide greater visibility and confidence and the possibility of resolving challenges at programme rather than project level can bring benefits for all parts of the challenge.

Enablers for clean power

Government has taken initial steps to support their clean power ambition, including lifting planning restrictions for onshore wind in England, increasing the low carbon auction budget, establishing the Clean Power 2030 Unit and funding a range of CCS enabled projects, including power CCS and low carbon hydrogen production that can support hydrogen to power. Continuing this progress to enable clean power by 2030 will require that things are done differently across the delivery chains:

- **Markets and investment.** Various market arrangements and investment support schemes are in the process of, or will need, reform to reach clean power and operate the system efficiently. Decisions must provide stability and confidence to underpin the large amount of investment required, while supporting innovation and efficient operation of the system. An element of competition will help to keep costs down.
- **Planning and consenting.** Significant volumes of projects need to pass through the planning system to start construction on rapid timescales, while maintaining community consent which is vital to the mission. Given that construction for many of the required projects needs to begin in the next 6-24 months to be in place by 2030, upcoming planning reforms will need to significantly streamline and speed up processes.
- **Connections.** The connections queue must be formed of ready-to-connect projects that align with the Government's plan for clean power by 2030 and once developed, the Strategic Spatial Energy Plan (SSEP) and future iterations. We have begun the process of connections reform and will develop the SSEP based on government's plan for clean power by 2030.
- **Supply chain and workforce.** Acute supply chain and workforce challenges must be overcome across nearly all generation, storage and network projects. Policy certainty, visibility of the future market and swift funding decisions are needed to ensure developers can mobilise the supply chains and workforce needed. Over the medium term, greater strategic coordination can enable delivery while supporting the growth of domestic supply chains and a skilled workforce to meet the growing pipeline of projects.
- **Digitalisation and innovation.** Prioritised and coordinated action is needed across the sector to drive digitalisation and common governance is required for orchestration of a sector-wide digital and data plan. Work has started on a common data sharing infrastructure for the sector, but this needs to be accelerated through policy and incentivising adoption. Accelerated AI adoption and transformative innovation need to be prioritised to align with the government's plan for clean power by 2030.
- **NESO as a partner in delivering clean power.** NESO will play a central role in delivering clean power. Putting the government's plan for clean power by 2030 into operation will require coordinated action across the energy industry and its institutions, with NESO working as a partner with Government, Ofgem and key decision makers. This includes supporting Energy Code Reform, developing our implementation and engagement plans and reviewing our operations to ensure alignment with the plan.

These actions are needed for 2030 and must be implemented alongside actions needed to maintain momentum for the period beyond 2030. Many projects are already in development that will only come to fruition in the 2030s and must collectively deliver continued progress through that decade.

Reaching clean power will have impacts on consumers, communities and businesses across Great Britain. While energy policy is generally a reserved matter, planning and consenting are devolved. Consenting of some projects will require a mix of reserved and devolved competency, requiring coordinated partnership between the UK, Scottish and Welsh governments. Furthermore, devolved policies such as the Scottish Government's Energy Strategy and Just Transition Plan will have implications for reaching clean power and beyond. This report does not go into details of the planning and consenting changes required, but it is clear that close collaboration between the UK and devolved governments will be needed.

Benefits and costs of a clean power system for Great Britain

A clean power system will help meet Britain's climate targets. It will reduce gross power sector emissions in 2030 to below the level in the Climate Change Committee's net zero pathways. It will set the system on track for the higher demand growth expected through the 2030s as electrification accelerates and supports that electrification by offering consumers clean power. Being one of the first major economies to decarbonise from a historically fossil fuel-based power system to clean power can form a strong part of the UK's wider climate leadership.

Clean power can also support wider economic objectives. An investment programme averaging over £40 billion annually can support economic opportunities and new jobs across the UK, and our analysis suggests it can be paid for without increasing costs to consumers, provided the increased pace does not overheat supply chains or otherwise drive up project costs. New networks and an abundant supply of clean power can enable growth in other sectors, including the growing digital and data economy.

This major investment programme should be largely delivered by the private sector and will bring material savings in annual running costs as less gas needs to be bought to provide power. Our analysis in this report suggests that, together, these will lead to overall costs for clean power – the costs that are passed on to consumers – in 2030, that are no higher than they would have been without the shift to clean power.

Great Britain would be much less reliant on energy imports for power and far less exposed to fluctuations in international gas prices. Without accelerated action a repeat of the gas price spike of 2022 would add around £10 billion to electricity system costs in 2030, but would add only £5 billion in a clean power system. Avoided price spikes could be far more significant, noting the very high rises in electricity prices during the recent gas price crisis.

A crucial determinant of overall costs will be the impact of the Government's new approach to clean power. If it can provide greater visibility and greater confidence, while unblocking barriers and easing delivery, there may be opportunities for costs to fall. Conversely, if supply chains become excessively stretched, costs could escalate.

How costs translate to customers' electricity bills will depend on policy design and market dynamics that we do not attempt to predict in this report. Additional opportunities exist for bills to fall with energy efficiency (expected to reduce typical household electricity consumption by 5 - 10% to 2030) and as legacy policy costs for early renewable contracts expire.

Policy design should target not just the average electricity user, but the distribution of customers. The benefits of shifting to clean power and electrifying heat and transport should be available to all households and businesses, ensuring a just and affordable transition.

In conclusion, the success of the Government's clean power mission will be as much about how it is delivered as what it is delivering. Urgency and momentum are critical. A good approach begins with a good plan. There is an opportunity to create a virtuous circle of reduced barriers, increased visibility, easier delivery and lower costs alongside increased pace. As the newly established National Energy System Operator, we look forward to supporting the Government in this challenge.

Navigating this report

The report is structured in the following chapters:

Chapter 1. Foundations for clean power

Chapter 2. Core elements of a clean power system

Chapter 3. Pathways to clean power

Chapter 4. Critical enablers

Chapter 5. Costs and benefits of a clean power system

Supporting analysis referred to throughout is published on our NESO website.

Chapter 1. Foundations for clean power

Progress to date: Power sector emissions have fallen by 65% since 2010.* In 2023, clean electricity sources met 62% of Great Britain's demand** setting a good foundation to build on for clean power.

Describing clean power: We describe clean power as at least as much power being generated from clean sources as Great Britain consumes across the year, and when unabated gas generation makes up less than 5% of Great Britain's generation in a typical weather year.

How our advice will be used: Our advice, built from analysis and stakeholder feedback, will feed into the development of the government's plan for clean power by 2030.

* *Latest published data from 2022.*

*** As calculated from the NESO dashboard, using total generation and net imports, excludes Combined Heat and Power, Energy from Waste and unmetered generation.*

1.1 Where we are now

Delivering a clean power system for Great Britain will be a huge challenge but important foundations are in place.

Power sector emissions have fallen by more than 65% since 2010. Clean electricity sources provided for 62% of demand last year, primarily from renewables and nuclear, and September 2024 saw Great Britain, and more widely the UK, become the first G7 country to phase-out coal power.

A strong pipeline of clean power projects is currently at various stages of development and deep cost reductions over the last decade for renewable technologies has meant that these can produce power at lower cost than running unabated gas-fired generation.

Advances in data and digitalisation, including the advent of smart chargers and appliances alongside the rapidly falling costs of batteries, pave the way for an enhanced consumer experience, for more flexibility, and for managing a clean power system effectively.

Renewables expansion has begun to reduce share of fossil generation

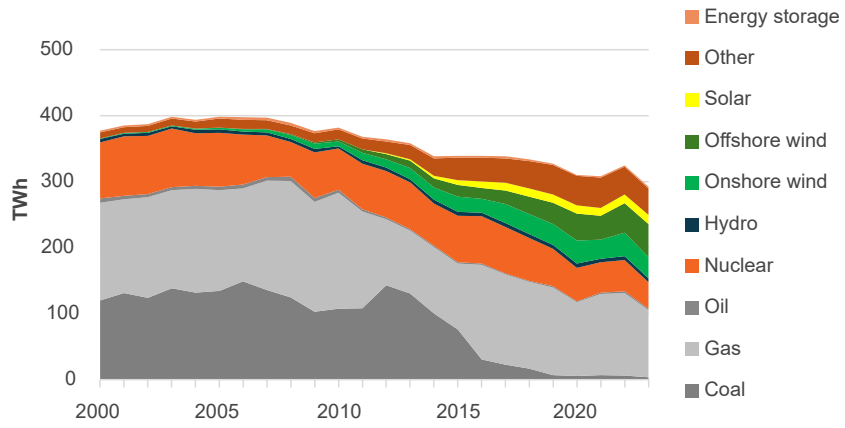


Figure 1: **Clean sources are already reducing the share of fossil fuel generation**

(Source: DUKES, NESO. Note: Historical data includes Northern Ireland. Excludes CHP and waste)

1.2 Describing a clean power sector

A clean power system for Great Britain in 2030 will be one where demand is met by clean sources, mainly renewables, with unabated gas-fired generation used only rarely to ensure security of supply, primarily during sustained periods of low wind. In developing our advice for this report, we describe this clean power sector as one which, by 2030, meets the following quantitative criteria:

- Clean sources produce more power than Great Britain consumes in total.
- Unabated gas (i.e. without carbon capture and storage) provides less than 5% of Great Britain's generation in a typical weather year.

Our hybrid definition of clean power reflects the variable nature of renewable sources such as wind and solar. A clean system must provide enough to cover Great Britain's demand while balancing demand and supply to limit the use of unabated gas for security of supply.*

We include as clean power sources: renewables (including biomass) and other low carbon sources (nuclear, plants using carbon capture and storage – CCS, hydrogen produced from low carbon methods such as electrolysis or with CCS).

For 2030, we net off from demand generation from existing plants that have primary roles in other sectors of the economy – those producing combined heat and power (typically meeting an industrial heat need) and energy from waste (acting as a means of waste disposal). In line with the Climate Change Committee's classification, we attribute emissions from these plants to the industry and waste sectors respectively, rather than the power sector. We note that these plants release fossil carbon emissions and will also need to decarbonise in the long run, for example by fitting CCS.

Under this description, our analysis shows grid carbon intensity drops below 20 gCO_2/kwh (excluding BECCS).

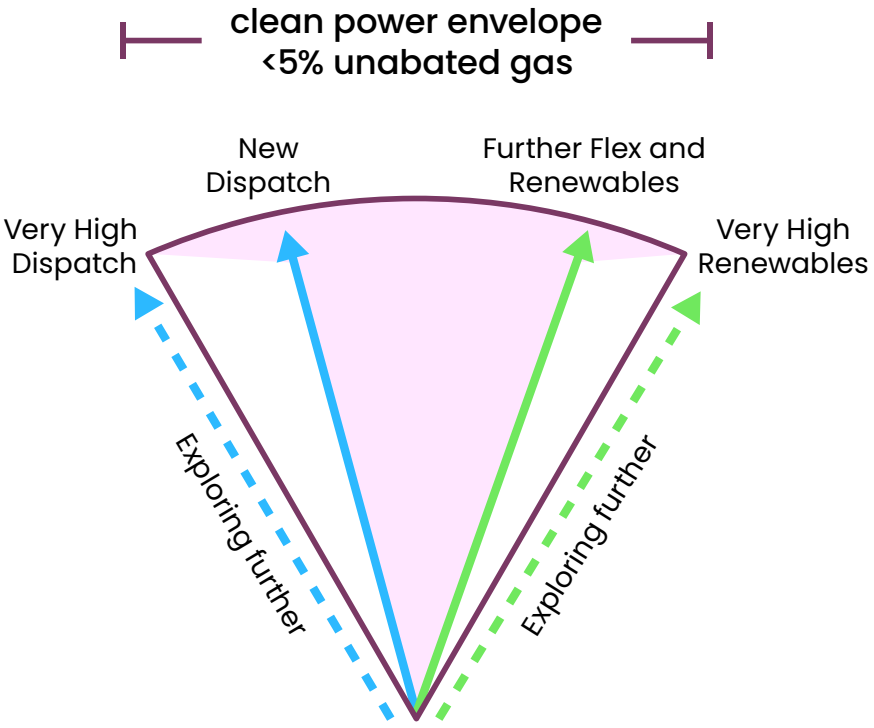
* This is the description of Clean Power used in this report. Government will set out how it is defining Clean Power 2030 in due course.

1.3 Our approach to pathways in this report

We have developed two primary pathways that meet our clean power description. These offer challenging, but realistic and cost-effective, routes based on our assessment of the project pipelines and stakeholder feedback.

We have also developed two wider sensitivities, which offer more stretching levels of deployment of key technologies – more renewables or more dispatchable power, alongside a Counterfactual which does not accelerate progress and misses the UK's legally binding carbon targets. These, along with further exploratory sensitivities, have allowed us to examine a range of possibilities and explore the relative importance of specific elements of the clean power system.

We have explored the range of options and influences through sensitivity studies presented in Chapter 3.



All pathways see increased electrification of transport, heat and industry by 2030 as needed to meet economy-wide carbon targets. Energy efficiency improvements continue across both pathways. Clean power pathways will all require increased digitalisation, open data and Innovation.

New Dispatch	Further Flex and Renewables
• Growth in renewables but at a lower level compared to Further Flex and Renewables. • Deployment of new low carbon dispatchable power (CCS and hydrogen) alongside highest nuclear capacity.	• Highest levels of societal engagement, with higher residential and industrial demand flexibility and more storage. • Fast deployment of renewables (50 GW offshore wind), but no new dispatchable power.

1.4 How our advice fits in to wider plans

This advice responds to a formal commission from the Department for Energy Security and Net Zero (DESNZ) to provide practical advice on achieving clean power by 2030 for Great Britain, including developing a range of pathways that reflect the possible routes to a decarbonised power system. As outlined in the formal commission to NESO, our analysis includes:

- Energy generation and demand mixes.
- Key requirements for the transmission network.
- Consideration of criteria that could support connections reform.
- View of actions needed to enable delivery.
- High level assessment of costs and benefits, opportunities, challenges and risks.

Our advice is intended to be an input to the development of the government's plan for clean power by 2030.

In October 2024, we were commissioned by the UK, Scottish and Welsh governments to create a Strategic Spatial Energy Plan (SSEP) for the energy system, land and sea, across Great Britain.

The SSEP will be used to help plan the future of the energy system for the whole of GB. It will sit alongside and grow with future government policy and market-led interventions; it is intended to be complementary to these, providing a more strategic approach to spatial planning, and is intended to become part of the framework of planning systems across GB.

The SSEP will take as its starting point the government's plan for clean power by 2030.

1.5 Stakeholder engagement

Previously, as the Electricity System Operator, we engaged with over 3,000 stakeholders each year to create the Future Energy Scenarios, alongside specialists from the energy industry and planning experts in developing future network plans. As the National Energy System Operator (NESO), we will build and expand on the extensive engagement in line with our new responsibilities. Our engagement also goes beyond the sector, working with end users of energy from housing associations and local authorities to energy-intensive industries.

NESO has taken a similar, whole system approach, which builds on our continuous engagement with stakeholders in developing our Clean Power 2030 advice.

We have been transparent with our analysis to test our thinking and seek input during development. All interim analysis shared externally has been published on NESO's website and we have made various changes in response, including evolving our pathways to those described above. We include key messages received in our engagement throughout this report.

A key theme raised by an overwhelming number of stakeholders was that clean power would only be deliverable if it were to be accompanied with immediate action by the Government, Ofgem and NESO to put Great Britain on a path to achieving clean power by 2030. Feedback highlighted the need to do things differently, act with a sense of urgency and quickly build momentum.

We have engaged with stakeholders in a number of ways

Bilateral & roundtables with market participants & experts

Open written feedback submissions

Policy and analysis literature review

Industry and societal stakeholder forums established

Public webinars and operational transparency sessions

We have engaged 318 stakeholders in the process of developing this advice.	Across this spectrum of stakeholders, we have sought feedback via:
124 organisations, consisting of: **81** energy industry **24** societal delivery partners (planning experts, local government representatives, land use representatives, environmental specialists,) **19** UK Government, Ofgem, devolved government	**114** bilateral meetings **5** industry and societal forums **12** engagement Events **25** Literary reports We have also had 91 formal written submissions of feedback.

Chapter 2. Core elements of a clean power system

Reaching a clean power system by 2030 will require taking a new approach, coordinating delivery at maximum pace across all areas: electricity demand, system flexibility, electricity supply, networks, connections, operability and operations.

This chapter sets out the core elements of a clean power system to be delivered by 2030. Further detail on the basis of our analysis and stakeholder feedback at a technology level can be found in Annex 1.

Electricity demand and demand flexibility: Demand could rise by around 11% by 2030, but energy efficiency and demand flexibility can reduce costs for consumers and lower investment needs.

Electricity supply and system flexibility: Significant growth in offshore wind (from 15 GW in 2023 to 43-50 GW in 2030), onshore wind (14 GW to 27 GW), solar (15 GW to 47 GW) and battery storage (5 GW to over 22 GW) is needed to displace gas, to meet growing demand and to replace retiring plants. Longer-duration storage and dispatchable clean resources, such as gas with carbon capture and storage, can have an important role alongside renewables.

Electricity networks: Current expansion plans must overcome barriers, with critical projects needing acceleration to deliver by 2030. Network expansion must proceed at more than four times the rate of the last decade, delivering twice as much in half the time.

Connections reform: Central to the proposed connections reform is the creation of a direct link between the technology and capacity needed, by location, in government's plan for clean power by 2030, and the connection offers that are made.

Operability and access: Our analysis suggests that the wider challenges for a clean power system can be met for the gas network, for managing network access and outages and for operating the electricity system. Strong coordination and collaboration across the industry will be needed, including an active role for NESO.

2.1 Electricity demand and demand flexibility

Clean power offers an opportunity to transform how residential, industrial and commercial consumers engage with their energy use. Consumer participation in actively shifting demand in line with signals from flexibility services, alongside the adoption of smart home devices and good operating practices will provide vital support to the network.

This engagement must be supported by a transformation in data and digital infrastructure and it will be an important part of the clean power transition with the potential for wide-ranging benefits for consumers. Achieving this means building on, and accelerating, the progress and innovation we have seen in the sector in recent years.

The demand flexibility opportunity

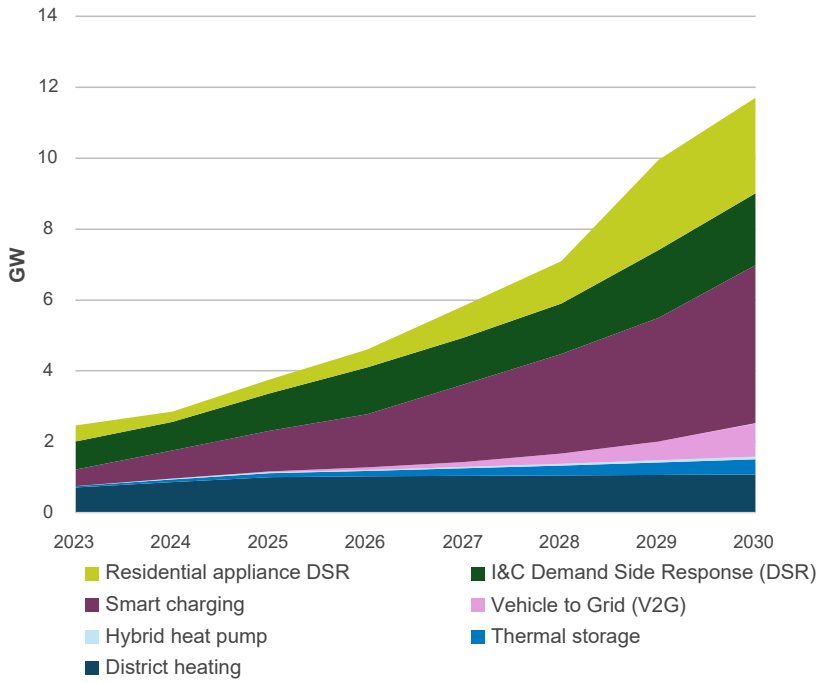


Figure 2: **Demand flexibility at peak in our Further Flex and Renewables pathway**

The advent of smart technology, electric vehicles (EVs) and electrified heating provides new ways for consumers to engage with the energy system and cut their costs by flexing their demand. These opportunities will differ across households, requiring well designed policy to ensure no consumers are left behind and the transition is affordable and fair for all.

Levels of demand flexibility (excluding storage heaters) can increase by four-to-five times to 2030, with significant benefits for the transition to clean power by moving energy demand away from peak periods. By 2030, demand flexibility in our pathways reaches 10-12 GW through smart charging of electric vehicles, time-shifting household demand and enabling more responsive industrial demand, with a further 4 GW from storage heating.

Unlocking the benefits of this increased flexibility for consumers will require engagement. However, effortless participation in demand flexibility through digitalisation and automation is likely to be the path to the highest and most effective levels of responsiveness. It must be affordable and accessible for all consumers to ensure a fair transition and to maintain public support.

Virtually, all of this demand side flexibility will be connected onto the distribution network, providing flexibility throughout the network.

Most of the demand flexibility will be enabled by automation and digitalisation, from a growth in smart appliances and implementation of the Energy Smart Appliances Regulations in the government's Smart Secure Energy System Programme, and the Electric Vehicles (Smart Charge Points) 2021 Regulations which require chargers installed after this date to default to off-peak charging. To increase participation in smart technologies and demand side flexibility, innovative tariffs and other retail market offerings will be needed.

A consistent coordinated approach that enables people to make more informed decisions will allow demand flexibility to be unlocked. Using data and targeted communication methods can provide consumers with the right signals at the right time, that directly impact the choices they make on a day-to-day basis, such as when to turn on their appliances.

Levels of demand flexibility are limited by factors such as a consumer's ability to participate and technology adoption. It cannot fully replace network infrastructure upgrades, which are essential for ensuring capacity, reliability, and meeting future demand growth.

There are a broad range of views from our stakeholders around the achievable levels of demand flexibility. Some feel the country can go much further and faster, while others think the levels in our pathways are overly ambitious. There is, however, agreement that some consumers will need more support than others to benefit from demand flexibility and energy efficiency. The critical importance of Government, Ofgem, NESO, Elexon as the Market Facilitator, and the wider sector was noted throughout our engagement. Demand side flexibility is not subject to the same planning, development consenting, connections or supply chain challenges associated with building energy infrastructure projects and therefore does not carry large cost burdens. Indeed, many of the interventions necessary to release the potential of demand side flexibility are administrative or regulatory. Some stakeholders highlighted the need for consumer investment in technology and the importance of appropriate marketing in enabling widespread voluntary adoption of new technology and more efficient appliances.

Demand turn-up can offer additional potential deliverability benefits and cost savings.[1]

1 Dispatch and redispatch modelling do not include demand turn-up, but it is included in operability analysis.

Energy efficiency measures help manage demand growth

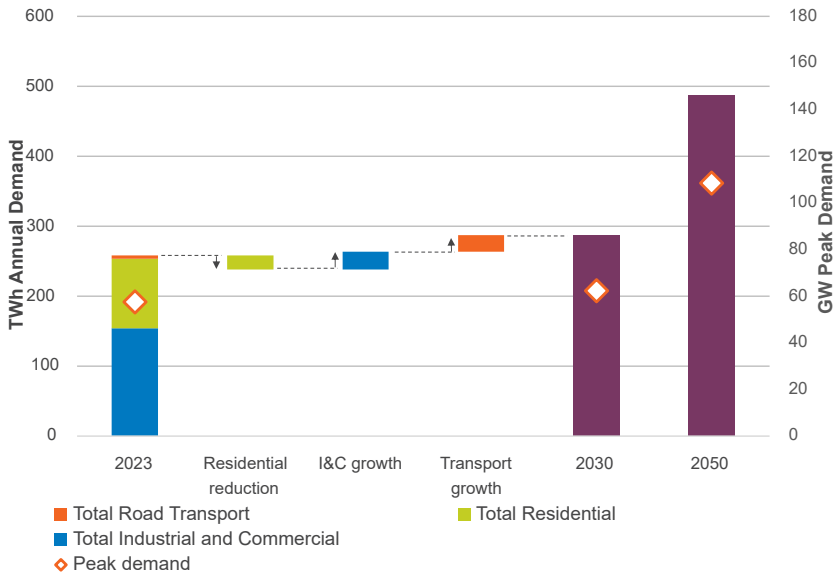


Figure 3: **Changes in consumer electricity demand from 2023 to 2030**

Our pathways assume high levels of societal change and digitalisation with a growing number of personal electronic devices and data service needs. We assume high levels of development in artificial intelligence and off-site computation needs for a wider economy. This means a fourfold growth in data centre electricity demand from today out to 2030. This investment will underpin the establishment of a smart energy system.

Electrification of transport, heat and industry will help enable delivery of the UK's carbon targets. Our analysis assumes that sectors electrify at sufficient pace to meet the Nationally Determined Contribution (NDC) emissions target for 2030 and the legally-binding carbon budgets recommended by the Climate Change Committee. This results in an electricity demand growth of approximately 11% to 287 TWh from today to 2030 (Figure 3).

Energy efficiency can help moderate this demand growth while saving money for consumers. While efficiency improvements to buildings such as insulation has long underperformed in Great Britain, efficiency of electricity use has steadily increased. We expect this to continue with the replacement of lighting and appliances with newer, more efficient models. Without this efficiency in place, 2030 demand could be around 7% higher - equivalent to the output of around 5 GW of offshore wind.

On top of reducing annual demand, energy efficiency also reduces peak demand. We expect efficiency improvements in light bulbs and appliances to reduce peak demand by 4.2 GW by 2030.

As part of our stakeholder engagement, we heard that there was potential for Industrial and Commercial demands to be lowered through improvements in energy efficiency. To reflect this feedback, we have adjusted our Industrial and Commercial demands downwards by 4 TWh (in 2030), compared to the level in our FES 2024 Holistic Transition pathway.[2]

2 This is a top-down adjustment to reflect feedback received, rather than a specific set of actions that we have modelled.

2.2 System/bidirectional flexibility

As the energy system becomes more reliant on weather dependent sources of generation, flexible technologies, such as storage and interconnection to other markets, will be crucial during periods of low generation and high demand (for example, wind droughts in colder winter weather). While these resources do not generate power, they do help to move power to when or where it is needed. Levels of this flexibility must grow significantly to 2030. Achieving a clean power electricity system requires replacing fossil fuel flexibility with low carbon within-day flexibility to shift supply and demand over a day. The wholesale market and retail signals will incentivise the system to self-balance, promoting flexible resource participation.

Access to the right data and the development of digital infrastructure will be vital to using these and other resources efficiently.

Our analysis implies a broad hierarchy of flexibility options for times when there is insufficient clean power to meet demand:

- Demand side flexibility, responding to innovative tariffs or other retail market offerings, would typically come first, reducing peak demand.
- Shorter duration storage from batteries or vehicle-to-grid (V2G) may then discharge, followed by longer duration storage.
- Interconnectors may import based on price differentials and additional generation, such as low carbon dispatchable power or increased demand side flexibility.
- If all other resources are exhausted, unabated gas will need to be used to maintain security of supply and meet consumer demand.

The flexibility sources discussed in this section are only the supply side sources that do not generate electricity. Low carbon dispatchable power and unabated gas-fired generation will provide flexibility but are discussed in section 2.3.

The sensitivities we explore in this report suggest that more interconnection or Long Duration Energy Storage (LDES) can help reduce curtailment, constraints[3] and costs and can improve security of supply. Despite this, the impact of additional capacity above our pathways on reducing the use of unabated gas is limited and dependent upon location.

3 Constraints in the electricity network refer to limitations that prevent the efficient flow of electricity from power plants to homes and businesses, often due to issues such as transmission line capacity or unexpected high demand.

Batteries

Our pathways see battery capacity increase from around 5 GW in 2023 to between 23 and 27 GW in 2030. This represents a major scale-up in build rates, but there are many more projects in the pipeline. Batteries currently have a one-to-two-year deployment lead time and annual levels of deployment have increased every year since 2020.

The principal role of batteries today is to provide within-day flexibility by cycling regularly to help match supply and demand. Additionally, they provide vital system services, such as frequency response, for which their role is likely to grow to 2030 as use of gas generation falls. NESO's ability to access these assets effectively has until recently been hindered by challenges with legacy systems in incorporating batteries fully into the economic dispatch process (manifesting in "skip rates"). The activities we have initiated and recently accelerated have been designed to ensure that batteries will be included on a level economic playing-field with all other technologies.

The connections queue is currently oversubscribed. Delivery relies on reforms to the connections queue, planning issues being resolved and market structures providing the right revenue opportunities. These challenges were also raised by many stakeholders.

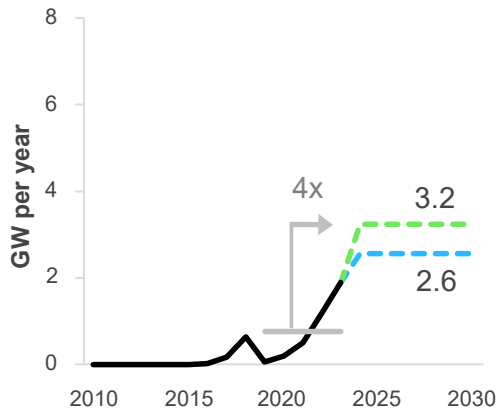


Figure 4: **Batteries scale up needed**

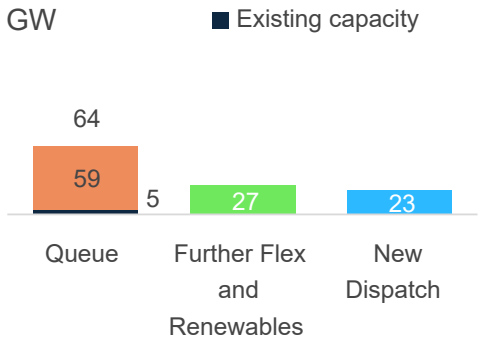


Figure 5: **Connection queue versus pathway capacity**

Long duration energy storage

Long duration energy storage (LDES), such as pumped hydro storage and liquid air, are particularly important for longer term flexibility and additional operability needs (such as during extended periods of wind drought or to spread demand between weekend and weekdays).

The pipeline for options ready to deploy by 2030 is limited and our analysis sees capacity potentially increase from 3 GW in 2023 to 5-8 GW, with storage capacity growing from 28 GWh to 50-99 GWh[4] by 2030. This would require completion of Great Britain's first pumped hydro stations in more than 40 years. Pumped hydro is a mature technology and, while work has started on some sites, the rest would need to commence urgently if they are to be operational by 2030, particularly given complex workforce requirements and the need to manage the impacts to local infrastructure and communities.

New and innovative LDES, liquid air, compressed air and longer-duration batteries (10+ hours) projects have successfully operated at a small scale. Work has started on new projects and feedback from stakeholders was that the lower range is within what they can build for 2030.

Stakeholders welcome deployment of LDES and believe there could also be potential in redeveloping former hydro power stations across the country. It was noted that decision making on funding mechanisms would need to speed up to accelerate delivery.

4 Lower LDES storage capacity value updated from 81 to 50 GWh on 10/03/2025, due to an initial typographical error in the report and data workbook.

Interconnection

Interconnectors allow Great Britain and neighbouring markets to benefit from different supply mixes, generation patterns and demand patterns.

We assume projects with regulatory approval deliver by 2030 in line with their regulatory delivery dates, increasing capacity from 8 GW in 2023 to 12 GW in 2030. Our analysis shows Great Britain becomes a net exporter of electricity across the year, switching from the current situation, where we are a large net importer.

Careful consideration is required around the arrangements for interconnector flows, especially where these could incentivise gas-fired generation in Great Britain to run for export across interconnectors. Arrangements should balance economics, achieving Great Britain's clean power metric and the impact on power sector emissions across the wider region.

2.3 Electricity Supply

The vast majority of Great Britain's generation (77-82%) will come from renewable energy for a clean power system in 2030, with the majority of this from offshore wind. This will be supplemented by firm sources of generation (such as nuclear) and low carbon dispatchable sources (such as bioenergy, gas with CCS and hydrogen).

Significant growth in generation needed

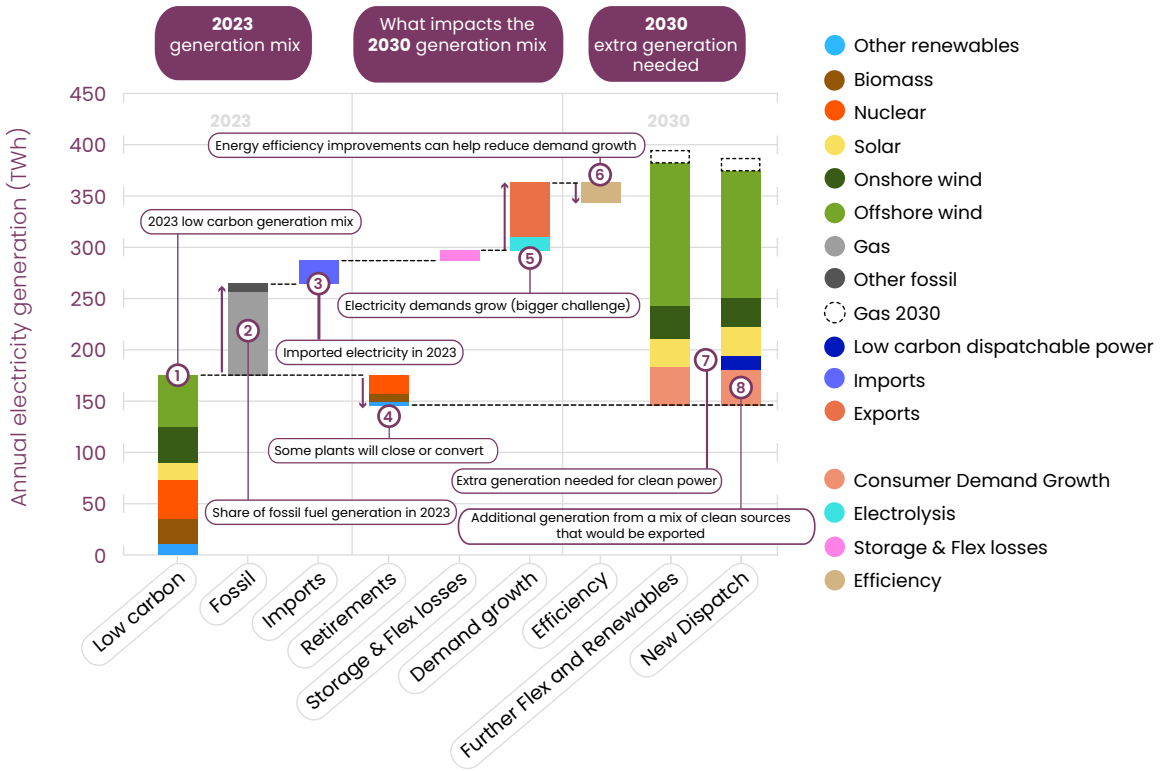


Figure 6: **Increase in electricity supply for 2030**

Weather dependent renewables

80-84% of GB's 2030 supply[5]

Wind and solar technologies already have a strong track record of delivery and have seen rapid growth in recent years. A further scale-up in delivery is needed across the key technologies for clean power by 2030.

Offshore wind

48-53% of GB's 2030 supply

Access to suitable offshore locations and favourable wind conditions provide ideal geographic and natural resources for offshore wind, making it a highly effective option for generating clean energy for Great Britain. The clean power system must be based on offshore wind. It is the only clean option available at the scale required by 2030, with a lower cost compared to burning gas in existing power plants. An additional 28-35 GW of offshore wind is required to reach a total of 43-50 GW in 2030, with average load factors (the proportion of energy generated compared to the maximum possible generation capacity) of 43% generating 167-187 TWh. Our load factors are sourced externally, are site specific for a typical weather year and change over time with the development of wind turbines. If load factors as high as 63% (as proposed by DESNZ in their Generation Cost 2023 publication) can be achieved then the same generation levels could be delivered with around 6 GW less new build of offshore wind.

While the connection queue has enough projects to expand from the current 15 GW up to 54 GW by 2030, reaching even the lowest level of 43 GW in our pathways will be challenging.

Data from the Crown Estate and Crown Estate Scotland published in September 2024, shows that 20% of the offshore wind pipeline capacity is committed, split roughly equally between projects with financial support and those already under construction. Around a third of the pipeline capacity is under development, with just over a quarter of that already having secured planning consent. Around 30% of the pipeline capacity is in the pre-planning stages and the remaining 17% of pipeline capacity is in very early development, unlikely to be delivered by 2030.

Offshore wind contracting and deployment must happen at unprecedented pace, far exceeding previous records. Our pathways require around 4-10 GW from each of allocation rounds[6] 7 (in 2025) and 8 (in 2026). To put that into context, the highest allocation round to date awarded 7 GW in 2022 and build can be cancelled or delayed after a successful auction. Once contracted, annual deployment of offshore wind will have to be at a scale multiple times higher than ever achieved before – as shown in the figure below.

The lag between awarding of contracts to commissioning of built capacity will need to fall from the historical experience if projects contracted in 2026 are to deliver by 2030. And unless newly contracted projects can deliver by 2027, buildout rates will be uneven, with even higher build needed in the following years.

5 These percentages are based on the range of our New Dispatch and Further Flex and Renewables pathways.

6 The Contracts for Difference (CfD) scheme is the government's main mechanism for supporting low carbon electricity generation. Allocation rounds are annual auctions for CfDs.

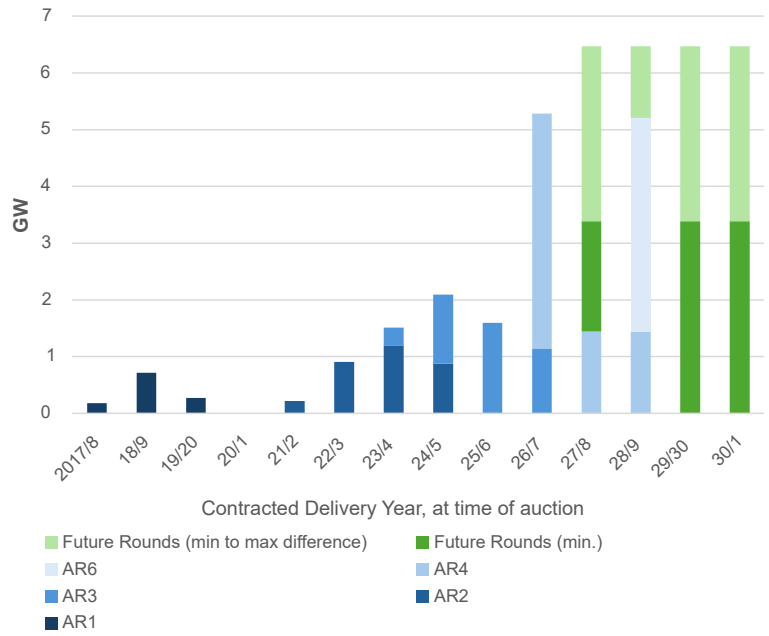


Figure 7: **Historic and required CfD allocation round (AR) capacity under our pathways**

The development of offshore wind relies on substantial onshore infrastructure to support the transmission and distribution of generated electricity. This infrastructure includes substations, transmission lines and grid connection points, which are essential for efficiently integrating offshore wind energy into the national electricity grid and ensuring reliable delivery to consumers.

Stakeholders believed that offshore wind and other renewable projects are vital for the 2030 clean power goals. Some believe that delivery of 55 GW (the upper limit of our sensitivities) pushes the bounds of deliverability due to capacity and timeline constraints, which reinforces the findings of our analysis of the project pipeline. We have reflected this in our analysis by reducing the upper range within our two primary pathways to 50 GW, while continuing to explore the higher capacity through a sensitivity.

Onshore wind and solar

29–30% of GB's 2030 supply

Onshore wind and solar are the cheapest clean power options available, with largely complementary generation patterns and with potential, in some cases, to locate away from transmission constraints, often by connecting to the distribution network. These can deploy at a faster rate than offshore wind and include smaller community-scale projects.

Our pathways see a doubling of onshore wind capacity from 14 GW in 2023 to 27 GW by 2030 and a trebling of solar from 15 GW to 47 GW by 2030 which means scaling up annual delivery as shown in the figures below. These projects produce less annual output per GW of capacity than the equivalent offshore project.

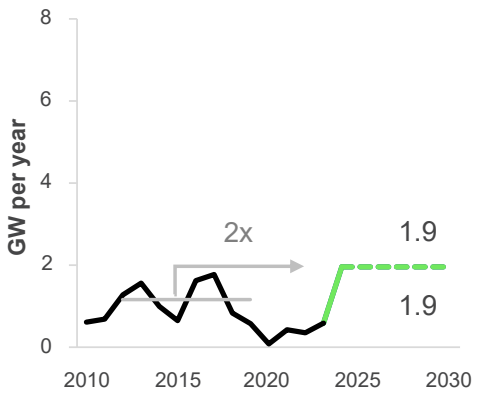


Figure 8: Onshore wind scale-up

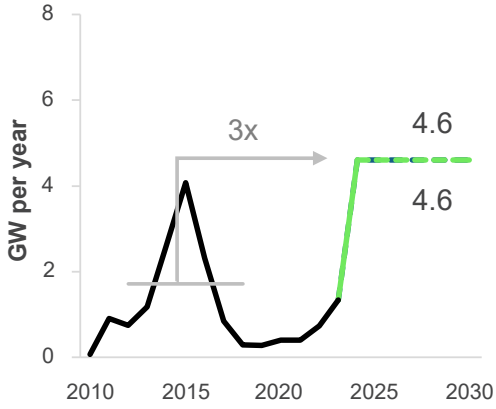


Figure 9: Solar scale-up

The distribution network will play an important role in the deployment of renewable generation, with 29% of onshore wind and 90% of solar capacities connected to the distribution network in our pathways. The 2030 connection queue has higher capacities of solar and onshore wind than is required. The technologies are mature and have an effective support mechanism in place, while the lifting of the planning restrictions in England in July 2024 provides further scope for growth in onshore wind.

There were stakeholder views that, while deployment is possible, this could be limited by enabling work, supply chain, planning resource and high-quality engagement that considers the needs of different projects and communities.

Firm generation

14-15% of 2030 supply

This includes plants that are not weather-dependent and have limited flexibility. These typically run at full availability.

Nuclear

Nuclear power will play an important role in achieving a clean power system by 2030 and beyond into the 2030s, when a new generation of nuclear plants can help replace retiring capacity and meet growing demand as the economy electrifies.

Most of Great Britain's existing nuclear plants are due to retire before 2030 and these are currently being considered for life extension, subject to approval from the Office for Nuclear Regulation. A new plant is also under construction at Hinkley Point.

In combination, we assume these see a reduction in Great Britain's nuclear capacity from 6.1 GW in 2023 to 3.5-4.1 GW in 2030, with scope for more new build beyond 2030. Our baseline assumption includes Sizewell B, one unit at Hinkley Point C and a lifetime extension of one AGR unit.

Some stakeholders also raised the possibility that new Small Modular Reactors (SMRs) could be built and deliver clean power by 2030. Should that be possible, it could compensate for any shortfall should plant life extensions not proceed as we have assumed and/or if Hinkley Point C does not begin generation until after 2030. If SMRs can be built in addition to our other assumptions, that could compensate for under-delivery elsewhere in the clean power programme. Beyond 2030, it is clear that SMRs and/or other large nuclear projects provide solid base generation that delivers a large contribution to clean power. There is also the opportunity for these plants to provide heat.

Combined heat and power

Unabated gas combined heat and power (CHP) plants provide energy for industrial process heat requirements or for space heating requirements in heat networks. These are typically driven by heating demand and offer greater heat output than power output. In line with the Climate Change Committee's classification, we include their emissions in the industrial sector, not the power sector. Nonetheless, these will need to be decarbonised in the long run, and we would not consider new CHP plants to contribute to meeting the clean power objective. CHP plants provide 12 TWh of electricity in our modelling in 2030.

Energy from waste

EfW plants exist primarily as a waste solution, not a power solution. As with CHP, these will need to decarbonise in the longer term. EfW plant emissions are counted in the waste sector, not the power sector in line with the Climate Change Committee's classification. Energy from waste contributes 12 TWh of electricity in our modelling in 2030. This includes waste CHPs.

Low carbon dispatchable generation

Gas CCS and Hydrogen

0-3% of 2030 supply

These plants can turn up and down to match demand needs and can fill gaps during periods of low renewable output. Although this can pose some challenges for their operation, it is an important requirement of a clean power system in 2030. Higher levels of dispatchable generation reduce the need for weather-dependent renewables significantly and the need for very long-duration energy storage.

After 2030, low carbon dispatchable power could be built up to replace the need for the remaining unabated gas generation. Hydrogen in the long run can be produced via electrolysis at times of high renewable output and stored for later use when renewable output is low, without reliance on fossil gas or residual emissions. However, large-scale hydrogen storage appears unlikely before 2030 and relative costs for hydrogen and gas with CCS are uncertain. We therefore group these technologies in our clean power pathways.

The Government has announced funding for a gas with carbon capture and storage (CCS) plant as part of its Track 1 process. There is a wider pipeline of potential projects, which if delivered by 2030, would help deliver a clean power system and could support a deeper reduction in use of unabated gas further below 5%.

Both gas with CCS and hydrogen to power are first of a kind technology for Great Britain and up to 2.7 GW through a combination of hydrogen to power and gas CCS is included in our clean power pathways.

Low carbon dispatchable power connected to the distribution network can assist under times of stress. Our analysis includes just under 0.3 GW capacity at low load factors, where they may need to operate to reduce network constraints. This could be met by a range of fuels, including biomass, biomethane or hydrogen, depending on local access.

Biomass and Bioenergy with Carbon Capture and Storage (BECCS)

Sustainable biomass provides a renewable low carbon power source. Great Britain's units are currently incentivised to run for maximum output, under contracts that are due to expire in 2027. For those that fit CCS, high load factors will remain desirable, but the role of biomass (without CCS) should shift to dispatchable to help meet demand during times of low wind and solar output. This will make the best use of the limited sustainable biomass resource. In 2030, the biomass and BECCS capacity of 3.8 - 4 GW in our pathways is a reduction from the 4.3 GW in 2023 partly as we assume some converts to use CCS, which means a reduction in how much power is produced from the same unit.

Biomass generally and BECCS (biomass with carbon capture and storage) were supported in DESNZ's 2023 Biomass Strategy,[7] which emphasised the importance of sustainability. These technologies can contribute to a resilient energy supply. To ensure biomass use delivers its role in the UK decarbonisation goals, there are already mandatory stringent sustainability criteria in the power, heat and transport sectors.

The CCC included bioenergy with CCS (BECCS) in its pathways to net zero as a means of removing carbon from the atmosphere, identifying this as a best long-term use of scarce bioenergy resources. In line with the CCC's 2020 advice on the Sixth Carbon Budget[8] and our July Future Energy Scenarios,[9] we assume conversion of at least one biomass unit to BECCS by 2030 in our pathways. We assume that this operates at high capacities to maximise carbon removal from the atmosphere.

Should there be no biomass CCS conversions by 2030, a clean power system can still be reached as the unconverted biomass plants would have slightly higher capacity and use slightly less fuel. These plants could still provide the required clean power when needed. However, there would be less removal of carbon from the atmosphere, making wider carbon targets harder to meet.

7 Biomass Strategy 2023
8 Sixth Carbon Budget
9 Future Energy Scenarios

Alternatives

Our clean power pathways push the limits of what is feasibly deliverable, but there are some flexibilities at the margin. For example, onshore wind and solar could substitute for offshore wind, more demand side response could substitute for batteries (and vice-versa); more hydrogen or CCS could substitute for all other options.

There is also a wider set of less advanced alternatives that we have not included in our pathways. These could, nonetheless, feasibly contribute in 2030 and relieve pressure in other areas.

- **Biomethane.** If further sustainable supplies can be developed, such as waste based or anaerobic digestors on farms, biomethane could provide an additional clean dispatchable option in the power sector.
- **Dedicated imports.** Projects to ringfence renewables overseas for dedicated export to Great Britain. It will be for Government to decide whether to support these projects and the terms for doing so. We have not undertaken a separate deliverability assessment for this report.
- **Tidal.** A small amount of tidal generation was awarded a contract at the recent renewable auction. It remains higher cost when compared to wind and solar and is not, therefore, expanded upon in our pathways. Although output is variable, it is predictable and follows a different pattern to wind and solar and would be feasible if costs fall.
- **Small modular reactors (SMRs).** A programme to roll out new nuclear SMRs is being developed for the mid-2030s. SMRs can be operated more flexibly than larger plants, although their economics as a capital-intensive project still favour baseload operation. Government could consider the value of bringing this rollout forward to 2030, which some stakeholders suggested would be possible under the right conditions.

Unabated gas generation

While levels of electricity from gas generation will reduce, as the main source of dispatchable generation at the scale needed today it will still be required for security of supply, filling shortfalls during periods of low renewable output.

The portfolio of gas-fired power stations provides less than 5% of Great Britain's generation in our clean power pathways for 2030, supplying 14-15 TWh of generation (in a typical weather year). Typically, gas would run in winter in periods with low wind and sunshine when renewable output is low. Generation could be concentrated in a few short periods through the year, with most of the fleet running over a few days delivering 1-2 TWh. Electricity from gas generation generally should not be produced for export in a clean power system.

Around 35 GW of unabated gas (broadly consistent with the size of the existing fleet) will need to remain on standby for security of supply. This requirement for gas capacity will remain throughout the early 2030s until larger levels of low carbon dispatchable power and other flexible sources are able to replace it. Our analysis meets current security of supply standards.

Some stakeholders raised the importance of understanding the challenge of operating and maintaining an aging gas fleet that is running less frequently. This also includes workforce considerations. Reform of current market mechanisms, such as the Capacity Market, could help enable the continued operation of unabated gas for security of supply. Some stakeholders also noted the notice periods needed to turn on the gas generation fleet and the importance of ensuring these assets remain fit to run with a very different operational profile.

Some stakeholders also spoke of the need to understand the potential suitability for conversion to low carbon dispatchable plants, which influences the way plants are operated and maintained in the near term.

We have considered the impact on gas networks in Section 2.5.

2.4 Electricity networks

A clean power system in 2030 will need to move more power over greater distances. Without grid expansion, it will not be possible to fully utilise renewables and gas will be needed instead. With no grid expansion, gas generation would only fall to 8.1% of generation, rather than to below 5% as needed for a clean power system, despite progress in other areas. Timely and complete delivery of all required network projects is a major infrastructure challenge.

The networks required for delivering clean power will need investments in transmission and distribution. These investments will fall into different categories driven by various factors. They include strengthening the transmission network to enable the efficient transfer of clean power from generation sites to areas of demand. Additional infrastructure will be necessary to connect individual power generators and meet specific demand requirements. Other projects are also required to ensure a safe, secure and resilient network. The scale of investment in all these categories is expected to be significant. Similarly, investments will be required in the distribution networks to connect new sources of power generation and demand. This will facilitate the safe transfer of power within the network, as well as to and from the transmission network.

The work required to connect individual power generators, meet specific demand requirements, and to ensure a safe, secure and resilient network will be identified through the reformed connections process. The high number of network reinforcements, connections and the associated enabling network and substation projects will require a coordinated and whole system approach to considering the network planning and delivery implications at both transmission and distribution levels. This may mean that additional projects required for clean power are identified later. More collaboration, coordination and understanding of the interactions across the whole network will be required and this will be facilitated by NESO.

Wider transmission for clean power

The wider transmission network build programme to 2030 was set out in the Pathway to 2030 report[10] in 2022. It requires up to £60 billion of cumulative investment to deliver around 1000 km of onshore and over 4500 km of offshore network and enabling projects. This would more than double the total built in the last 10 years. Alongside the 2030 network delivery, further reinforcements must proceed to support continued growth in demand and renewables in the 2030s, and progress needs to be maintained to ensure timely delivery of later network projects

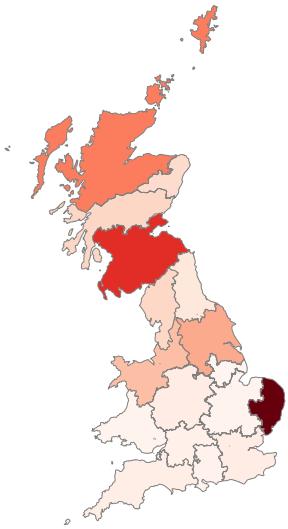
The delivery of the 2030 transmission network is underway based on existing recommendations and plans. In the Pathway to 2030 report, 94 wider transmission projects were recommended across Great Britain. This has since been revised to 88 projects, after detailed design work by transmission owners (TOs) and NESO. All TO investment projects will need to be funded through the price control mechanism.[11]

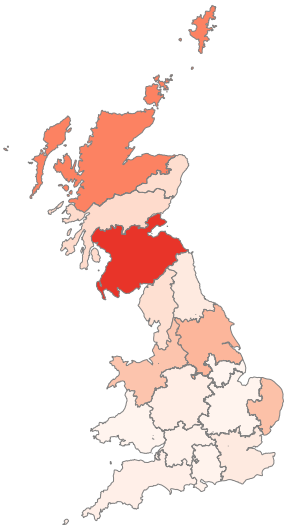
For this report, we assessed whether the Pathway to 2030 recommendations would be able to deliver the clean power pathways set out in Chapter 3. We also considered the impact of any of these network projects being delivered after 2030 and the advantages of bringing forward any projects planned for after 2030, if feasible. We considered both the impact on our clean power metrics, especially any extra need for gas generation resulting from transmission constraints, and the added cost to consumers caused by constraints.

We conclude that to meet clean power in an efficient way in 2030, of the 88 wider transmission projects, 80 must be delivered by 2030.

10 Pathway to 2030 Report

11 The price control mechanism is a process led by Ofgem to balance the relationship between investment in the network, company returns and charges for operating the networks.





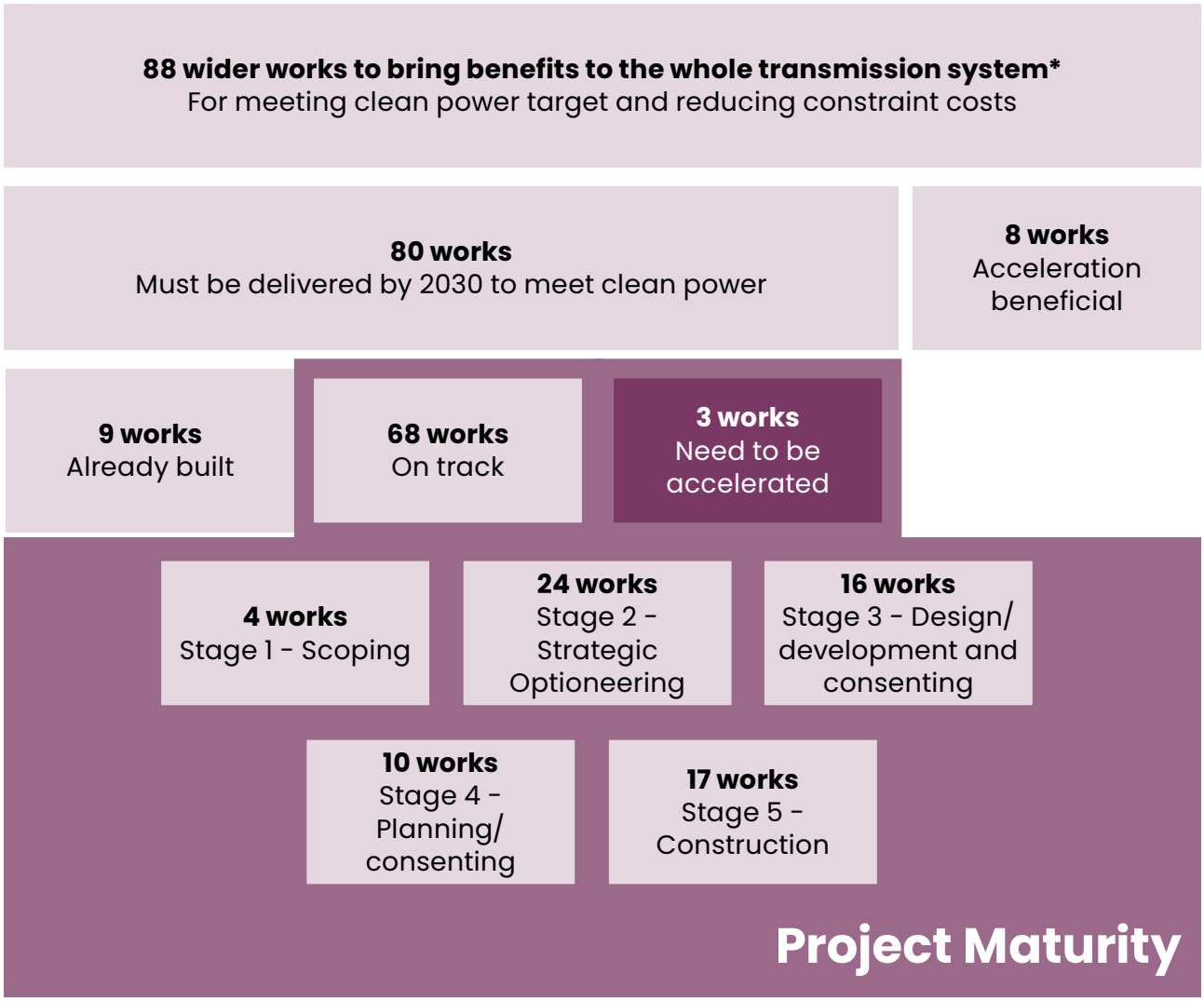
The network we have today is significantly limited in capability. The heat map shows the areas where clean power would potentially be constrained on the transmission network, resulting in about £12.7 bn in constraints in 2030 and 8.1 % unabated gas.

However, the timely delivery of 80 works recommended for 2030 will result in a threefold reduction in constraint costs in 2030 and 4.97% unabated gas usage across the year.

Figure 10: **Potential constraint areas**

To date, nine of these have been built and 68 are in development, with expected delivery dates by 2030 or earlier. Three projects identified as being critical to clean power have a current delivery date after 2030. These projects will need to be accelerated to 2030 delivery.

Project statuses are summarised below and the list of projects is provided in Annex 3.



**These are wider transmission network reinforcements - they may not include all works, for example, works driven by connection enabling works, operability etc.*

Significant investment in transmission and distribution networks is essential to connect generation, ensure system security and facilitate power transfer from generation sites to demand centres. The wider transmission network is crucial for clean power, and additional investment is necessary. Local network projects will be identified based on specific generation units through the reformed connection process. This may also identify other projects to ensure a safe and secure system.

In parallel, NESO will also continue to explore grid-enhancing technologies (GETS). GETS are hardware and software solutions that allow capacity to be increased along existing lines, allowing further capacity to be utilised ahead of and in parallel with network upgrading and new build. Some of these have already been deployed (e.g. smart valves etc.) and more are being explored.

Category	Key
New offshore network infrastructure	
New onshore network infrastructure	
Voltage increase on network	
Existing network upgrade	
Substation upgrade or new substation	
Existing Network	

*Amber dashed lines represent reinforcements required for this blueprint, but current delivery date estimates sit beyond this.

Note: all routes and options shown on this map are for illustrative purposes only.

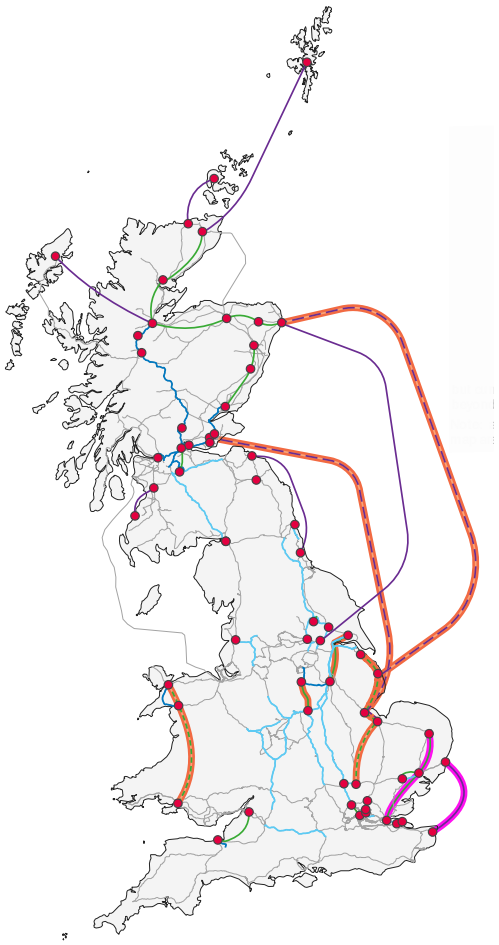


Figure 11: **Map of 2030 transmission network reinforcements for a clean power system**

The need for pace in delivering the clean power transmission network

As set out in the Electricity Networks Commissioner report,[12] speeding up the delivery of strategic transmission is both critical and challenging. Stakeholders understand that it is crucial to deliver at pace and that decisions made for clean power by 2030 must not inadvertently disrupt in-train critical programmes of project. To have a chance of bringing forward delivery dates on a number of key projects would require significantly accelerating and fast tracking Development Consent Order processes and changes to the Town and Country Planning Act.

Three projects[13] have been identified as critical to delivering a network which supports the clean power pathways, but at present have delivery dates after 2030. Support is therefore needed to bring these projects forward for 2030 delivery. These are projects in East Anglia and in the southeast that are critical for connecting offshore wind in the North Sea and supporting the flow of clean power. Our assessment suggests that without these projects, the clean power objective would not be achieved, leaving the clean power target short by around 1.6% in 2030 (assuming a typical weather year) and consumers could face extra constraint costs of around £4.2 billion in 2030.

12 .gov.uk/government/publications/accelerating-electricity-transmission-network-deployment-electricity-network-commissioners-recommendations

13 These projects are Norwich to Tilbury (these projects have two codes in our network planning processes AENC and ATNC), Sea-Link (SCD1).

To bring delivery forward to 2030, urgent and significant action is needed on removing the key challenges to delivery - including regulatory funding, supply chain and accelerated planning processes.

Supply chains. Our stakeholder engagement has indicated some transmission owners are affected by challenges in securing the required supply chain capacity across the build programme. There is also a need to support enhanced ways of engaging with the supply chain, such as portfolio procurement. These barriers will need to be unblocked to enable timely delivery.

Distribution Network Operators. Stakeholder engagement highlighted the value in planning network development holistically, considering the needs of Distribution Network Operators. Taking this approach will lead to improved outcomes and efficiencies around network reinforcements. We further consider the distribution network in Section 2.5.

Minimising constraint costs. The network should be designed in a way to minimise constraint costs. The planned investment for 2030 will help to efficiently transmit clean power from where it is generated to where the demand is highest. However, the network will still have constraint costs, which vary in quantity depending on the pathways. This is where grid-enhancing technologies can maximise their contribution.

Bringing forward additional projects (beyond the 80 described above, which are needed to meet the clean power objective) would bring further benefit in reducing the use of unabated gas and a further reduction in constraint costs. However, it would be a very significant undertaking.

- From Pathway to 2030 there are eight further projects, with delivery dates beyond 2030.
- Six of these projects, we understand from TOs, could be accelerated towards 2030 and any such acceleration would bring reduced constraint costs. For example, if these projects could be accelerated, they are forecast to provide a significant benefit in reducing constraint costs by around £1.7 billion in 2030. However, accelerating them to 2030 is likely to be extremely difficult.
- Two projects are at an earlier phase of development and, we understand from TOs that they cannot be accelerated from their existing post-2035 delivery dates, although any acceleration will bring benefits.

We will continue to work with TOs on options for the acceleration of critical strategic infrastructure, including the option for additional offshore High Voltage Direct Current (HVDC) reinforcements where they bring value. A list of these projects is provided in Annex 2.

Of the 68 projects that are on track for delivery by 2030, we have further identified those which will have the biggest impact on the clean power metric and constraint costs were they to deliver after 2030. In many cases, the delay of even a single project until after 2030 could add over £0.5 billion to annual constraint costs and increase emissions.

	Further Flex and Renewables		New Dispatch	
2030 clean power pathways run with:	**unabated gas % in 2030**	**constraint costs in 2030, £billion**	**unabated gas % in 2030**	**constraint costs in 2030, £billion**
The 2024 transmission network (assuming no further deployment)	**8.1%**	**£12.70 billion**	**7.7%**	**£10.90 billion**
The network currently expected for 2030 (not including AENC/ ATNC/SCD1)	**6.6%**	**£7.79 billion**	**6.2%**	**£6.58 billion**
The network required for clean power, including the three critical projects being delivered in 2030	**4.97%**	**£3.57 billion**	**4.99%**	**£2.84 billion**
The network if all 7 further projects were accelerated to 2030	**4.1%**	**£1.86 billion**	**4.1%**	**£1.07 billion**

Table 1: **Constraint costs and unabated gas % under different pathways**

Compounding delays of multiple projects can easily escalate these by billions of pounds, adding to the risks for the clean power goal. Further analysis is presented in Annex 2.

2.5 Distribution networks for clean power

Distribution networks are critical for meeting clean power in an efficient way in 2030. Connecting additional clean power sources, such as solar and wind, will play an important role in displacing the need for unabated gas.

The distribution network is managed by distribution network operators (DNOs), who are responsible for the infrastructure that delivers electricity from the transmission network to homes and businesses. GB has six main DNOs (Electricity North West, Northern Powergrid, SP Energy Networks, Scottish and Southern Electricity Networks, UK Power Networks and National Grid Electricity Distribution). In addition, there are independent DNOs (IDNOs) that can connect in at either transmission or distribution.

Developing new distribution network infrastructure (including substations and circuits) is generally easier than transmission infrastructure due to several factors:

- **Lower voltage levels:** Distribution networks operate at lower voltages, which simplifies construction and maintenance compared to the high-voltage transmission networks.
- **Radial configuration:** Distribution networks are often designed in a radial configuration, meaning power flows in one direction from the substation to consumers, reducing complexity in design and construction.
- **Proximity to end users:** Distribution networks are closer to end users, resulting in shorter distances between substations and consumers, which minimises the amount of infrastructure needed.

- **Simpler protection schemes:** Distribution networks have lower fault currents and simpler protection schemes, making it easier to design and implement new circuits.
- **Regulatory processes:** The regulatory and permitting processes for distribution networks are often shorter than those for transmission networks, expediting approval and construction timelines.
- **Planning:** Generally fewer planning and DCO applications are required at lower voltages as many new distribution connections require upgrades to existing overhead lines rather than new routes and are operating at lower voltages.

While the above bullet points highlight why DNO networks can be a key enabler for accelerated delivery, it should be noted that there are significantly larger volumes of connections required to install the same generation capacity at distribution rather than at transmission.

DNOs supplied the volume of renewable generation in their connection queue leading to 2030, allowing us to confirm the assumptions in our pathways. The information we received from them suggested that there are two to three times more projects awaiting connection in the queue than required in our pathways. However, for some renewables in certain regions, there is currently an undersupply of queued projects.

DNOs also provided the volume of generation currently in the queue that could be accelerated and connected if the transmission reinforcement requirement was removed. We used this volume to identify the total volume of solar and wind generation in the pipeline that had the potential to be accelerated and brought forward to connect by 2030 if the queue could be revised to meet targets for clean power in 2030.

We then tested the impact of accelerating the volume of additional renewable generation identified in the pipeline by 2030 and what it could do to the clean power metric. Our analysis showed that this decreased the proportion of unabated gas generation across the year to between 0.5-0.8% unabated gas across our pathways.

This additional volume of renewables on the distribution network results in a greater utilisation of batteries connected to the distribution network, as they charge with excess solar and wind energy during the day and discharge the stored energy at night. Note that this will have a distribution network impact that may limit distribution capacity to connect new renewable generation.

Accelerating additional solar and wind generation in the distribution network pipeline is critical to reaching clean power at pace and reducing the risk of under delivery of renewables.

NESO will work with the DNOs to review the volume of generation that requires minimal or no additional network investment at transmission and can be accelerated, provided they align with government's plan for clean power by 2030.

2.6 Gas, hydrogen and CO_2 networks

In 2030, gas-fired generators continue to be of vital importance to the operation and security of the energy system, because of their ability to bring large volumes of flexibility through fast start-ups and shut-downs. The upstream gas networks are therefore critical to providing that security.

Our gas network analysis shows that the gas transmission network can absorb the impact of the gas-fired generation fleet's start-up behaviour, for both summer and winter conditions. Our gas network analysis is presented in Annex 2.

Stakeholders had concerns that additional requirements of gas generation would require the cancelling or postponing of asset outages (compressor stations etc.). We note that operating the NTS with a relatively high opening linepack,[14] to mitigate unexpected unavailability, may require more facilities to be operationally available, potentially impacting the availability of outage windows.

Delivery of transport and storage infrastructure required to support low carbon dispatchable power for 2030 is critical. In this timeframe there is some optionality across CCUS and Hydrogen to Power, but both rely on critical infrastructure.

There are currently no major hydrogen or CO_2 transportation pipelines in operation in Great Britain. However, projects are in development which are linked to Track 1 industrial clusters.[15]

The key to the success of developing these projects is getting government funding, signalling and policy to develop the projects that will facilitate more private investment.

14 Linepack is gas stored within the pipes of a gas transmission or distribution network.

15 HyNet and East Coast Cluster were selected in 2021 as part of the Government's cluster sequencing process to deploy carbon capture and storage in a minimum of two industrial clusters in the mid-2020s.

2.7 Network access

Network access involves the planning of outages of electrical assets and equipment (e.g. circuits and breakers) on the power system to carry out maintenance and improvement works. Outages of critical infrastructure are needed to deliver works on the system safely. There is a physical limit to the number of outages that can take place at any one time due to the impact on system security and costs borne by consumers. Any increase in work taking place must be carefully managed to ensure that the power system remains secure and stable.

Approximately 8,000 outages take place on the electricity transmission system each year. Typically, 40% of these will have been agreed 12 months ahead of delivery, with the remainder mostly requested and agreed in the year that the outage takes place.

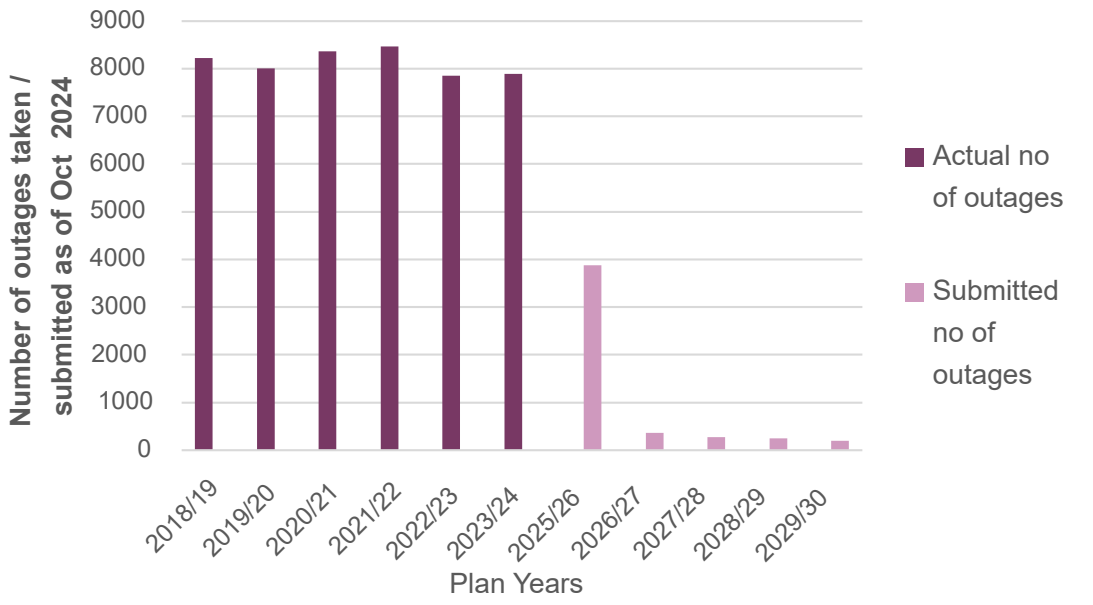


Figure 12: **Number of outages taken / in plan**

A more strategic approach to system access planning across industry will be required to provide assurance around the deliverability of clean power 2030 and to address the network access challenges in timescales where there are a greater number of options available to minimise costs. As well as providing a maximum amount of system access through an optimised plan across years, action should also be taken to maximise the amount of work that is carried out within each outage window. Furthermore, less intrusive ways of working such as off-line build and temporary lines will be required.

Spatially, there are also outages in regions of the network that can cause system constraints as they reduce the amount of generation capacity that can be transferred from one area of the network to another. To manage this and ensure the power system remains secure and efficient, NESO operates within a market to reduce or increase generation in one area and then balance that action in another. It is essential that the outages on electricity network assets are planned and coordinated effectively to ensure new connections and equipment are delivered in an optimised way that allows as many projects to be accelerated and delivered as possible, whilst minimising the associated constraint costs.

Further detail on our analysis is presented in Annex 2.

2.8 Connections

Connections reform

Delivery of a clean power system in 2030 will require an installed generation and storage capacity of around 210-220 GW and significant levels of new demand connections to the electricity network across transmission and distribution. In section 4.3, we consider the reforms that are required to connections processes (both for queue management and wider network-related reforms) to deliver the right technology, in the right location at the right time. These reforms are broad and deep. They are largely being conducted through formal open code governance processes which necessitates extensive industry engagement and feedback, as well as complex assessment of potential actions and associated impacts.

The indicative timeline for connections reform runs through to spring 2025, following which significant work will be required to issue new connection offers in line with the updated rules and government's plan for clean power by 2030. It is imperative that the reform timeline remains on track, with all parties playing their part to ensure that projects needed for 2030 and beyond can progress in a timely manner without undue uncertainty or delay.

Connections queue

The current connection queue has a greater volume of projects to 2030 than is required in our clean power pathways, across the key technologies.

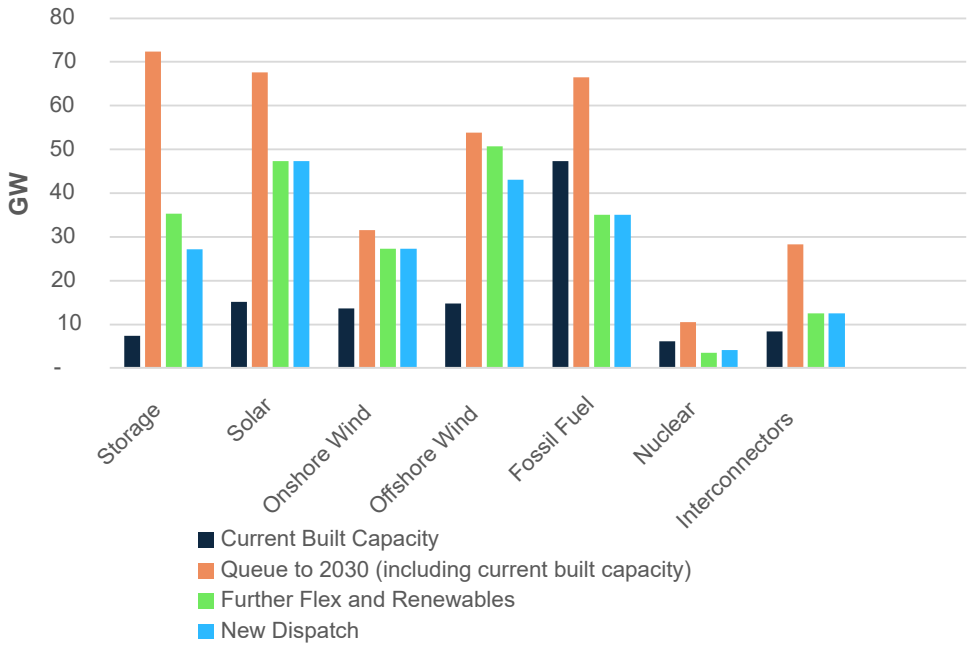


Figure 13: **Current connections queue against clean power pathways by technology (GW)**

Central to the proposed connections reform is the creation of a direct link between the technology and capacity needed, by location, in the government's plan for clean power by 2030, and the connection offers that are made.

The spatial maps below show the capacity and technology needed to align with our Further Flex and Renewables and New Dispatch pathways.

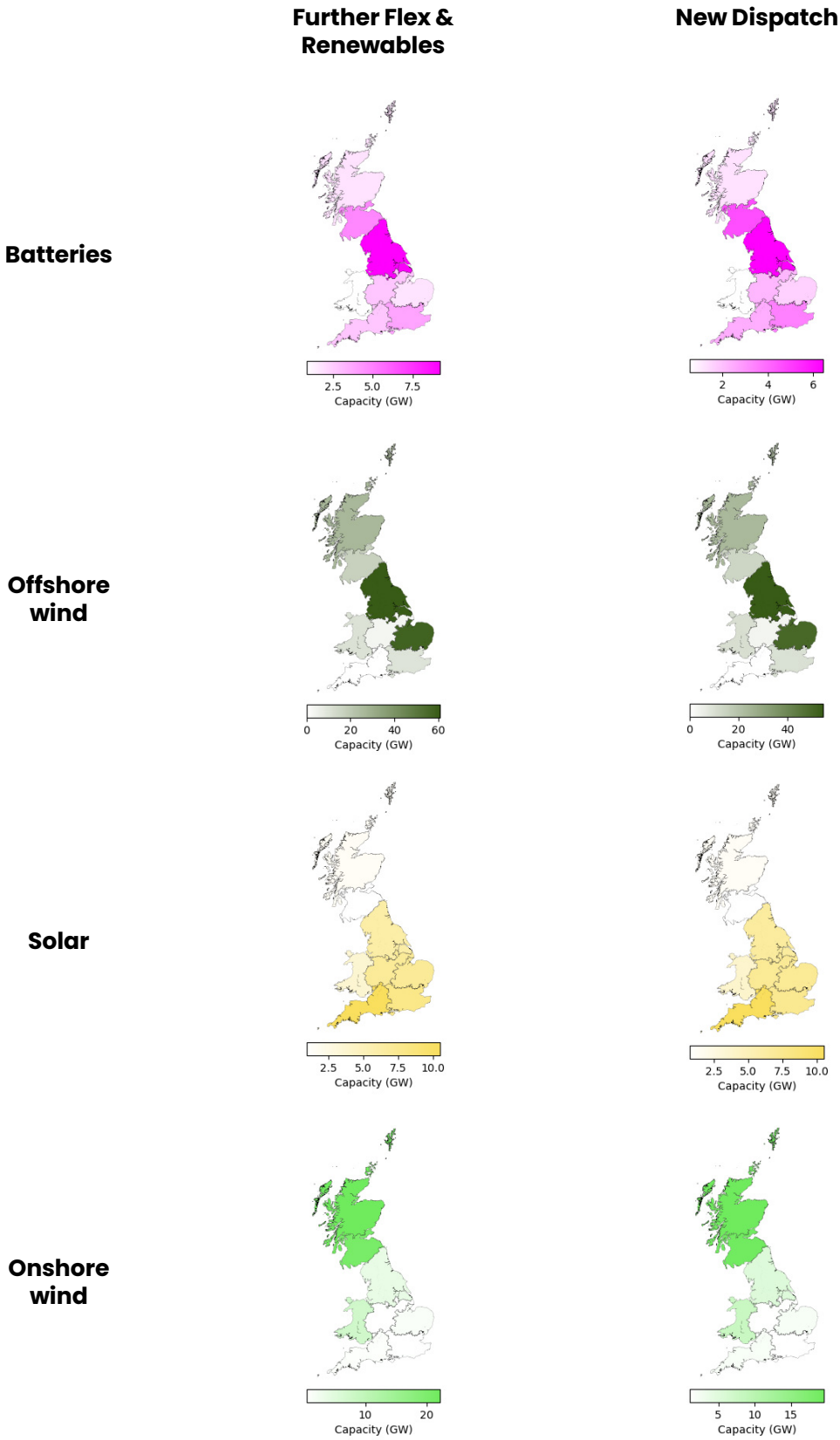
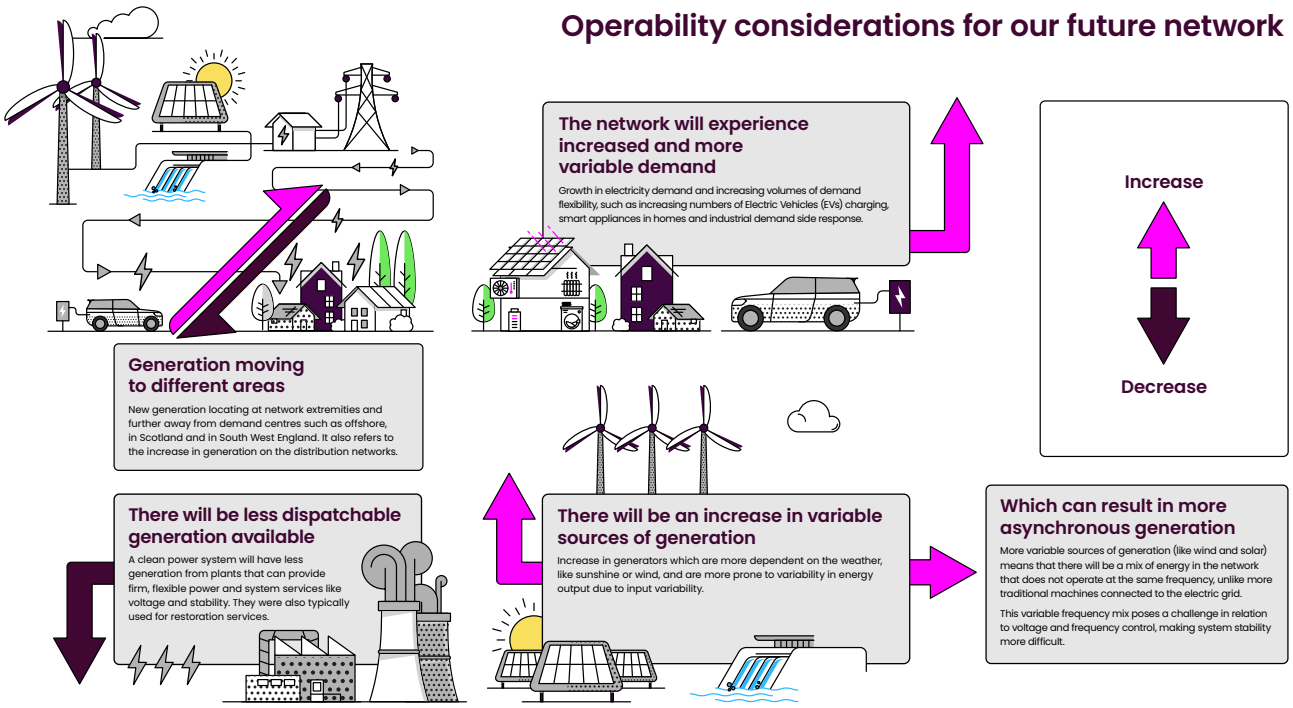


Figure 14: Spatial capacity maps

2.9 System operability

Electricity network operability is maintaining a stable, reliable and efficient power grid. It means ensuring the system can handle fluctuations in supply and demand, integrating renewable energy sources and responding to potential disturbances or faults. As Great Britain transitions to a clean power system, the operability challenge evolves.



Action is already being taken to ensure a stable, reliable system. As NESO, we will be able to operate the electricity system with zero carbon for specific hours in 2025. Achieving year-round operation of a clean power system will require acceleration of regulatory changes and enablers to ensure sufficient new assets and services are in place by 2030.

Traditional fossil-fuelled generation exhibits technical characteristics that have allowed system operators to successfully manage secure and safe electricity systems. As these types of generation decrease, the characteristics they have need to be replaced by other technologies and solutions.

In Great Britain, NESO has already taken big steps to prepare for a safe and reliable decarbonised electricity system. Through this work we understand the actions that need to be taken for reliability and safety, and we are confident that the cost of the provision of these services is lower than it would be on conventional power stations if they were only running to provide the services.

To operate a clean power system safely, securely, economically and efficiently requires resolution of operability challenges across stability, frequency, thermal constraints, voltage and restoration.

- **Stability:** To ensure the system can securely and reliably withstand unplanned events, for example the loss of a generator or a fault on an overhead line, there needs to be enough 'inertia' and 'short circuit level'. With the move to renewable generation, NESO needs to increase the number of technologies that can provide these services, such as additional synchronous condensers or batteries or renewable devices with grid forming inverters. With the establishment of our network services procurement (NSP) markets, we have the mechanisms in place to procure the services we need.
- **Frequency:** As there is less 'inertia' on the system, our ability to maintain the system frequency close to 50 Hz to balance real-time supply and demand requires a quicker response. NESO has already started this transition and our current services are pioneering in delivering the initial frequency response within one second. Hence, we are in a good place to understand how to manage the frequency of the system as we move to clean power. There will be a requirement to increase the volume of these services through our established frequency markets
- **Voltage:** The voltage on the system must be maintained within acceptable operational limits using reactive power. All the new generation required to connect to deliver clean power must have a minimum range of voltage control; this includes battery energy storage and renewable sources of power. Voltage control in a clean power system does become more complex and further voltage control devices will need to be installed across the system to supplement the capability provided by the new connections. Working with the transmission owners (TOs), we will identify and secure/source these voltage control devices and services as required.
- **Thermal constraints:** In operating an efficient electricity system, there are times when the physical capacity of the network cannot transfer the amount of electricity required. When this happens, generation output on one side needs to be reduced and this is called a 'constraint'. Network investment involves a cost of upgrading the network, but brings a benefit in reducing the costs of these constraints. On top of investment, the use of other commercial and technical techniques can reduce these costs. As we progress towards 2030, NESO will assess and deploy existing techniques as well as embracing new and innovative grid enhancing transmission solutions that increase the capacity of the network.
- **Restoration:** NESO has an obligation, by 31 Dec 2026, to be able to restore 60% of British transmission demand within 24 hours and 100% within 5 days after a shutdown. Clean Power 2030 pathways will not compromise this ability. The restoration strategy will include non-traditional generation for restoration services and an annual assurance framework to ensure compliance with the Electricity System Restoration Standard (ESRS).

Managing operability in a clean power system will require different and innovative approaches. NESO has begun making these changes and will work collaboratively with industry in developing and implementing them to run the future clean power system securely and efficiently. Our detailed operability analysis is presented in Annex 3.

2.10 System operations

The NESO Electricity National Control Centre (ENCC) plays a crucial role in maintaining electricity supplies for consumers by constantly monitoring and balancing the supply and demand for electricity in real time. This operation ensures that the power grid remains safe and stable, preventing disruptions. The ENCC also coordinates responses to unexpected events, such as equipment failures or sudden changes in demand, ensuring that consumers receive a consistent and dependable electricity supply. Enabling the efficient operation of the system along the pathways detailed in this report will require a significant acceleration of developments to how the ENCC operates this considerably changed system.

Applying a digital-first mindset means we will use and share data more effectively and our systems, processes and people will leverage the right tools, technologies and training to operate a clean power system. An example of this is our ability to access increasing volumes of demand side response. We will achieve this by ensuring we receive accurate data which then supports these services being properly represented across our systems and processes alongside more established generation assets, enabling cost-effective balancing actions.

NESO recognises that we have not always been able to take full advantage of new technologies connected to the network as quickly as the industry needs, for example batteries, due in part to insufficient capability of legacy IT systems. However, we are confident that, through this analysis and other ongoing workstreams, we have identified and are in the process of instigating the changes required within the Control Centre, and support functions, that will allow us to operate a clean power system in 2030. Our investment in digitalisation and Artificial Intelligence (AI) will need to increase to realise this.

Our activities will fall broadly within the following categories:

Systems

Our tools will need the ability to integrate whole system data sources into accurate forecasts & models to enable efficient decision-making in an increasingly decentralised power system.

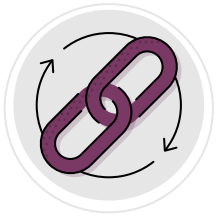
Work to incorporate primacy rules & the visibility of Distributed Energy Resources (DERs) will require acceleration to ensure effective co-ordination of DNO-connected services.

Continuing development of our Open Balancing Platform & Volta project are needed to ensure effective bulk dispatch & whole energy optimisation.

Data

We are continuing to develop an integrated approach to data standards & sharing across industry to enable whole system optimisation. This approach will be enabled by continued investment in our Virtual Energy System (VirtualES) data sharing infrastructure.

Continue to identify and progress innovation projects focused on system and data opportunities for 2030. Analysis has identified accurate forecasting and modelling as one of the key system functionalities required.



Process

Ongoing reviews of all Control Room processes to enhance efficiency of operational co-ordination with our customers.

We are ensuring our people & processes remain agile to respond efficiently to any delays to key investments, ensuring that new capabilities are delivered when required.

Transparency

Our ability to efficiently answer market queries with technical proficiency needs to be enhanced to build trust across all operational interfaces & with end consumers.

We are accelerating efforts to make sharing of data on Control Room decision-making more proactive.

People

We will increase the support provided to our highly trained & experienced Control Room staff by accelerating investment to enhance our data analysis & operational co-ordination capabilities with dedicated roles in these areas.

Chapter 3. Pathways to clean power

Our pathways demonstrate that it is possible to move to a renewables-dominated clean power system by 2030 without compromising security of supply. The pathways include a combination of flexibility, low carbon dispatchable power plants and a back-up fleet of gas capacity to meet current reliability standards.

The combined higher levels of offshore wind in the 'Further Flex and Renewables' pathway and new dispatchable power in 'New Dispatch' will both be needed soon after 2030. An appropriate approach may therefore be to aim high on both, reducing the risks of under delivery for the portfolio as a whole and reducing reliance on any single project.

Adding even more clean power capacity can reduce use of unabated gas, but only by a fraction of its generating potential. This implies that, at the margin, more deployment of clean power sources, particularly variable and firm ones, will tend to add to system costs.

3.1 Our clean power pathways

As set out in Chapter 1, we present two main pathways to clean power in 2030. Both involve increased electrification of heat, transport and industry – a reductionist approach that slows down electrification to lessen the challenge of clean power would undermine the core objectives of cutting energy costs and supporting net zero. One pathway, Further Flex and Renewables, sees 50 GW of offshore wind and no new dispatchable plants. The other, New Dispatch, has 43 GW of offshore wind and new dispatchable plants (totalling 2.7 GW, using either hydrogen from low carbon sources or carbon capture and storage (CCS)).

These pathways were developed from the analysis set out in the Future Energy Scenarios, with adjustments based on the greater challenge of clean power, our deeper assessment of the 2030 pipelines and our stakeholder engagement for this report.

Stakeholders encouraged development of a wider set of sensitivities and emphasised the importance of some technologies for the period beyond 2030, even where their 2030 role is limited. Based on feedback and our pipeline analysis, we reclassified a proposed pathway with 55 GW of offshore wind as a sensitivity and added a further sensitivity with more new dispatchable generation.

Our clean power pathways push the limits of what is feasibly deliverable, but there are some flexibilities at the margin. For example, onshore wind and solar could substitute for offshore wind; more demand-side response could substitute for batteries; more hydrogen or CCS could substitute for most other supply options.

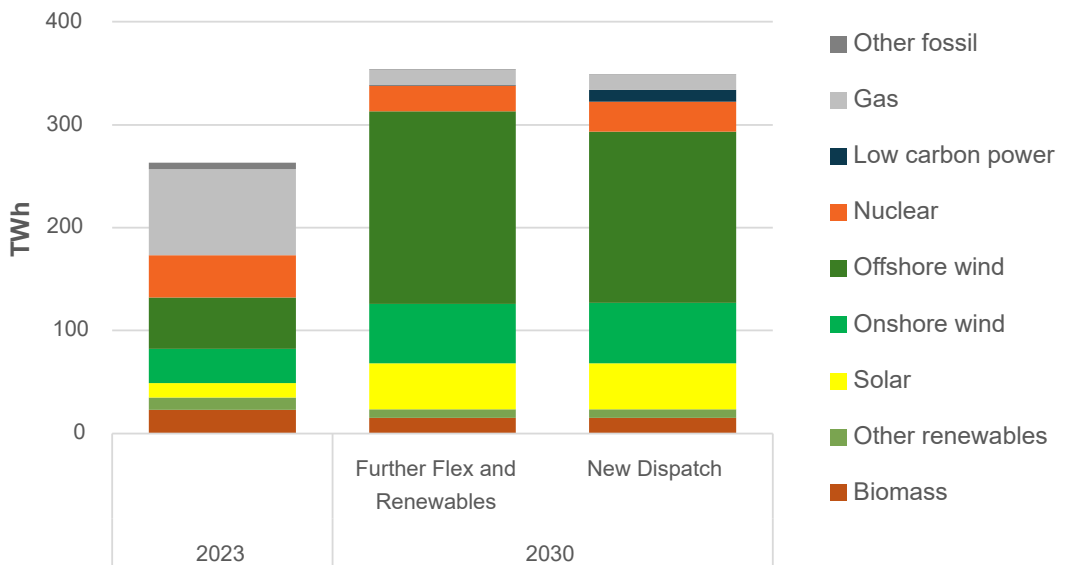


Figure 15: Generation mix for a clean GB power system in 2030

Fuel / technology type (GW)		2023	2030 Further Flex and Renewables	2030 New Dispatch
Variable	Offshore Wind	14.7	50.6	43.1
	Onshore Wind	13.7	27.3	27.3
	Solar	15.1	47.4	47.4
Firm	Nuclear	6.1	3.5	4.1
Dispatchable	Biomass/BECCS	4.3	4.0	3.8
	Gas CCS/Hydrogen	0	0.3	2.7
	Unabated gas	37.4	35.0	35.0
Flexibility	LDES	2.8	7.9	4.6
	Batteries	4.7	27.4	22.6
	Interconnectors	8.4	12.5	12.5
	Demand-side flexibility (excl. storage heaters)	2.5	11.7	10.4
Annual demand (TWh)		**258**	**287**	**287**

Table 2: Capacity by technology in the clean power pathways (GW)

3.2 Security of supply

It is non-negotiable that the power system must remain secure. Our pathways demonstrate that it is possible to move to a renewables-dominated clean power system by 2030 without compromising security of supply. The pathways include a combination of flexibility, low carbon dispatchable power plants and a back-up fleet of gas capacity to meet current reliability standards.

To maintain security of supply, we anticipate that most existing gas generators will need to remain on the system, with new power stations potentially required to replace retiring ones. However, their use (and therefore emissions and expenditure on gas) drops dramatically. To stay open and maintain availability, they will need to cover their fixed (non-fuel) costs with other support, for example through the capacity market. If new gas-fired plants are needed, they must be hydrogen-ready or CCS-ready from the start, meaning the plant is in a suitable location and retrofit is technically and commercially feasible.

In line with our annual security of supply assessments and capacity market modelling, we test across different weather conditions, plant outages and network outages, looking across the year and at specific periods of system stress (e.g. wind lulls in cold snaps in winter).

We have also looked at the implications for the upstream gas network, which would experience larger swings at shorter notice. We model over various time intervals and both nationally and regionally, also considering stress events such as the loss of a compressor. In this analysis, the gas network remains within safe operational limits.

Great Britain's electricity infrastructure is resilient to current climate conditions, but future challenges posed by climate change bring additional risk, especially considering the necessary changes in generation and consumption patterns for a clean power sector. Traditionally focused on security and adequacy, the infrastructure must also be resilient to high-impact, low-probability events, such as severe weather, which are expected to become more frequent and intense due to climate change. NESO's new Office for Resilience and Emergency Management will provide whole system coordination, assessment and analysis for system resilience and preparation for emergencies across the GB energy industry.

3.3 Insights from our clean power pathways

Our clean power pathways see Great Britain become a net exporter of power and reduce the share of gas generation to below 5%. Both pathways have core commonalities, reflecting that many of the big changes needed to 2030 are clear – they both see a huge expansion of flexibility of both demand and supply, get the majority of clean power from wind and solar, and retain a gas fleet of similar size to today for security of supply.

The two pathways involve somewhat different ways of reaching clean power, implying different risks, challenges and opportunities, both at the portfolio and at the project levels.

- Delivering new clean dispatchable plants by 2030 involves particular project risks, given these are first-of-a-kind technologies for Great Britain. Partly reflecting those risks, these plants are also likely to involve a higher need for government support initially.
- If delivered, new dispatchable power would reduce supply chain pressures elsewhere. For example, the New Dispatch pathway needs to contract a further 9 GW of offshore wind in the next one-to-two years, compared to 19 GW for Further Flex and Renewables, which would be above the record amount of 11 GW.
- The Further Flex and Renewables pathway has lower fuel costs but has to produce more power overall to compensate for curtailment, constraints, higher exports and storage losses given the greater share of generation from variable sources. These effects result in higher aggregate annual system costs compared to the New Dispatch pathway, even though the per MWh costs of offshore wind are lower than for CCS. These results reflect our central assumptions, and could change under different assumptions.
- The New Dispatch pathway would leave the British system somewhat more exposed to volatile international gas prices. Gas (whether for unabated plants or those using CCS or CCUS enabled hydrogen) would still be used in 47% of periods, rather than around 15% in the Further Flex and Renewables pathway. Under current market arrangements, this would feed through to wholesale price setting in those periods.
- There may be different industrial benefits and new jobs under the two pathways, as well as different opportunities for GB to demonstrate climate leadership.

	Further Flex and Renewables	New Dispatch
Emissions ($MtCO_2$) (excluding BECCS)	5.2	5.3
Carbon intensity gCO_2/kwh (excluding BECCS)	15	16
Imported fuel dependency (%)	19	23
Hours with gas (unabated or with CCS) running over a typical year (%)	15	47
System cost (£/MWh)	133	126
Curtailed and constrained (TWh)	48	44

Table 3: **Key stats from our pathways**

The combined higher levels of offshore wind in Further Flex and Renewables and new dispatchable power in New Dispatch will both be needed soon after 2030. An appropriate approach may therefore be to aim high on both, reducing the risks of under delivery for the portfolio as a whole and reducing reliance on any single project.

Our analysis shows that dispatchable plant has an oversized value for displacing unabated gas generation, reflecting its ability to target its outputs at times when otherwise unabated gas would be used. To maximise this value, dispatchable plants should not operate at full capacity all year round. This needs to be considered when designing relevant contract terms.

Modelled seven-day hourly generation profiles today and in 2030 for illustrative weeks across the seasons highlight the changing role of unabated gas, weather dependent renewables and flexible sources. Unabated gas plants generate far less frequently than today, making up less than 5% of the total annual generation in our modelling. However, there will be periods in 2030 where they play a critical and sustained role over several hours or days – as can be seen for the illustrative winter week in Figure 17, while unabated gas is barely used in the illustrative weeks for other seasons. Clean dispatchable plant (blue in the Figure) and other flexibility (pink) play key roles in meeting peak demand and in periods with lower wind and solar output (green).

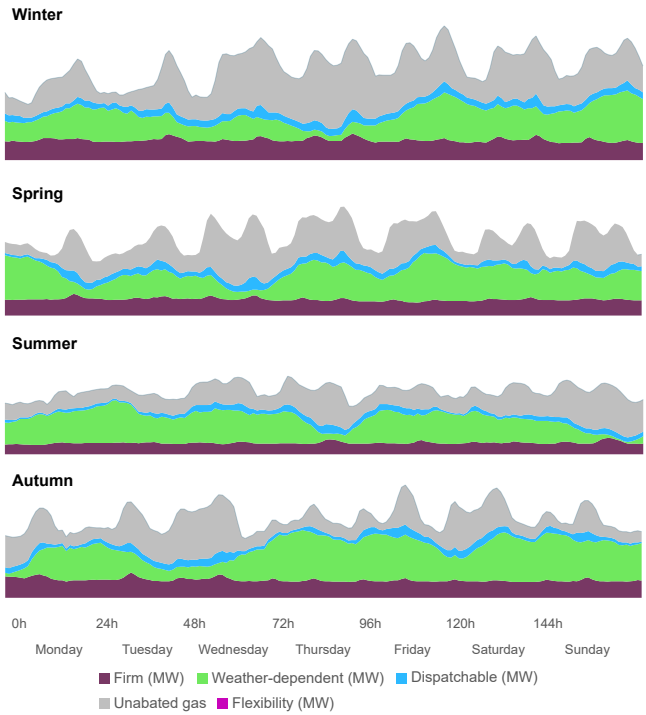


Figure 16: **Modelled 7-day hourly generation profiles for 2023**

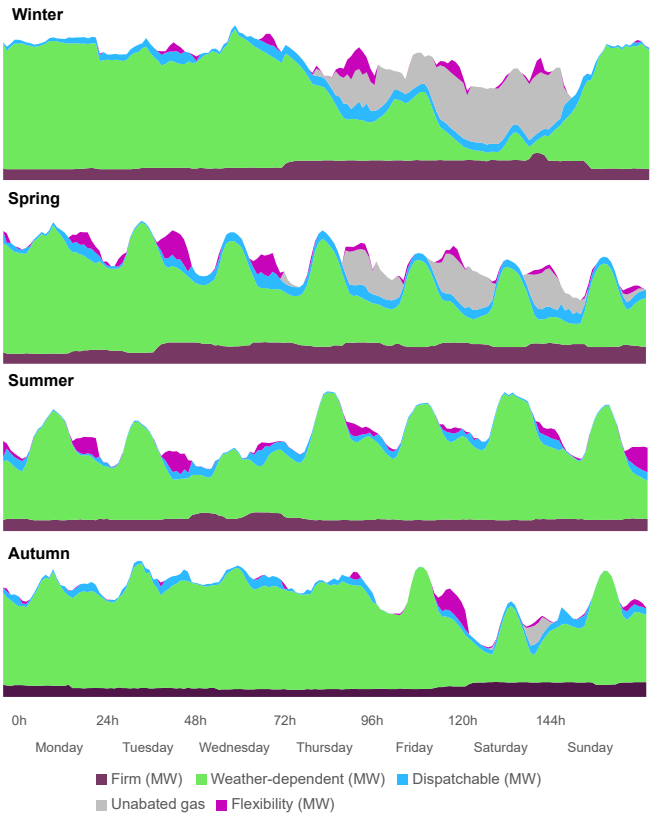


Figure 17: 2030 Further Flex and Renewables

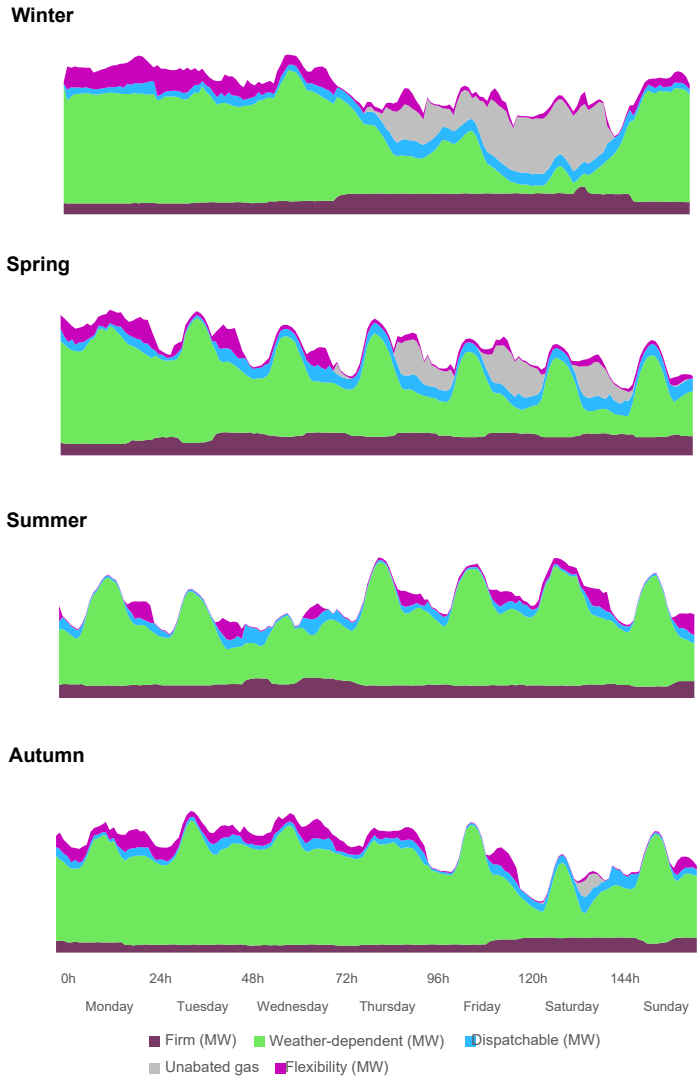


Figure 18: 2030 New Dispatch

Different supply and demand mixes also result in different pinch points on the network, where the highest unresolved constraints occur. In both pathways, there is a significant pinch point in the Midlands leading to clean power in Scotland being constrained.

- This is particularly the case in the Further Flex and Renewables pathway (although helped by the deployment of long-duration storage), which also sees a pinch point in East Anglia due to the higher offshore wind alongside interconnectors.
- In the New Dispatch pathway, the constraints are the lowest, as the dispatchable plant with CCUS, being in one of the CCUS clusters, is better located to use the planned electricity transmission network.
- The Very High Renewables sensitivity has the highest constraints due to the significant volume of renewable generation connected in Scotland and East Anglia in particular.

3.4 Insights from our clean power sensitivities

Once a clean power system is reached by 2030, further reducing the share of unabated gas below 5% by building more clean power capacity becomes very difficult. This reflects that, in a clean power system, unabated gas is only operating in less than 20% of the hours of the year, so only power supplied in those particular hours will further reduce use of unabated gas. We have explored this challenge and others in our sensitivities.

We find limited impact from further increasing flexibility:

- **Batteries:** Even a doubling of battery power (GW) and capacity (GWh) from levels in our pathways would only reduce unabated gas use by less than 0.1 percentage points. The lower levels of battery deployment In New Dispatch (still more than quadruple current levels) still support a system with less than 5% of unabated gas, while reducing the level of investment required and overall system costs. Improving the roundtrip efficiency of batteries slightly reduces unabated gas use (by less than 0.1 percentage point). These sensitivities indicate that good market design to encourage optimal deployment and use of batteries can help keep costs down.
- **Interconnection:** We find that more interconnection with neighbouring markets can bring some benefits in reducing curtailment (i.e. more 'excess' power from renewables that would have been wasted can be exported) and in enhancing security of supply. But it does not reduce use of unabated gas.

Adding clean power capacity can reduce use of unabated gas, but only by a fraction of its generating potential. This implies that, at the margin, more deployment of clean power sources, particularly variable and inflexible ones, will tend to add to system costs.

- **Variable renewables:** Generation from wind and solar tends to be concentrated in hours where gas is not running, so adding more to our clean power pathways has a very limited impact on unabated gas use. Furthermore, much of the extra generation would be curtailed or exported at low cost (since it is produced at times of excess), so more renewables at the margin will tend to push up costs, unless accompanied with more demand that is flexible enough to take advantage of these times of excess power. Our Very High Renewables also explores increased demand. With 14 TWh of additional demand and 29 TWh of additional renewable output compared with Further Flex and Renewables pathway, annual gas generation remained at under 5%.
- **Firm generation:** . Including 1.8 GW of additional firm capacity in 2030, such as from nuclear small modular reactors, would provide around 13 TWh of generation and reduce the share of unabated gas by 0.9 percentage points (3 TWh). Much of the remaining 10 TWh would be lost to curtailment or exported at low cost, implying an increase to overall costs of the power system.
- **Dispatchable generation:** Similarly, a 1 GW increase in dispatchable generation would only be able to displace 0.5 percentage points (1-2 TWh) of unabated gas. It would also run at some times for export at high prices. The low load factor involved implies a relatively high cost per unit of generation, but it would add less to system costs than the increases in variable renewables or inflexible generation, given the ability to save on fuel costs when not running.
- **Weather:** The dispatch modelling for our clean power pathways considers what would happen in a typical weather year.[1] We have also carried out modelling to assess security of supply (adequacy) requirements that consider more extreme weather years, including extended periods of low wind, and variations in plant outages. This ensures that we have sufficient available generation to operate the system safely and securely under a range of different conditions. Our modelling shows that our clean power generation portfolios provide a level of reliability that is similar to what we have today, based on loss of load expectation (LOLE), and are well within the current reliability standard of 3 hours LOLE per year. There is also the possibility that a system that would meet our clean power metrics in a typical wind year would not meet them in a low wind year.

1 In our modelling we have used weather from 2013. The use of a single representative weather year is common in power system modelling, and we have used this alongside other security of supply metrics. We use the year 2013 because it represents a typical British weather year, characterised by low temperatures and high winds in winter and a mild summer.

We have also used our modelling capabilities to explore variations in how the system is run, keeping the demand and supply mix the same. These demonstrate that, at the margin in a clean power system, choices that affect how the system runs may become more important than trying to build ever more clean capacity.

- **System optimisation:** Our modelling approximates how the system is dispatched, and allows for some inefficiencies in this, for example because market participants do not have perfect foresight. To explore the impact of more efficient dispatch decisions we tested how model results changed with a shift from one-day to seven-day foresight. This favours storage and demand flexibility, which can then avoid the need for gas-fired generation more effectively. This test sees gas use reduce from 5% to 3.5% in our pathways, while also bringing material cost savings. The possibilities here warrant further investigation which we have underway.
- **Dispatch of gas plants:** To limit generation from unabated gas for export, our modelling includes a £25 /tonne carbon differential for Great Britain against connected markets. Increasing this differential can have large impacts on unabated gas use, at the extreme reducing it to only 1%. The carbon price is not a policy recommendation, and other options could achieve similar ends. In designing a suitable policy, or defining what is considered an acceptable strategic role for unabated gas, it will be important to consider the impacts on security of supply, costs to consumers and the risks of carbon leakage.

For the power system to be clean, it is not enough to build all the required components: they must also be used in a way that is clean. As part of the plan for clean power by 2030 the Government, working with NESO, should consider how it will ensure the system runs as a clean system.

Chapter 4. Critical enablers

In Chapter 2 we have identified some of the key technology-specific actions needed to reach clean power by 2030. Many challenges are common across different technologies, requiring holistic thinking about how they can be overcome. Our analysis and engagement have highlighted six cross-cutting enablers where action is needed:

Markets and investment: Various market arrangements and investment support schemes are in the process of, or will need, reform to reach clean power and operate the system efficiently. Decisions must provide stability and confidence to underpin the large amount of investment required, while supporting innovation and efficient operation of the system. An element of competition will help to keep costs down.

Planning, consenting and communities: Significant volumes of projects need to pass through the planning system to start construction on rapid timescales, while maintaining community consent which is vital to the mission. Given that construction for many of the required projects needs to begin in the next 6-24 months to be in place by 2030, upcoming planning reforms will need to streamline and speed up processes.

Connections reform: The connections queue must be formed of ready-to-connect projects that align with government's plan for clean power by 2030 and, once developed, the Strategic Spatial Energy Plan (SSEP) and future iterations. We have begun the process of connections reform and will develop the SSEP based on government's plan for clean power by 2030.

Supply chains and workforce: Acute supply chain and workforce challenges must be overcome across nearly all generation, storage and network projects. Policy certainty, visibility of the future market and swift funding decisions are needed to ensure developers can mobilise the supply chains and workforce needed. Over the medium term, greater strategic coordination can enable delivery while supporting the growth of domestic supply chains and a skilled workforce to meet the growing pipeline of projects.

Digitisation and innovation: Prioritised and coordinated action is needed across the sector to drive digitalisation and common governance is required for orchestration of a sector-wide digital and data plan. Work has started on a common data sharing infrastructure for the sector, but this needs to be accelerated through policy and incentivisation of adoption. Accelerated AI adoption and transformative innovation need to be prioritised to align with government's plan for clean power by 2030.

NESO as a partner in delivering clean power: NESO will play a central role in delivering clean power. Putting the government's plan for clean power by 2030 into operation will require coordinated action across the energy industry and its institutions, with NESO working as a partner with Government, Ofgem and key decision makers. This includes supporting Energy Code Reform, developing our implementation and engagement plans and reviewing our operations to ensure alignment with the plan.

This chapter sets out our high-level assessment of the challenges and opportunities in this space and the action that is needed to deliver. As highlighted above, close collaboration will be needed between UK, Scottish and Welsh governments, particularly in relation to planning and consenting.

4.1 Markets and investment

Where are we now?

Since privatisation in the early 1990s, the GB electricity market has facilitated competition, investment, and innovation, with significant benefits to consumers. The Contracts for Difference (CfD) scheme, introduced in 2012, helped drive down the cost of offshore wind and propelled the UK to the forefront of the clean power transition, supporting over 19 GW of offshore wind capacity by 2024. Alongside this, the Capacity Market has supported investment into new build of capacity, providing security of supply as coal was phased out.

However, the market arrangements that underpin our electricity system were designed for the former age of large, centralised dispatchable generators. As the system evolves, we are observing ever higher constraint costs and inefficient outcomes across the market. In 2022, the government launched the Review of Electricity Market Arrangements (REMA) to ensure that the GB electricity market is fit for the future. NESO is part of the REMA Programme Board.

Where do we need to get to?

To deliver clean power by 2030, GB will need to mobilise and deploy an average of over £40 billion of investment annually in energy infrastructure over the next five years.

Having effective market arrangements and investment support mechanisms in place will be essential to unlocking this investment, while ensuring consumer value, low carbon operations and security of supply. This must be achieved in the context of a system which:

1. Encompasses assets which are increasingly geographically dispersed, connected at distribution level, automated and responsive to changes.
2. Contains significant volumes of assets supported by increasingly diverse investment support mechanisms, with different incentives that will impact on their operational decisions in different ways.
3. Is increasingly interconnected to continental markets.

A range of initiatives are already underway to deliver this, including: the new cap and floor for long duration storage that is needed to unlock investment; reforms to the balancing market to enable new types of flexibility and demand side response to compete on a level playing field; and the REMA programme, which is considering how the existing CfD, Capacity Market and wholesale market arrangements need to evolve to recognise the changing nature of the system.

What are the challenges and opportunities?

In developing this report, we engaged closely with investors, developers, industry bodies and academics. There was near unanimous agreement on the scale of the challenge and the importance of clear stable market signals and investment support needed to mobilise the capital required to deliver the significant increase required.

There were a variety of views on the benefits of fundamental reform to the wholesale market arrangements to move away from the national pricing model to a more granular level, e.g. through zonal pricing. Alongside this, many market participants considered that the introduction of significant reforms to market arrangements could create sufficient uncertainty to risk delivery of the technology pathways identified in this report, at best increasing the required cost of capital to deliver the investment and, at worst, stymieing the investment completely. Others suggested that there was already uncertainty around the future direction for the wholesale market, CfD and Capacity Market, and a swift decision on the future direction is needed.

The importance of supporting consumer and demand side flexibility enabled by digitisation was recognised as critical for delivering clean power, and some stakeholders have expressed that more granular wholesale pricing is critical for unlocking flexibility.

Actions needed to drive change

Market reform

There is currently uncertainty around the future of market arrangements and investment support which could act as a barrier to delivering clean power by 2030. Investors and market participants are likely to need clarity on these future arrangements at a suitable level to enable investment decisions in the very near future. The upcoming cap and floor decisions, design of future CfD allocation rounds, ongoing reforms to the balancing mechanism and REMA programme are all opportunities to provide such clarity.

It will be important to provide stability and confidence in the future direction of market reform to underpin the large amount of investment required, while supporting innovation and efficient decisions on the way to, and on reaching, a clean power system.

On the specific issue of wholesale market arrangements, ESO's Net Zero Market Reform[1] work has highlighted where current market design is driving inefficient outcomes and higher costs for consumers. As we move towards a clean power system, it is increasingly clear that the current arrangements will not be fit for purpose as they do not provide the right information or incentives to market participants, leading to inefficient outcomes. A locational pricing model is likely the best way of mitigating the risks and maximising the opportunities of a decarbonised power sector. Any such change would need to be accompanied by clarity on changes to other investment support elements of the market (e.g. CfDs, Capacity Market etc.) and any transition arrangements. There is a critical need for clarity on this via the REMA programme.

Unlocking flexibility

Reforms to the market supported by digitalisation and innovation are also required to unlock consumer and demand flexibility. Our clean power pathways will require demand side flexibility at peak to grow by 4 - 5 times current levels. Achieving this will need to build on the progress and innovation seen in this sector in recent years. Collaborative action across the Government, NESO, Ofgem, Elexon as the market facilitator and industry is needed to ensure demand side flexibility is considered on the same level as areas such as network build and new technology investment.

Market participants highlighted the following necessary actions and areas of focus:

- **Putting in place underpinning digital infrastructure, product policies, standards and governance, alongside access to high quality data.** Smart meters, smart appliances and EVs with vehicle-to-grid (V2G) capability will provide the foundations of this system, ensuring that consumers can participate in and benefit from demand side flexibility. To achieve this, higher levels of smart meter penetration will be needed. Consumer and industry concerns about data and privacy must be addressed. Smart appliance policies and standards must be accelerated.
- **Creating routes to markets for flexibility and facilitating continued innovation.** In parallel, market design needs to ensure flexibility is sufficiently rewarded, with markets that are open and accessible. Demand side flexibility can help operate the electricity system. As such, we need to ensure that demand side flexibility can compete in markets where it can meet system operability needs.[2] Wholesale market reform is key to ensuring that market participants with the ability to shift their demand are incentivised to act flexibly: delivering the market-wide half-hourly settlement (MHHS) programme will be critical to unlocking this. Market coordination is also required across NESO, DNOs and wider flexibility markets to ensure that flexibility providers and aggregators can stack revenue and operate seamlessly.

1 Net Zero Market Reform

2 NESO will be publishing its 'Routes to Market Review for Demand Side Flexibility' report in the coming months which will expand on its commitments.

- **Ensuring consumers can reap the benefits with consideration of the distributional effects.** For consumers to ultimately benefit from demand side flexibility, they need to have the ability to respond to a price signal. This includes industrial and commercial Demand Side Response (DSR), whereby price signals need to reflect the system value and incentivise a shift from business-as-usual activity. Our pathways assume that innovative tariffs or other retail offerings are the default from 2028, but innovation in the market to provide similar services and increased choice for consumers could deliver greater volumes of flexibility. Changes to retail regulations may also be needed to manage any complexity brought by multiple appliances and technologies and fairly pass through the value to consumers' bills. Changes must be mindful of potential negative impacts on vulnerable and low-income consumers.

Significant growth in distributed flexibility will be fundamental in delivering a decarbonised electricity system and ensuring clean and affordable energy for all. To deliver this goal at the pace required to deliver clean power, greater alignment is needed between local and national markets and services to make this a reality. We look forward to working collaboratively with Elexon as the Market Facilitator, alongside Government, Ofgem & DNO's to develop more coordinated market opportunities for all providers of flexibility in the future.

Supporting investment

Our analysis in Chapter 5 sets out the major investment programme needed for a clean power system. These are dominated by renewable investments, followed by network investments, storage and other low carbon capacity. Alongside markets, well targeted and carefully designed investment support mechanisms will play a pivotal role in mobilising the private capital needed to reach clean power by 2030:

- **Low carbon power:** Renewable generation will be the backbone of the new system and needs to be deployed at least twice as fast as ever before. An element of competition should help keep costs down, but this needs to be balanced with the needs of a clean power system in 2030 and beyond. Finding ways to maximise visibility of the future market will support the required investment at least cost, including in the supply chain. A clear strategy for contracting renewables over the coming three years could provide maximum certainty for investors and the supply chain.
- **Supply side flexibility:** With relatively long build times, rapid decisions are needed on the cap and floor mechanisms for interconnectors and the long duration storage to unlock investment in the capacities required to deliver clean power.
- **Low carbon dispatchable capacity:** Clear pathways are needed for the deployment of first-of-a-kind (FOAK) technologies such as power CCS and hydrogen to power. For these technologies to deploy successfully, investment support for the necessary infrastructure (including transport and storage) and power generation business models will need to be in place to enable construction to start swiftly.
- **Networks investment:** Quick and consistent decisions are needed to unlock investment in vital network projects for 2030. Clarity is also needed on the policy and regulatory funding mechanisms and incentives for these projects, providing certainty of revenues and target dates across transmission and distribution sectors.

Supporting the continuation of unabated gas for security of supply

Our full considerations on unabated gas are set out in Annex 1. Gas generation will play a vital role in ensuring security of supply in 2030 and beyond. As gas generators will run at significantly lower load factors than today, we would expect them to become more dependent on revenue support from the Capacity Market or an alternative, such as a strategic reserve mechanism. The future of the Capacity Market and/or the introduction of a strategic reserve should be considered alongside wider market reforms through the REMA programme. As part of this, it will be important for the Government, NESO and Ofgem to constantly monitor the effectiveness and value for money of any arrangements, ensuring there is a plan in place to manage the impact of plant exits from the market on capacity adequacy. A decision is needed in time for the publication of the Capacity Market Parameters in July 2025.

NESO's voltage, stability, reserve and response markets

Annex 3 sets out our plans for adapting our core operability markets.

The 'Voltage' and 'Stability' sections of Operability Annex 3 outline future requirements for reactive power and stability services respectively. The recently developed long-term markets for both voltage and stability are available to meet our firm long-term requirements. The mid-term markets will also be available to meet shorter-term closer to real time requirements based on their current implementation status. Both markets will enable service provision through clean generation sources.

The 2030 frequency requirements detailed in the Operability section of this report will be met through NESO's response and reserve services. We have already designed the services we need to secure and operate a clean power system and such services will continue to be procured through a transparent and competitive auction process. Details can be found in the Markets Roadmap. As we move to more intermittent and less synchronous generation, the volume required from these services will likely increase. We will continue to review our requirements and enhance our services as necessary to meet the changing needs of the system.

4.2 Planning, consenting and communities

Where are we now?

Most of the energy infrastructure required to deliver clean power by 2030 is already in the development cycle. However, an independent report[3] commissioned for ESO in spring 2024 suggested that only 6 GW of onshore wind, 15 GW of offshore wind, 10 GW of solar and 10 GW of battery storage had obtained the relevant planning consent as of April 2024. Engagement with the TOs has shown that of the network projects required, 16 projects are currently awaiting planning and consenting decisions and 28 projects are at an earlier stage of development, prior to planning and consenting.

The research also suggests it currently takes, on average, 21 months to issue a planning decision for offshore wind in England and 15 months in Scotland. For onshore wind, it takes 15 months to receive a decision after applying to local planners and 35 months at the national level.

Communities will be at the heart of the delivery of net zero in Great Britain and the planning process is a key route through which they can have their say on plans for energy infrastructure in their area and raise concerns about the impact on their local environment.

Where do we need to get to?

Unprecedented volumes of clean energy infrastructure projects are needed to meet the Government's energy ambitions. Construction for many of these projects needs to begin in the next 6-24 months. Considering the time it has taken for significant energy projects to get planning consent in recent years, those timelines look challenging. Engaging and bringing along local communities that host energy infrastructure will remain key, both in enabling delivery and maintaining widespread public support for the clean power mission.

What are the challenges and opportunities?

We established a Societal Delivery Forum to understand the views of organisations representing local communities, the natural environment, land use specialists and the planning sector to inform our advice to the Government.

Participants highlighted several consistent challenges around societal and consumer acceptance, engaging local communities, resourcing of local planning authorities and statutory consultees, ensuring the right data is available to make decisions and the experience of consenting major energy projects. Opportunities for improvement through greater coordination between developers in the building and development of infrastructure, better engagement with statutory consultees and the Government's upcoming planning reforms were put forward.

The government has begun to take steps in the planning system to enable clean power – including the removal of the moratorium on onshore wind in England, and the recently announced joint UK and Scottish Government consultation on changes to the planning regime to support energy infrastructure.

Actions needed to drive change

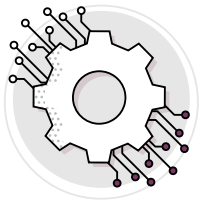
The planning and consenting processes for energy infrastructure needs to be shorter to ensure delivery by 2030. The current approach which can take in excess of two years for approval on some types of projects, and longer in some cases, poses a significant delivery risk. To have a good chance of being built in time. The next 6-24 months are critical for projects to clear planning and move into construction. Expediting the planning process, while maintaining community consent will be vital to delivering on the clean power mission, and maintaining momentum for projects needed after 2030.

3 Research commissioned by ESO and carried out by Regen in July and August 2024. This is based on connection queue and planning information from April 2024 and so figures may have changed since then. It should also be noted that, due to data availability this does not reflect all projects in the planning cycle. Research results are presented for illustrative purposes only.

Improved coordination and transparency between developers and statutory consultees and ensuring there is sufficient capacity in the system will help enable acceleration. As will cooperation between all levels of government: national, devolved and local.

Community consent and maintaining public support is vital to the delivery of net zero in Great Britain. Those asked to host energy infrastructure should continue to be effectively engaged throughout the development process, even as it accelerates, and should feel tangible benefit from the critical role their areas play in building a clean, secure and low-cost electricity system.

4.3 Connections reform



Where are we now?

The connections queue currently comprises a greater volume of projects than required for 2030 across our pathways. However: a) not all of those projects may be 'ready' or committed to progressing; and b) there may be projects with connection dates after 2030 that could usefully contribute to the 2030 system, for example with lower delivery barriers or lower costs. Some progress has been made over the last 12 months in addressing connections issues at both transmission and distribution levels. In addition, plans have been set out by NESO to move away from the concept of a 'first come, first served' approach to connections queue management, to one which will see us connect demand and the required generation in a timely and more strategic process.

Building on the plans set out by ESO earlier this year, further work is in train across NESO, DESNZ, Ofgem and industry to ensure that, in support of a clean power system, connections queue processes bring forward the right technology in the right location and when it is needed.

Further actions beyond queue reform have been set out in the joint Government and Ofgem Connections Action Plan and the previous Government's Transmission Acceleration Action Plan, with a focus on ensuring that projects with a connection offer can then be connected and energised in a timely and efficient manner.

Where do we need to get to?

To get to a clean power system by 2030, the generation and technology mix that is set out across our pathways needs to connect to the electricity system in the next six years. We need a reformed connections process that reflects the needs of the clean power mission.

What are the challenges and opportunities?

Delivering net zero will require connecting new capacity and new types of customers more quickly than at any time since the current process was established. In addition to a 'fit for purpose' process for issuing connection offers and managing the connections queue, consideration must be given to the implications of the volume of connections, as well as significant shifts in the nature of connecting customers and their needs.

The high number of connections and the associated enabling network and substation works will require a coordinated and whole system approach to considering the network planning and delivery implications at both transmission and distribution levels. More collaboration, coordination and understanding of the interactions across the whole network are required.

Given the dynamic nature of the path to clean power in 2030, action is also required to ensure that the codes and methodologies governing the approach to managing connections provide clarity and certainty for developers, while being appropriately flexible to the changing needs of the system and future strategic plans for the period beyond 2030.

Consideration should also be given to whether the open codes governance process is, in itself, sufficiently flexible and adaptable to be effective in enabling the required pace and scale of reform.

Actions to drive change

Delivering a clean power system by 2030 requires a connections process which is aligned to government's plan for clean power by 2030.

As such we have also published, for consultation, details on how we propose to align the reformed connections process with strategic energy plans (initially government's plan for clean power by 2030, and then the first Strategic Spatial Energy Plan, SSEP). The scope of our connections reform proposals includes all projects connecting at transmission level, and any generation and storage projects connecting to the distribution networks that impact upon the transmission system. Consideration will also be given to the treatment of demand connections with regards to the queue and the interaction with the generation connections.

We set out in that consultation our view that the connections process and reformed connections queue should align with the technology, capacity and regional requirements for clean power as set out within Government's clean power plan (at both a transmission and distribution level), and then with subsequent strategic plans like the SSEP. The Government's clean power plan can help ensure the efficiency of the new connections queue and that 'ready'[4] and strategically aligned projects are connected efficiently to achieve clean power. This could be achieved through including capacity requirements for different technologies connecting at transmission and distribution networks, and that the pathways within the clean power plan clearly separate the proposed mix of transmission and distribution technologies, by capacity and location.

However, the transition to net zero emissions across the economy by 2050 does not stop with achieving clean power in 2030. Projects needed beyond 2030 are in development now and require clarity on their connection agreements too. This could be achieved through the government's clean power plan providing clarity on the pathway upon which connection offers can be based for the period 2031-35.[5] Including this 2031-35 pathway in the clean power plan will provide a 10-year time planning horizon for the reformed connections queue, thereby providing longer-term investment clarity that will help ensure an efficient transition towards net zero targets beyond 2030 (including the Sixth Carbon Budget targets), while also facilitating an efficient transition to the first SSEP.

We set out more detail on the connections reform enablers in Annex 2.

Looking beyond 2030, we will publish our first SSEP by the end of 2026. It will build on the government's action plan for clean power by 2030 to support the energy transition efficiently and securely, provide greater clarity on the nation's future energy requirements, and achieve net zero ambitions in line with government targets. Once the first SSEP is in place we will then use the SSEP to prioritise future connection offers aligned to the SSEP.

4 By 'ready' we mean projects that meet the new criteria we propose to apply to the current connections queue and future applications, that would require projects to demonstrate that they have secured appropriate land rights in order to receive a confirmed connection offer and a place in the reformed connections queue.

5 We are proposing that the 2031 to 2035 pathway for connection offers should be based on the Holistic Transition scenario within our Future Energy Scenarios 2024 (FES24) to 2035.

4.4 Supply chain and workforce

Where are we now?

The global race to decarbonise is straining international supply chains and compounding skills shortages. Notably, the offshore wind sector, as well as the broader electrical component supply chain, face pronounced challenges. Shortages of construction workers and engineers across Great Britian further exacerbate project construction delays and increasing costs.

Where do we need to get to?

The Government has recognised the transition to a decarbonised energy system as an opportunity to create jobs and grow the economy, delivering wider benefits to Great Britain. However, those benefits can only be fully realised if action is taken to unblock the differing supply chain and workforce challenges for projects on the critical path to 2030.

What are the challenges and opportunities?

The supply chain and workforce challenges associated with the transition to a net zero energy system are already well described and understood.[6]

Our analysis has identified supply chain and workforce challenges across almost all technologies required to reach clean power by 2030. For example, delays in sourcing electrical components such as cabling, transformers and switchgear are hampering the delivery of network infrastructure, while the Offshore Wind Industry Council suggests more than 100,000 skilled roles are required to deliver 50 GW of offshore wind (up from 32,000).[7]

Stakeholders engaged as part of our Clean Power 2030 activity have reinforced that there are significant obstacles to accessing Original Equipment Manufacturer (OEM) supply chains, parts and materials coupled with limited domestic manufacturing and ports capacity. Securing engineers, digital specialists and construction workers is increasingly difficult due to the high demand for these skills across the economy, both domestically and globally.

Long-term policy certainty and greater collaboration were recognised as having potential to alleviate these challenges. Stakeholders also acknowledged the need to balance delivery at pace, which may depend on "buying in" parts and skills in the near term and developing local capacity which may deliver longer-term benefits to the British economy.

Actions to drive change

Our analysis and engagement with industry have identified three areas where action could help to alleviate supply chain and workforce pressures:

- **Providing consistent, long-term policy certainty and line of sight to funding to unlock investment.** In the near term, making swift investment decisions (e.g. on networks, the cap and floor or FOAK funding) can enable developers to sign supply chain contracts. Over the longer term, government's plan for clean power by 2030, SSEP and future carbon budget strategies can send the long-term signals for supply chain companies and workers to invest or train in Great Britain.
- **Exploring the opportunities for a more strategic approach to procurement and manufacturing.** This includes considering how the supply chain needs from the whole sector could be articulated centrally to investors and exploring further opportunities for central purchasing where this provides greater value for money and assurance over delivery. Finally, there may be opportunities to build strategic domestic supply chains where conditions in Great Britain mean this makes sense.

6 Green Jobs Taskforce (2021); Mission Zero - Independent Review of Net Zero (2023)
7 Crown Estate (April 2024)

- **Exploring a broad range of options to address specific skills gaps.** In the short term, this could include targeted options to address domestic workforce shortages in key sectors, such as offshore wind. A sector skills plan could help provide the trained workers the sector needs.

4.5 Digitalisation and innovation

Where are we now?

In recent years, advancement in technology and innovative practices have enabled progress towards digitalisation of the industry. Some industry participants have introduced a digital-native approach to traditional methods and the market has been adopting digitalisation at an increasing pace, although it remains nascent compared other industries. NESO too has enhanced its interaction with the wider industry through digitalisation, such as the modernised balancing mechanism, better open data practices and greater transparency via connections platforms. However, most if not all these efforts remain siloed within organisational or sector-specific priorities rather than whole system objectives.

The Energy Digitalisation Taskforce's call for a unified digital ecosystem has resulted in further progress; for example, DESNZ's Automatic Asset Registration Programme and the NESO-led pilot of data-sharing infrastructure (DSI), both of which are expected to enable rapid digitalisation opportunities by providing foundational digital capabilities.

Broader, sector wide innovation initiatives such as SGN's Intelligent Gas Grid and NESO's Crowdflex (demand flexibility) highlight some of the great work that is being done that can support a better understanding of a future digital grid, a fundamental step towards a clean power system.

Where do we need to get to?

To deliver clean power, we need a sector-wide strategic digitalisation plan that is actionable and delivered. This needs clarity of required outcomes, prioritisation of digital solutions and an aggressive delivery programme backed by policy and regulation to drive adoption and investment where it's most urgently needed.

While robust, safe and prompt data sharing is crucial, we must also focus on platforms and technologies that accelerate progress. One essential technology area is a strategic shift towards responsible AI for better decision making in energy planning, supply chain optimisation, market and domestic flexibility and forecasting. At NESO, we are launching a portfolio of transformative AI initiatives under two programmes (Volta and Vanguard) that focus on strategic energy planning, connections, control room operations and forecasting accuracy.

Our policy and regulatory systems must be able to realise the benefits of digitalisation by defining and revising rules and regulations where appropriate. For example, initiatives like the market-wide half-hourly settlement (MHHS) must be realised promptly to support the flexibility the system needs.

Further, innovation must target transformative change that the sector can mobilise behind, such as grid enhancing technologies and demand side signals. This should be supported by a unified approach to scale innovation through conducive policies, regulations and targeted support.

What are the challenges and opportunities?

The rapid global introduction of new technologies, both in the hardware cleantech space as well as in the digital realm (i.e. AI Large Language Models (LLMs)) presents both challenges and opportunities. Timely action is critical.

Current digitalisation and innovation efforts are often siloed and lack supportive adoption policies and pathways to operational use, making it difficult to scale ideas. Additionally, the sector faces challenges with data quality, availability and sharing, which restrict opportunities to develop and test new solutions.

To meet the clean power target, our analysis raised four key outcomes innovation is required to realise. These include better utilising existing grid capacity (for example, with super conductors), new flexibility sources and reducing overall demand through energy efficiency, as well as using AI to enable the above. It is vital that industry comes together and identifies, then prioritises the key outcomes in a coordinated way that enables market-driven innovative solutions to emerge.

Maximising commercial opportunities for digital products and services could further support wider industry digitalisation, as well as foster shared capabilities and products from innovative incumbents and start-ups.

Actions to drive change

Our engagement with industry experts and leaders has led us to identify five core actions that are crucial for transformative change:

- **Unified digitalisation plan:** The sector develops and delivers on a system-wide digitalisation strategy aligned with government's plan for clean power by 2030, ensuring cohesive progress and prioritisation.
- **Enhanced data sharing:** Focus on robust and scalable data-sharing infrastructure, supported by policies and investments that encourage widespread adoption across the sector.
- **Responsible AI integration:** Develop and implement responsible AI to revolutionise decision making in energy planning, supply chain optimisation, market flexibility, grid management and forecasting. This requires the support of clear policies, technology partnerships and investments.
- **Transformative innovation initiatives:** Prioritise transformational and scalable innovation projects that can significantly accelerate progress to clean power and beyond 2030. Support these initiatives with heightened financial, policy, regulatory and industry backing to ensure broad adoption.
- **Maximise commercial opportunities for digital products and innovation:** Identify and remove barriers to create a dynamic marketplace for digital products and services, leveraging open data sharing and transparency to foster innovation from all. For example, sharing of data on open data portals by NESO and other organisations has already led to AI and technology-based products to be available in the market to solve industry challenges.

These actions are imperative steps towards creating a resilient, innovative and digitally advanced energy sector.

4.6 NESO as a partner in delivering clean power

Where are we now?

NESO was established on 1 October 2024 as a publicly owned system operator, with new responsibilities in strategically planning the whole energy system and giving advice to government and Ofgem. The Government has also committed to establishing Great British Energy as a publicly owned clean energy company and the Clean Power 2030 Unit, tasked with delivering clean power by 2030.

Where do we need to get to?

Delivering clean power will require clarity on roles and responsibilities across key organisations in the energy sector. We need to ensure that our strategy and operations are aligned with government's plan for clean power by 2030 and work effectively with new institutions within the industry to drive forward delivery to 2030.

Where are the challenges and opportunities?

The whole energy system is interested in understanding the implications of a clean power plan and what this means for consumers, communities, networks and industry codes. Stakeholders are also seeking certainty on what organisations will need to do and how they will interact in delivering clean power. Many stakeholders want to see a coordinated delivery approach and governance arrangements that clarify the different roles and responsibilities for clean power.

NESO can act as an enabler for this greater collaboration and coordination and support the Government, Ofgem and the wider industry in providing clarity and establishing the frameworks for success.

Actions to drive change

To deliver on the clean power plan effectively and in a coordinated manner, we as NESO will:

- Work with the Clean Power 2030 Unit and Ofgem to agree NESO's role in delivering the clean power mission and how progress will be monitored, ensuring this is communicated to industry.
- Following the publication of government's plan for clean power by 2030, rapidly develop our implementation plan, setting out how we will play our part in delivering the clean power mission, including reviewing our own operations, processes, systems and investment plans across all areas to reflect on the impacts to ensure alignment with government's plan.
- Put in place an ongoing plan of engagement with industry and key stakeholders to ensure an ongoing conversation about NESO's role in the delivery of the clean power mission, in line with our broader remit as the strategic planner for the energy sector and provide advice to the Government.
- Work with Ofgem to continue to push forward energy code reform and help to identify the direction of future code changes for clean power provided through the Strategic Direction Statement (SDS) and assess how code change can be more effective and responsive to changing system or market needs.

Chapter 5. Costs and benefits of a clean power system

Delivering a clean power system by 2030 will support wider and longer-term efforts to reduce greenhouse gas emissions on the path to net zero and can bring multiple benefits without increasing costs to consumers.

Carbon: Our pathways reduce emissions of carbon dioxide to below the level in the Climate Change Committee's net zero pathway. The CCC's pathway is what is needed for the UK's Nationally Determined Contribution to the global Paris Agreement. Clean power can enable full decarbonisation of other sectors, such as transport and heat, through the adoption of electric vehicles and heat pumps, sending a clear and encouraging message to consumers that the technology they are adopting is clean.

Preparing for the 2030s: Our pathways make a step change in the deployment rates for renewables. This will ensure the system is able to keep pace with accelerated electrification through the 2030s, which is expected to add approximately 19 TWh per year to demand (equivalent to the output of around 5 GW of offshore wind). Progress on new technologies, such as carbon capture and hydrogen, is also essential for decarbonising the wider economy.

Investment: Clean power can support wider economic objectives. It will involve an annual investment programme of £40 billion plus that can support economic opportunities and new jobs across the UK. New networks and an abundant supply of clean power can enable growth in other sectors, including the growing digital and data economy.

Electricity costs: A crucial determinant of overall costs will be the impact of the Government's new approach to clean power. If it can provide greater visibility and greater confidence while unblocking barriers and easing delivery, there may be opportunities for costs to fall. Conversely, if supply chains become excessively stretched, costs could escalate. Taking a neutral view over these effects, our analysis shows that overall cost to consumers would not increase as a result of the move to a clean power system. Other factors will also impact electricity bills to 2030, including a reduction in legacy policy costs (as contracts expire) and energy efficiency improvements.

Wider benefits: A clean power system reduces Britain's reliance on energy imports, as well as bringing about environmental benefits, such as cleaner air and the potential to reduce pressures on water systems. More broadly, delivering clean power by 2030 would send a strong signal internationally, given the importance of clean power in global efforts to tackle climate change.

5.1 Climate, carbon and electrification

Carbon budgets

Clean power 2030 will significantly reduce carbon emissions in the British power sector. Power sector emissions in our pathways are 5 $MtCO_2e$ in 2030,[1] less than a third of those in a counterfactual case with no increased decarbonisation efforts[2] and reduced by more than 90% against 1990 emissions. Power sector emissions in 2030 are below the level in the CCC's pathways to net zero,[3] as required for the Nationally Determined Contribution (NDC) under the Paris Agreement and the Sixth Carbon Budget.

Achieving these emissions reductions in the British power sector would help close the current policy gap to meeting carbon budgets and the NDC, as identified by the CCC.[4] The CCC's latest progress report highlights the need to increase installation rates of renewables and for 'a credible overall strategy' for decarbonising the power sector. Action is also needed to address policy gaps in other sectors beyond power.

There is a corresponding drop in the carbon intensity of power generation, from over 140 gCO_2/kWh in 2023 to around 15 gCO_2/kWh in 2030 in our pathways. With carbon dioxide removal from biomass with carbon capture and storage (BECCS) netted off, net carbon intensity in 2030 would be around 5 gCO_2/kWh in the Further Flex and Renewables pathway (with one unit converted to BECCS) and below zero in the New Dispatch pathway (with two BECCS units).

Our clean power metrics are about meeting demand and reducing unabated gas to very low levels, so do not themselves require removal from BECCS. Removal from BECCS would help with wider efforts to reach the UK's NDC and carbon budgets. Decisions over the timing and scale with which to pursue BECCS should reflect the wider carbon strategy for meeting those targets, rather than be driven by the clean power goal for 2030.

Electrification

More broadly, clean power is the foundation for wider electrification and achieving net zero. Throughout our analysis for this report, we assume progress in the electrification of heat, transport and industry, including the use of clean power to produce green hydrogen and to support carbon removal. This aligns with the carbon budgets and path to net zero, as set out by the CCC. As a result, increasing amounts of energy demand are being met by a clean power system rather than carbon-intensive fuels such as gas, petrol or diesel, driving further emissions reductions beyond the power sector. The displaced emission in residential heating and road transport by 2030 could reach 17 $MtCO_2$/yr based on our clean power pathways.

Accelerating build rates now for renewables is crucial to enabling the continued growth of demand due to electrification, which is expected to add approximately 19 TWh per year, in the 2030s, to the demand, the equivalent of the output of around 5 GW of offshore wind.

1 Excluding emissions from combined heat and power and from waste to energy and before removal of emissions from BECCS. This aligns to the CCC's emissions accounting, which attributes these emissions to the industry and waste sectors respectively and identifies removals separately.

2 Carbon emissions in the Counterfactual reported here are slightly lower than carbon emissions in the Counterfactual in FES 2024. This is due to the higher carbon price assumption in the economic analysis for Clean Power 2030. The same carbon price was assumed for all pathways, so clearer conclusions can be drawn on how such pathways differ from the Counterfactual in terms of cost.

3 As reported in Progress in reducing UK emissions - 2023 Report to Parliament.

4 As reported in 2024 Report to Parliament

Climate leadership

The UK has a strong track record of climate leadership, including being the first country to pass comprehensive climate legislation and legally binding emissions targets through the Climate Change Act (2008). The UK was also the first G20 country to set a net zero target and hosted the COP26 climate talks in Glasgow in 2021, which were a focal point for global adoption of net zero targets.

A commitment to clean power by 2030 would solidify the UK's position as a global leader. Having been the first G20 country to phase out coal-fired electricity generation, aiming for clean power by 2030 would place the UK at the forefront among economies decarbonising from historically fossil fuel-based systems. This leadership is particularly significant given the crucial role of electricity generation in global net zero pathways.

5.2 Wider environmental and local community impacts

Impacts of building clean power infrastructure

Power projects have significant impacts on the wider environment and local communities, making it crucial to consider these factors in their development. Conducting thorough environmental impact assessments, engaging with stakeholders and affected local communities and implementing mitigation measures can help minimise negative impacts and enhance projects' sustainability. The planning and consenting process for new generating sites and infrastructure development covers local environmental factors such as noise, vibration, visual impact, flood risk, heritage, ecology and waste management.

In a clean power system, more power needs to be transported over greater distances from generation sites to areas of demand. This requires various technologies, such as overhead lines, underground lines and subsea cables. Each technology has distinct technical characteristics and environmental impacts:

- Overhead lines are usually the cheapest to build but have a visual impact through pylons and wires.
- Undergrounding is more expensive and involves environmental disturbance and potential damage during installation.
- Subsea cables are also costly and require connections to the onshore network, while posing challenges in the marine environment.
- Furthermore, long-term energy infrastructure may occupy valuable sites that could be used for other purposes.

However, it is possible to minimise and mitigate these impacts. Having a clear plan for clean power allows for considering the environment holistically across the programme, making choices that collectively minimise potential negative impacts to the environment and communities and can support solutions that are positive for nature overall.

The proposed plans in this report minimise new onshore infrastructure. We are prioritising reinforcement of existing infrastructure and have identified some marine cabling by 2030. This was a core part of the network plans that form the basis for proposals in this report: those plans consider ways to maximise and upgrade the existing network first and only once this reaches a limit are new lines considered. Strengthened engagement between developers, local authorities and communities is vital for building trust, addressing community concerns and incorporating them into network plans to minimise overall impact on local people.

Air quality, water and land and seabed use

Fossil fuel-based and biomass power plants emit air pollutants, such as particulate matter (PM), SOx and NOx from their combustion processes. These have damaging effects on human health and the environment. Shifting to renewable energy sources reduces pollution and improves air quality, leading to better public health and environmental outcomes. Electrification of heat and transport further reduces air pollution from boilers and vehicles, particularly in urban areas.

Water is a valuable resource that is expected to be under increasing stress as the effects of climate change progress. A shift to clean power brings benefits for water since thermal generation technologies, such as gas-fired generation, can have higher water requirements for cooling compared to wind and solar. On the other hand, power CCS and CCS-enabled hydrogen production consume significant amounts of water.

Overall, a clean power system can reduce pressure on water supplies. The CCC anticipates that shifting to low carbon electricity generation could lead to a 10% decrease in water use in power generation by 2050 (including electrolysis). This is contingent on new nuclear capacity using sea water over fresh water, while different areas of the country will face different challenges, including availability of salt and fresh water and water quality. Accelerated construction timelines for new generation and network build may also place pressure on water systems. Consideration and planning for water availability, quality and efficient use will be important as Great Britain progresses towards a clean power system. Designing plants to maximise water efficiency, such as using seawater for cooling, can also help minimise water-related challenges.

The use of land and the seabed need to be considered for new generation and network assets. A 25 GW increase in offshore wind could occupy approximately 8,600 km^2 of sea space.[5][6] Offshore wind farms may cause seabed disturbance and noise pollution during installation, while floating wind farms reduce these impacts but may pose risks to marine habitats due to anchoring systems.[7] However, potential positive environmental impacts have been identified as well, such as the creation of artificial reefs that attract more marine life than natural reefs.[8] Onshore wind with a capacity of 27 GW would require around 3,000 km^2 of land, representing 1% of the total Great Britain land area. Approximately 99% of this land area would remain available for other uses between the turbines, allowing for shared land use, such as agriculture and pasture. Only a small portion, approximately 30 km^2, would be occupied by the turbines.[9]

In the longer term, the Strategic Spatial Energy Plan (SSEP) will provide an understanding of the spatial requirements of Great Britain's future energy system by mapping the quantities and location of energy infrastructure, while taking into account cross-sectoral demands on land and sea. This includes considering requirements for agricultural production, transport, water availability and nature recovery to help inform decision making.

5 AURES_II_case_study_seabed_auctions.pdf
6 Scotland awards seabed rights for massive amounts of offshore wind, most of it floating | WindEurope
7 670791d6196cc68984lfc02e_ODI_Offshore Wind Energy Industry Review WEB_compressed.pdf
8 Reviewing the ecological impacts of offshore wind farms | npj Ocean Sustainability
9 How can landowners harness onshore wind power opportunities -Trowers & Hamlins

5.3 Investment

Gas-fired power generation costs are primarily driven by fuel and carbon emissions, with some capital investment, while renewable costs are dominated by upfront capital investments. A clean power system therefore involves a shift from operating costs, largely from imports of gas to capital cost, requiring significantly increased investment.

Our pathways for a clean power system in 2030 envision considerable levels of investment, some of which is already underway, driven by current contracts, commitments and expansion plans for generation, storage assets and network infrastructure. In the clean power pathways, offshore wind represents the largest component of investment, with average annual investment of around £15 billion from now to 2030. Networks, onshore wind, solar and storage are other large investment items, though each less than half the scale of offshore wind.

Average annual investment of over £40 billion to 2030 represents a material increase on investment levels in recent years, with average annual investment around £30-35 billion higher over 2025-2030 than over 2020-2024. This is an increase in investment of over 1% of GDP for the entire economy. Wider electrification efforts will further drive national investment.

The main differences in investment between pathways reflect differences in capacity assumptions, as set out in Chapter 3, with similar onshore network investment assumed across scenarios. There are significant uncertainties around the precise level of investment, given wider uncertainties over project costs, as illustrated by significant variations in contracted strike prices over recent renewables auctions. We present relatively cautious (high) estimates reflective of the higher prices in the most recent auction.

Most of the investment is expected to come from the private sector, highlighting significant local economic and job opportunities. Furthermore, this investment also leads to substantial savings in operating costs, as explored in the next section.

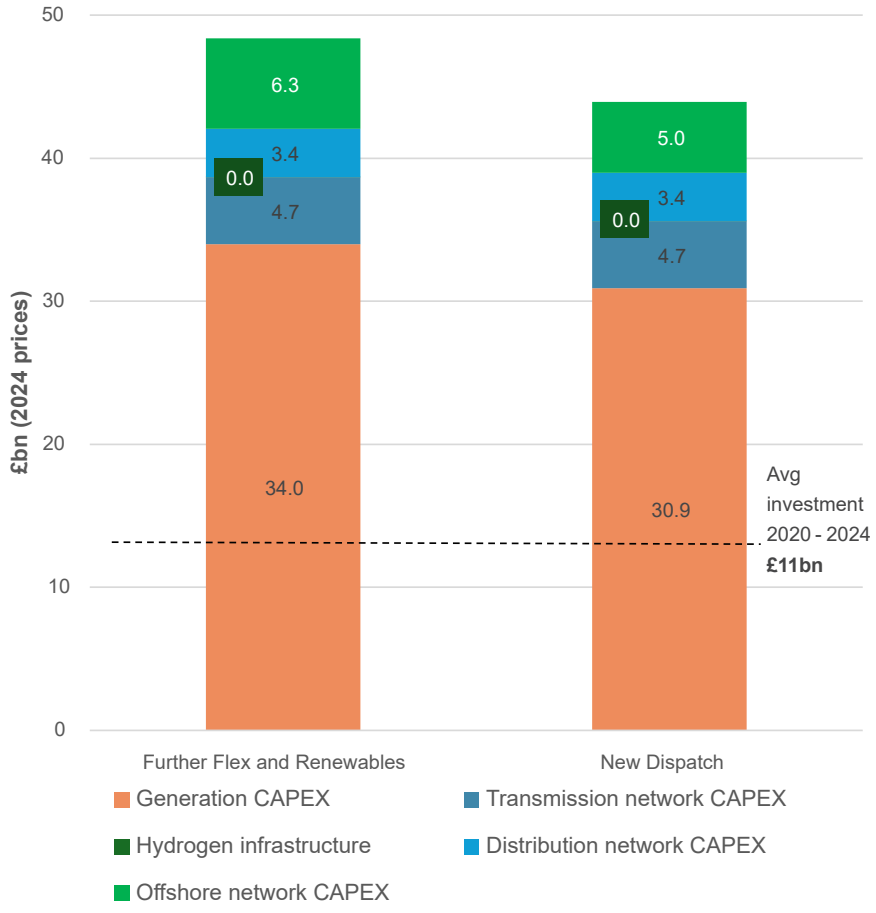


Figure 19: **Average annual investment system costs in clean power pathways 2025-2030**

5.4 Costs

While at the macroeconomic level, the shift to clean power will be seen as an increase in investment, for consumers it will be felt through its effect on electricity prices and bills. These will reflect the underlying costs of the electricity system, just one part of which is investment (or 'capital') costs, which will be recovered through sales of electricity per unit (for example, per kWh, which is roughly the amount of electricity needed to run a dishwasher cycle or a laptop all day, or per MWh, which would power a household for around four months).

Approach to our cost analysis

In our cost analysis, we focus on how electricity costs per unit can be expected to change in a clean power system. We compare how costs will change compared to the current system, how they may differ between our pathways and relative to the Counterfactual with no acceleration in delivery. We break down our cost estimates between their component parts, which include:

- **Generation costs.** The combined capital and running costs of the power plants providing generation to the system, which we break down into three components:
  - **Capacity costs.** These include the annualised investment cost of building new generating and storage capacity and the costs of operating and maintaining it, but not the fuel or emissions costs attached to use of fuels such as gas or biomass.
  - **Fuel costs.** The cost of buying and burning fuel in the plant to generate electricity.
  - **Carbon costs.** The cost of buying emissions permits under the UK's Emissions Trading Scheme.
- **Net import costs.** The cost of imports and income from exports of electricity bought from and sold to neighbouring markets over interconnectors.
- **Network costs.** The annualised capital costs and operating costs of Great Britain's transmission network,[10] distribution network, offshore network, hydrogen infrastructure for power generation and CO_2 transport and storage, which are utilised by the power generation technologies under consideration.
- **Constraint costs.** Thermal and voltage/stability costs, which make up the majority of the balancing costs and the ones most likely to change as the system develops.

Our pathways to clean power involve increased electrification, which leads to a higher share of British energy demand being met by power, displacing costs in other parts of the energy system. For electric vehicles, this is likely to reduce energy costs, as it could for heat pumps depending on prevailing gas prices. However, we do not attempt to estimate these effects in this work, which focuses on the costs of electricity.

How costs flow through to prices, and ultimately bills, will depend on policy design. Under current policy arrangements, there will tend to be an increase in the cost of support mechanisms such as contracts for difference (CfD), with offsetting falls in wholesale power costs. This reflects the change in underlying costs, with renewables having lower running costs and higher upfront costs. While we can identify some expected changes that will affect prices (not just costs), we do not attempt to estimate an actual electricity bill given the heavy dependence on policy choices.

10 Onshore enablers were not included in the analysis due to challenges in obtaining the relevant data.

Overall system costs in a clean power system

In estimating how costs will change compared to today's system, there are multiple effects to take account of. Power will be generated from different means with different underlying costs. More will be generated, not just to service growing demand, but because some will be curtailed, exported or lost during storage cycling. Also, there are costs to be covered in expanding the networks and storage infrastructure.

Looking across these effects in 2030, our analysis suggests a slight increase in total system costs for our New Dispatch pathway, equivalent to around £10 /MWh. This overall cost can be broken down between the different elements:

- **Cost of generation.** Contract prices for wind and solar in recent auctions (£71-83/MWh) are an indicator of the underlying per MWh costs of these new plants and of what consumers will pay for them. These are lower than the cost of generating from existing gas-fired power stations (£123/MWh at current projected 2030 gas prices and carbon prices)[11]. Combined with higher costs assumed for dispatchable power and recognising that not all the displaced generation is from gas, this shift implies a system-wide reduction in the average costs of generation of around £15 /MWh.
- **Curtailment.** The clean power pathways involve higher levels of curtailment when variable and firm generation combined is greater than needed to match demand. This means that, although each unit of generation is lower cost, more of it is needed, pushing up the average cost of meeting demand. We assign no value to this curtailed generation but note there may be opportunities for new flexible demand sources to put this unused clean electricity to positive use. Curtailment adds around £5 /MWh.
- **Net Exports.** Our pathways to clean power see Great Britain become a net exporter of electricity. Exports will be greatest at times of high renewable output, which under current arrangements imply relatively lower prices. So, while exporting will recoup some costs compared to curtailment, it will still involve some net cost to the British system overall. This effect adds around £5 /MWh.
- **Storage.** Our pathways to clean power build a large amount of new storage and use it regularly, which involves round-trip efficiency losses. These are important in reducing the overall cost of the system, for example reducing curtailment and the need for high-cost dispatchable and gas-fired generation. However, the investment and round-trip losses involve new costs, which together increase system costs by around £10 /MWh.
- **Network and constraint costs.** The major expansion in the network in our clean power pathways involves a large investment that will be paid back through increased charges per MWh. Also by 2030, some existing costs will be paid off and others will be spread over a larger demand base. Constraint costs will also change, although provided the full planned network expansion is delivered these need not increase to 2030. Together, these imply rising costs of around £5 /MWh.

Our cost estimates are anchored on the latest auction and DESNZ's published generation cost estimates, with more details set out in Annex 4. We also consider the possibility that costs could differ from these, including using high and low sensitivities for capital costs. The latest renewable auction saw higher prices than the previous one. Should costs fall back towards earlier contracted levels then system costs for a clean power system would be lower than our estimates.

11 **All the cost and price estimates in this report are in a 2024 price base, stripping out the effects of inflation.** Our 2030 gas price projection is around 100 pence/therm, as used in the Future Energy Scenarios. Our carbon price projection of £147/tCO_2 is based on independent forecasts, as used in the Future Energy Scenarios, plus a UK carbon price underpin of £25/tCO_2.

A particular risk we consider is that the need to contract and then build a large amount of generating capacity in a short period, especially for offshore wind, could lead to an escalation in CfD strike prices. Our analysis is based on an assessment of the pipeline of potential offshore wind projects and the potential for inframarginal rents from the CfD auction.[12] In an extreme case where all offshore wind projects are paid in line with the costs of the most expensive project and costs are further pushed up 25% due to supply chain pressures, average costs of the electricity system could increase by a further £15 /MWh. To keep overall costs down, it is therefore vital that an element of competitive pressure is maintained and that high inframarginal rents are avoided.

Impact of clean power on consumer energy bills

While our system cost analysis points to a slight increase from a move to a clean power sector, there will be direct benefits offsetting these, suggesting that overall costs to consumers would not increase from the shift to a clean power system (as summarised in Table 4 below). Specifically, in our clean power pathways, gas sets the price less frequently. The resulting reduction in wholesale prices would lower payments and infra-marginal rents for generation with low marginal costs, such as existing nuclear plants and those receiving Renewable Obligation Certificates (under current market arrangements). Our analysis points to this reducing average electricity prices by around £10 /MWh under a clean power system. This reduction would not happen without the shift to clean power.

Further bill reductions can be expected as levies for older renewable support schemes, such as the Renewables Obligation and Feed-in Tariffs, reach the end of their contractual periods. Some of the plants with these contracts may need new support for repowering, but this would be at much lower levels than in the legacy contracts and could come with an opportunity to increase output relatively cheaply. This effect would happen even without a shift to clean power and would reduce average prices by around £10 /MWh by 2030, with continuing falls through the 2030s.

There are also additional opportunities to reduce bills through energy efficiency. For example, our clean power pathways involve an efficiency improvement in lights and appliances for households that sees typical electricity usage drop by c. 5-10%.

More generally, bills will be affected by gas and carbon prices, though the move away from gas as the predominant price setter for electricity would greatly reduce the risk of major price spikes. Price spikes are passed on to consumers, as seen during the gas price crisis of 2022, when energy bills increased dramatically due to high gas prices. While gas prices fell into 2023, prices remained very high as forward hedging locked in higher costs. As a result, the electricity price cap for 2023 was between £150 -200 /MWh higher than implied by a system cost analysis akin to those in this chapter (consumers were protected from much of this cost through the Energy Price Guarantee, with the cost falling on the public finances instead).

While these sorts of very high price spikes are hard to predict, the shift to clean power would greatly reduce the exposure for consumers and the public purse.

The translation of clean power costs into bill impacts depends on policy choices, including how and when costs are reflected in prices and how they are distributed among different consumers. These choices will affect both current and future consumers, as well as the allocation of costs between gas and electricity consumers. The impact on bills may vary among consumers, such as those with electric vehicles or electric heating and those who have more flexibility in their electricity usage. Potential distributional impacts across residential and business users should be carefully considered when designing policies in this area.

12 Our analysis was developed with Baringa using their proprietary offshore wind CfD auction model. Infra-marginal rent refers to the extra payment (above costs) received by lower cost projects that get paid the same strike price as the more expensive projects that set the clearing price in the CfD auction.

Table 4: **Costs in 2030 in the New Dispatch pathway compared to today's system (figures rounded to the nearest £5/MWh)**

Cost component	Direction of impact	New Dispatch v today's system
Average cost of generation, per MWh produced	↓	- £15 / MWh
Higher curtailment (at times of 'excess' wind/solar)	↑	+ £5 / MWh
Exporting at low cost (at times of 'excess' wind/solar)	↑	+ £5 /MWh
Building storage and round-trip losses	↑	+ £10 / MWh
Grid expansion and constraint costs	↑	+ £5 / MWh
		Total = + £10 / MWh
Bill components resulting from clean power pathways		
Merit order effect reducing infra-marginal rents	↓	- £10 / MWh
Other bill changes to 2030		
Falling legacy policy costs	↓	- £10 / MW
Energy efficiency improvement in typical households	↓	c. 5-10% consumption

Cost comparisons between clean power pathways

As well as exploring how costs change compared to today's system for our clean power pathways, we also explore the differences between pathways and against the Counterfactual that falls short against national carbon targets. We find similar costs across all options, within the bounds of uncertainty, as set out in Figure 20 on the following page.

If gas prices remain similar to those of mid-October 2024 (around 100 pence/therm) and carbon prices rise in line with our projection, costs would be slightly lower in the Counterfactual. However, this would be mostly offset by the merit order effect described above, implying that there is no material cost advantage for the Counterfactual unless gas and/or carbon prices are at materially lower levels.

Between the clean power pathways, New Dispatch is expected to be slightly lower cost. This reflects the reduced investment in renewables and storage and lower curtailment and exports, as it has a greater ability to match dispatchable generation to demand. However, there are other factors to consider (as set out in Chapter 3), such as higher continuing exposure to gas prices (albeit still much lower than today).

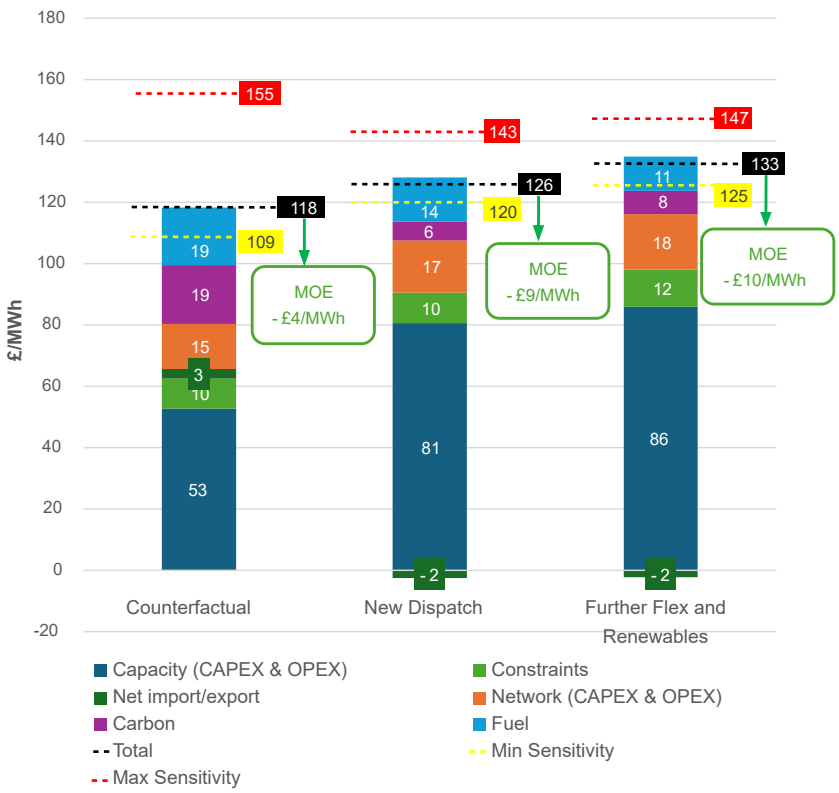


Figure 20: 2030 Annuitised system costs per useful unit of electricity with sensitivities

MOE = Merit order effect, reducing payments to some older plants

Our sensitivity analysis assesses the impact of key assumptions, including gas price projections, investment costs and CO_2 transport and storage costs. The uncertainty bars demonstrate the range of uncertainty, with the Counterfactual being particularly sensitive to gas price assumptions. For the clean power pathways, the range between the lower and upper bounds is smaller, given less sensitivity to gas prices, which outweighs greater sensitivity to capital cost assumptions.

There may be scope to further optimise the pathways to reach clean power at lower cost. For example, more demand side response could cut costs associated with curtailment, exports or storage losses, as could a further rebalancing from renewables to dispatchable generation. It may be also possible to have less, or more efficient, storage without compromising the high value it brings to the system.

We also note that there are wider opportunities and risks attached to the clean power mission to the extent that the mission can unblock barriers to delivery. There may be opportunities to reduce costs, to access cheaper capital and/or to increase competition. However, there are also risks that the accelerated pace reduces competitive pressure, increases supply chain tightness or otherwise increases costs. Managing these risks and opportunities will be a key challenge for the Clean Power 2030 Unit.

Protection from gas price volatility

The unit system costs projections above are based around our central gas price case, assuming gas prices in 2030 remain at similar levels to those in 2023.

If gas use for power generation remained at the levels of 2023 and gas prices were raised to the peak levels in 2022 (300 p/therm on average), this would add around £12 billion to annual electricity system costs in Great Britain. In the partly decarbonised Counterfactual, we estimate this gas price shock would add around £10 billion, while in the clean power pathways it would only add around £5 billion. The flow-through to electricity bills is likely to be more exaggerated given the dominant role of gas-fired generation in price setting in the Counterfactual, compared to in our clean power pathways for 2030 (Figure 21).[13]

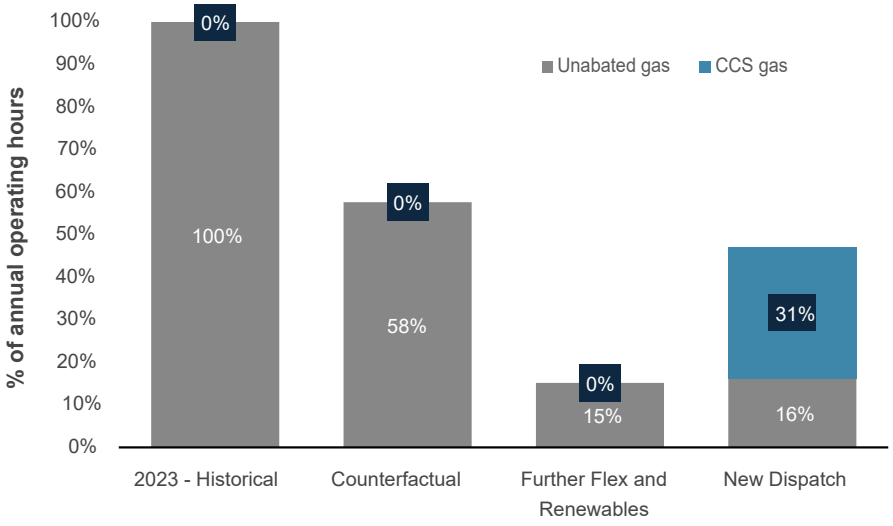


Figure 21: **Percentage of annual operating hours where gas-fired generation is used**

Gas market impact

The gas volume required to supply the gas-fired generation fleet in our clean power pathways is relatively small, compared to typical historical or current gas flows both within the British gas network and in a global market. It is not anticipated that clean power activity would lead to any significant impact on the day-to-day functioning of the gas market. Situations involving a significant national-scale increase in gas-fired generation can be anticipated in advance, based on weather conditions, allowing the gas market to price in the expected rise in gas demand.

In addition to the gas demand from gas-fired generation, there will also be a level of gas demand for hydrogen production and, more widely, for heating. Therefore, gas assets will remain a vital part of national infrastructure for some time, even in a clean power world.

13 Figure 21 shows the share of hours in which gas-fired generation operates at all. It will still be only a fraction of total generation even in these hours.

5.5 Reducing Great Britain's reliance on energy imports

Shifting to a clean power system by 2030 will significantly reduce Great Britain's reliance on energy imports for electricity generation, through several means:

- Great Britain is expected to transition from being a net importer of electricity in 2023 to becoming a net exporter by 2030.
- The amount of gas-fired and biomass generation is reduced in our clean power pathways, reducing the need for imported gas and biomass as fuel sources.
- The use of clean power for electrifying heating and transportation will further displace imports of gas and oil, reducing overall reliance on imported energy in the British energy system. However, the heating and transport sectors will still require significant amounts of gas and oil, with continued reliance on imported energy supplies.

As a result, even though Great Britain's production of oil and gas is expected to fall from now to 2030, reliance on imported fuel for power generation will reduce significantly by 2030 compared to today (see Figure 22), returning to levels last experienced in the mid-2000s.

How imports and exports are affected more broadly will depend in part on how far expansion of supply chains takes place within the country or overseas.

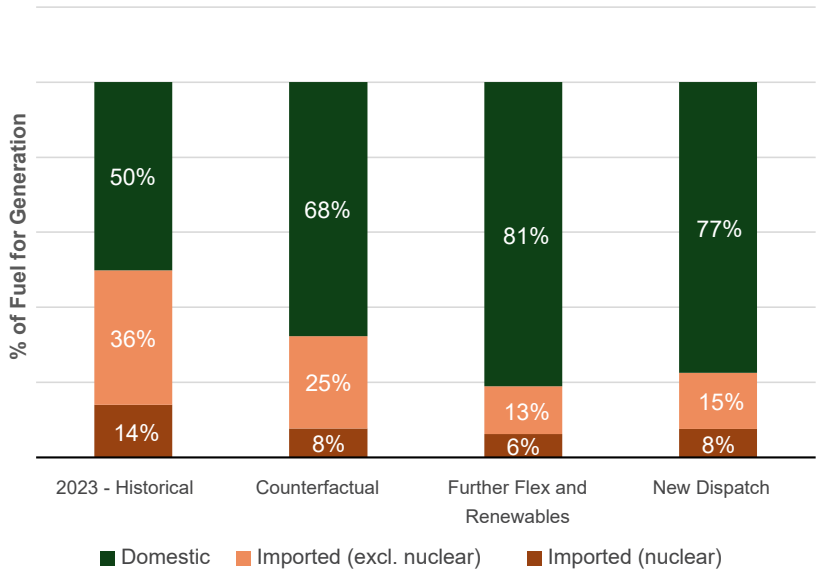


Figure 22: Split of imported and domestic fuel for generation

Wind, solar and hydro are considered British energy resources. Generation from fossil fuels and biomass are split between British and imports in line with the economy-wide shares for these fuels. Nuclear is separately identified, as its fuel is imported, but is a very small percentage of overall nuclear generation costs.

5.6 Impact on the wider British economy

The power system is a key enabler of sustainable economic growth. Households and businesses rely on access to electricity for their day-to-day needs, while increasingly demanding clean power. The transition to a clean power system by 2030 will have significant impacts on the wider national economy. While quantifying these impacts can be challenging due to the importance of wider factors, we have considered some of the key macroeconomic effects:

- The **large increase in capital investment** for clean power could potentially boost GDP and employment rates either locally or across Great Britain, but this is dependent on wider macroeconomic policy and supply side capabilities to respond to this scale-up in demand.
- The transition to a decarbonised power sector by 2030 presents a significant economic opportunity for creating and expanding **green jobs**. The low carbon energy and renewables sector in the UK has already witnessed significant growth, with employment reaching 74,000 in 2022, an over 20,000 increase from previous estimates in 2015.[14] This upward trend is expected to continue at pace. The Climate Change Committee's Net Zero Workforce (2023)[15] report presents a wide range of employment opportunities, projecting between 4,000-192,000 jobs in low carbon energy, CCS and hydrogen.
- Transitioning to a clean power system is likely to lead to a shift in the UK's **trade position**, as the country changes from a net importer to an exporter of power and reduces natural gas imports. However, this may be offset by higher imports, for example of parts and materials, influenced by the increase in capital investment.
- **UK competitiveness** will be impacted by the changing difference between British and overseas electricity prices. If consumer and industrial electricity bills reduce under the clean power pathways, it can provide economic benefits, particularly for large industrial power users, making them more competitive internationally. This of course depends on wider policies and how European power prices evolve.
- The transition to a clean power system presents **industrial opportunities**, including direct investment, a stable market for supply chains and opportunities for major power users seeking clean energy.
- **Public finances** will see some changes due to investment in clean power, but the majority will be delivered from the private sector, backed by contracts that are paid for from energy bills. Some of the potential public spending requirements, for example for CCS, have already been identified and funded by the Treasury. Reduced emissions from a clean power system decrease permit demand in the power sector's Emissions Trading Scheme, but these permits are available for sale to other sectors. Given expected price increases by 2030, the power sector is projected to raise £1.5-2 billion in 2030 (compared to £5.8 billion in 2023) even in a clean power pathway. At the same time, revenues from the Crown Estate will continue to grow due to offshore wind leasing.

5.7 Conclusion

Our analysis describes pathways to a clean power system for Great Britain by 2030 that involve a major investment programme without increasing costs to consumers, while largely breaking the link with volatile international gas prices. As well as being a major direct contributor to UK carbon targets, it would enable accelerated progress in other sectors. And it would involve development of the tools, policies and momentum to drive through 2030 to meet the ongoing challenges ahead.

This report has set out potential pathways for clean power. The Government will now reflect on those pathways and put forward its own plan. Then the hard work will begin to deliver against that plan while ensuring good value for consumers, developing opportunities across the country and building public trust and support for the clean power mission.

14 ONS Low Carbon and Renewable Energy Economy (LCREE)
15 CCC (2023) – A Net Zero Workforce

Glossary

AGR	Advanced Gas-cooled
AI	Artificial Intelligence
ASTI	Accelerating Strategic Transmission Investment
BECCS	Bioenergy with Carbon Capture and Storage
BM	Balancing Mechanism
CAPEX	Capital Expenditure
CCC	Climate Change Committee
CCS	Carbon Capture and Storage
CfD	Contract for Difference
CHP	Combined Heat and Power
CO_2	Carbon Dioxide
CSNP	Centralised Strategic Network Plan
DACCS	Direct Air Carbon Capture and Storage
DESNZ	Department for Energy Security and Net Zero
DNO	Distribution Network Operator
DSI	Data Sharing Infrastructure
DSR	Demand Side Response
ENCC	Electricity National Control Centre
EPR	European Pressurised Reactors
ESO	Electricity System Operator
ESRS	Electricity System Restoration Standard
EV	Electric Vehicle
FES	Future Energy Scenarios
FOAK	First of a Kind
GETS	Grid-enhancing Technologies
GW	Gigawatt
GWh	Gigawatt Hour
HT	Holistic Transition (Future Energy Scenarios pathway)
HVDC	High Voltage Direct Current
IBR	Inverter-based Resources
IDNO	Independent Distribution Network Operator
LAES	Liquid Air Energy Storage
LDES	Long Duration Energy Storage
LLM	Large Language Models
MHHS	Market-wide Half-hourly Settlement
MWh	Mega Watt Hour
NDC	Nationally Determined Contribution
NESO	National Energy System Operator
NTS	National Transmission System
OEM	Original Equipment Manufactuer
OPEX	Operating Expenditure
PHES	Pumped Hydro Energy Storage
PP	Percentage Points
REMA	Review of Electricity Market Arrangements
SMR	Small Modular Reactors
SPS	Strategy and Policy Statement
SSEP	Strategic Spatial Energy Plan
TO	Transmission Owner
TWh	Terawatt Hours
V2G	Vehicle-to-Grid
VirtualESZ	Virtual Energy System

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APPENDIX 2 – 3

UK Government

Clean Power 2030 Action Plan: A new era of clean electricity

December 2024

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List of Abbreviations

AGR	Advanced Gas-cooled Reactor
BECCS	Bioenergy with Carbon Capture and Storage
CB	Carbon Budget
CCUS	Carbon Capture Usage and Storage
CfD	Contracts for Difference
CHP	Combined Heat and Power
CM	Capacity Market
DESNZ	Department for Energy Security and Net Zero
DPA	Dispatchable Power Agreement
DSR	Demand Side Response
DNOs	Distribution Network Operators
EEP	Energy and Emissions projections
H2P	Hydrogen to Power
H2PBM	Hydrogen to Power Business Model
gCO2e/kWh	Grams of carbon dioxide equivalent per kilowatt-hour of electricity
GBE	Great British Energy
GDP	Gross Domestic Product
GW	Gigawatt
LAES	Liquid Air Energy Storage
LDES	Long-duration Electricity Storage
MHHS	Market-wide Half Hourly Settlement
MoD	Ministry of Defence
MW	Megawatt
NESO	National Energy System Operator
NSIP	Nationally Significant Infrastructure Projects
NSTA	North Sea Transition Authority
OBR	Office for Budget Responsibility
Ofgem	Office of Gas and Electricity Markets
REMA	Review of Electricity Market Arrangements
SSEP	Strategic Spatial Energy Plan
TNUoS	Transmission Network Use of System

Foreword from the Secretary of State

We will usher in a new era of clean electricity for our country, with our plan to deliver the most ambitious reforms to our energy system in generations.

Since Russia's invasion of Ukraine, Britain has experienced a devastating cost of living crisis caused by our exposure to volatile fossil fuel markets. Every family and business in the country has paid the price and we remain exposed to future energy shocks. In an increasingly unstable world, our dependence on fossil fuels leaves us deeply vulnerable as a country – and that is true no matter where they come from.

But there is a solution: by sprinting to clean, homegrown energy, we can take back control from the dictators and the petrostates. That is why the Prime Minister has put delivering clean power by 2030 at the heart of one of his five missions and Plan for Change.

The age of clean electricity is about harnessing the power of Britain's natural resources so we can protect working people from the ravages of global energy markets. This plan will provide the foundation for the UK to build an energy system that can bring down bills for households and businesses for good. And it is also about creating the sort of country that we know people want to see - reindustrialising our heartlands with good jobs and tackling the climate crisis.

This plan sets out how the government will work with the clean power sector, including industry, trade unions, investors, policy makers and others to achieve our clean power goal. 2030 is just six years away, and we are under no illusions about the scale of the task ahead, but

mission-driven government is about acting with urgency and determination to rise to the challenges we face.

That is why, in my first week in office, I appointed Chris Stark as Head of Clean Power 2030 in my department, leading a new mission control to drive progress towards our target. As a first step we commissioned the National Energy System Operator (NESO) to provide independent, expert advice on delivering clean power by 2030. Their advice, published earlier this year, showed that we can achieve our goal, protecting consumers and delivering a more secure energy system.

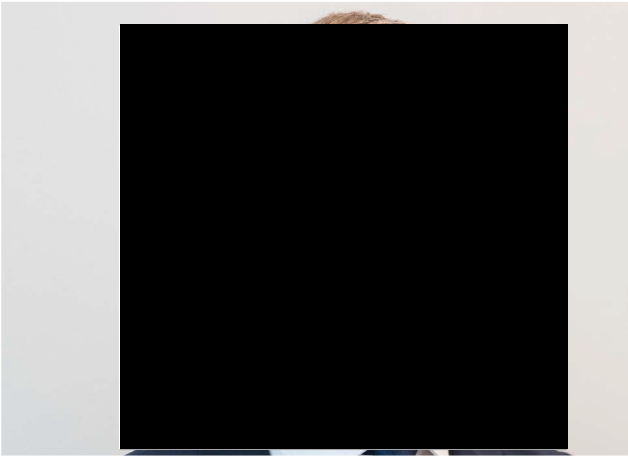
This plan builds on that advice, setting out the government's view of the pathway to 2030 and the steps needed to get there.

Ultimately, we need to move fast and build things to deliver the once-in-a-generation upgrade of our energy infrastructure Britain needs. In our first five months, we've already lifted the onshore wind ban, established Great British Energy, consented almost 2 GW of solar, delivered a record-breaking renewables auction, and kickstarted our carbon capture and hydrogen industries. This is the speed at which we will continue to work.

As the Prime Minister has made clear, clean power is an urgent priority for our country. The clean power sprint is the national security, economic security, and climate justice fight of our time - and this plan gives us the tools we need to win this fight for the British people.

Foreword by the Rt Hon Ed Miliband MP

Secretary of State for Energy Security and Net Zero



Foreword from the Head of Clean Power 2030

Cleaning up our power system has long been understood as central to decarbonising the whole economy. With a clean electricity supply, the electrification of heat, transport and industry open up as routes to net zero. But the wider benefits of clean power have also become clearer. In Britain, we have pioneered policies to grow renewable industries, attract investment and deploy clean energy technologies at a scale that was once thought impossible. There is now a route to more stable energy bills for households and businesses, as they increasingly go electric. We have also experienced the harsh repercussions of Britain's over-reliance on fossil fuels, which left us badly exposed to the cost of globally traded oil and gas in the wake of recent global insecurity.

Achieving clean power is now a broader goal, key to a growing economy, our national security and improving our standards of living. We should be in a hurry to achieve it.

This year, Britain closed its final coal-fired power station, completing a successful transition from the most polluting energy source. Clean power by 2030 is our next milestone, but it requires us to act with much greater urgency. Britain has some of the world's greatest clean energy resources, but we have planning and consenting processes that are far too slow to build the infrastructure needed to exploit them. That must change.

NESO's recent analysis shows the pipeline of projects needed for clean power by 2030. Their pragmatic advice is that security of power supply can be provided if we maintain

Britain's fleet of gas power stations but reduce their use to no more than 5% of total generation. That clarifies the task: build the grid that Britain needs, overturning decades of delay; install clean sources of power at a pace never previously achieved; identify the energy mix needed for the 2030 power system and reorder the connection queue to achieve it; develop a flexible system that can accommodate and store Britain's renewable resources; deliver these benefits to consumers, people, households, and businesses as swiftly as possible.

This requires a mission-focus – industry and government working in partnership at pace. The steps in this Action Plan will reform planning and consenting processes, contract new renewable power generation at the scale required, encourage long-duration energy storage and first-of-a-kind flexible clean capacity and open the path to clean power and new opportunities for consumers to save.

For the first time, we will have eyes on a programme of clean power investment estimated to be around £40 billion per year for the next 6 years. That visibility allows a more active focus on removing the barriers to its achievement, supporting greater coordination of supply chains, with more UK-based production, and ensuring there are trained workers to meet the requirements across the country. This is the real prize, ensuring we are ready to meet the growth in electricity demand that we expect over the 2030s and 40s.

Britain's clean power mission is now underway.

Foreword by Chris Stark

Head of Clean Power 2030

Summary

Clean Power by 2030 will herald a new era of clean energy independence and tackle three major challenges: the need for a secure and affordable energy supply, the creation of essential new energy industries, supported by skilled workers in their thousands, the need to reduce greenhouse gas emissions and limit our contribution to the damaging effects of climate change. Clean power by 2030 is a sprint towards these essential goals.

We have accepted independent advice from the National Energy System Operator (NESO), on the energy infrastructure required to deliver Clean Power 2030. In a typical weather year, the 2030 power system will see clean sources produce at least as much power as Great Britain *consumes* in total over the whole year, and at least 95% of Great Britain's *generation*; reducing the carbon intensity of our generation from 171gCO_2e/kWh in 2023[1] to well below 50gCO_2e/kWh in 2030.

The path to 2030

Successful delivery will require rapid deployment of new clean energy capacity across the whole of the UK, reflecting the shared renewable ambitions of the UK, Scottish and Welsh Governments. In this plan, we are accepting government's central role in steering the creation of this new energy system, setting our expectations for the 2030 capacities of key technologies at national and regional level.

We have high ambition. That means 43-50 GW of offshore wind, 27-29 GW of onshore wind, and 45-47 GW of solar power, significantly reducing our fossil-fuel dependency. These will be complemented by flexible capacity, including 23-27 GW of

[1] Department for Energy Security and Net Zero (DESNZ) (2024), *'Digest of UK Energy Statistics (DUKES) 2024'* (viewed in December 2024).

battery capacity, 4-6 GW of long-duration energy storage, and development of flexibility technologies including gas carbon capture utilisation & storage, hydrogen, and substantial opportunity for consumer-led flexibility[2].

In line with the NESO advice, this new capacity must be underpinned by the rapid delivery of 80 network and enabling infrastructure projects, most of which are already at an advanced stage of planning and development.

Over the period to 2030, security of supply will be protected with the maintenance of an expected 35 GW of unabated gas reserve capacity.

Growing our clean energy system in this way will see once-in-a-generation levels of energy investment – an estimated £40 billion[3] on average per year between 2025-2030, spreading the economic benefits of clean energy investment throughout the UK with the collaboration of the Scottish and Welsh Governments. These investments will protect electricity consumers from volatile gas prices and be the foundation of a UK energy system that can bring down consumer bills for good. Every choice we make will be scrutinised to maximise the impact it can have in reducing consumer bills.

The new industries and employment opportunities created by the huge investment ahead will also ensure there are lasting economic benefits from clean power throughout the country.

Delivering Clean Power 2030 also paves the way to decarbonising the wider economy by 2050 as we pursue the electrification of heat in buildings, transport, and industry. By 2050, annual electricity demand is likely to at least double. Clean power by 2030 prepares us for the rapid growth in power demand expected over the 2030s and 40s.[4]

Actions we are taking to accelerate delivery

To hold to our path to 2030, we know that the government must take radical action, quickly. This document sets out our first major steps towards clean power, in partnership with the Scottish and Welsh Governments, industry and the public:

Electricity Networks and connections

We need to reform the grid connections process and reduce the queue to connect, working with NESO and Ofgem to provide a framework through which NESO can work with Transmission Owners (TOs) and Distribution Network Operators (DNOs) to prioritise projects needed for 2030, while maintain a robust pipeline beyond 2030. Around twice as much new transmission network infrastructure will be needed in the nation's grid by 2030 as has been built in the past decade[5].

[2] These voluntary offers of flexibility by energy consumers (whether households or industries) can also be referred to as demand side response (DSR) or demand flexibility.
[3] Undiscounted, 2024 prices. This includes £30bn investment in generation assets, and £10bn investment in transmission network assets. See the Technical Annex for more detail on how this was calculated.
[4] Department for Business, Energy & Industrial Strategy (BEIS) (2022), *'Electricity networks strategic framework, Appendix 1 – Electricity Networks Modelling'* (viewed in December 2024).
[5] National Energy System Operator (NESO) (2024), *'Clean Power 2030'* (viewed in December 2024).

Regulatory reform will ensure Clean Power 2030 is better integrated into planning and decision making, so investment can be made ahead of need and the time taken to build and deliver network projects can be reduced in line with 2030 requirements. This includes working with Ofgem to explore the appropriateness of tightening the incentives and penalties on electricity transmission owners and distribution network operators to drive the acceleration of network delivery. The Scottish and Welsh Governments are considering how their planning and consenting regimes will also integrate with Clean Power 2030.

An improved planning and consenting environment will accelerate the expansion and upgrade of transmission and distribution networks. We will consult on expanding planning consent exemptions to include low-voltage connections and upgrades in England, and engage with MHCLG on opportunities to provide further flexibilities for the consenting of electrical substations. It is essential that we engage effectively and thoroughly with communities that will host new transmission network infrastructure, so they can be a part of the change to our system and benefit from it.

The Scottish Government will shortly consult on the refresh of its Good Practice Principles for community benefits for onshore and offshore net zero energy infrastructure. The government's view is that communities that host clean energy infrastructure should benefit from it. As a first step, we will publish guidance to increase the quantum and consistency of Community Funds and support the launch of industry public communications campaigns to encourage public awareness on the importance of networks infrastructure in supporting net zero.

Planning and consenting

With a prioritised grid queue, we can signal key projects for clean power and speed up planning and consenting processes across Britain. We will ensure communities directly benefit from hosting new clean energy infrastructure. We know that the majority of 2030 clean power projects are already in the pipeline, and so there is therefore a major opportunity in rewiring the planning system and unblocking bottlenecks to ensure projects can receive timely decisions so they can get building.

We will do this first by upgrading the planning system itself, equipping organisations with the flexibility they need to manage the increased caseload it faces. This includes workforce reform and development as well as a commitment to reviewing resourcing within the system.

Next, we will ensure the system can prioritise 2030-critical projects. We will make 2030 a core priority in updated planning policy vehicles and guidance. We have brought onshore wind back in to the Nationally Significant Infrastructure Project (NSIP) regime. We will bring forward a Planning and Infrastructure Bill with measures to streamline the delivery of critical infrastructure in the planning process, and convene community, nature, and industry groups on complex projects to stress-test them prior to application. In line with Lord Banner's recommendations, we will also progress work exploring changes to the legal challenge process for major infrastructure projects.

We will ensure that a reformed planning system enhances the restoration of nature. We will do this by delivering the Marine Recovery Fund for Offshore Wind and are considering strategic mitigation approaches for onshore infrastructure in England. The UK government and the Scottish Government

are also working together to establish a similar Marine Recovery Fund for projects in Scotland.

Devolved administrations are taking positive steps towards speeding up energy infrastructure planning and consenting too. In Wales, the Infrastructure (Wales) Act 2024 sets out the new consenting process for significant infrastructure projects, replacing multiple consenting processes in Wales with a single process. In Scotland, work is underway to secure the pipeline of future planners and increase skills and capacity within planning authorities. We are working closely with the Scottish Government on reform to deliver a streamlined and efficient legislative framework for electricity infrastructure consenting.

Renewable and nuclear project delivery

Addressing blockages to networks, connections and planning progress will significantly help us deliver the renewable capacity we need for 2030. But there are specific issues to address.

The Contracts for Difference allocation process needs to meet our 2030 ambitions and put an end to the stop-start failures of recent years. We need high levels of renewables to protect consumers and they need to be secured at the best price. Offshore wind has a particularly important role as the backbone of the clean power system.

Following discussions with industry and subject to further assessment, we are minded to implement a package of targeted reforms. We will consider changes to the information the Secretary of State can use to inform the final budget for fixed-bottom offshore wind, an auction schedule to improve transparency and predictability, and review auction parameters, including our approach to the reference prices used to estimate the budgetary impact of bids. To maximise the competitive process, we are also minded to relax eligibility criteria for fixed-bottom offshore wind projects so projects that have yet to obtain full planning consents can participate. We will consult on these changes ahead of Allocation Round 7.

We will leverage Great British Energy, and wider policy measures to support local and community-led renewable capacity, including for homes, businesses, public buildings and land, and shared spaces. Great British Energy will provide support to deliver the Local Power Plan, putting local authorities and communities at the heart of restructuring our energy economy. It will also align with NESO's publications and the government's response to identify locations for new generation projects on private land and undertake development on public land, unlocking scope for generation on government estates.

Solar panels are already an eligible measure in existing programmes like the Warm Homes Local Grant and Warm Homes Social Housing Fund, and we will provide further details on how else solar could be supported in the Warm Homes Plan after the second phase of the Spending Review. We will also assess the potential to drive the construction of solar canopies on outdoor carparks through a call for evidence next year.

We are also committed to nuclear, as well as the development of emerging low carbon and renewable technologies that will play an important role beyond 2030, continuing to recognise that the policy of the Scottish Government is not to support new nuclear developments in Scotland.

Electricity market reform

Reforming the electricity markets will support clean power generation and networks. Reform is vital in ensuring our market arrangements are fit for the 2030s and beyond. We must ensure that the market works in tandem with support schemes to deliver the right investment and operational

signals and that any sector-specific barriers to deployment are addressed, to enable the huge volume of deployment that will underpin Clean Power 2030.

A significant increase in short-duration flexibility of 29-35 GW[6] across battery storage, consumer led flexibility and interconnection capacity from 2023 levels will reduce the amount of more costly generation and associated network infrastructure that needs to be built, whilst maintaining security of supply. Reforming the transmission network charging (Transmission Network Use of System (TNUoS) charges) is critical in order to enable the increased deployment of future generation.

The REMA Autumn Update outlines our ambition to conclude the policy development phase of the REMA programme by around mid-2025 and confirms that the timetable for REMA decisions will align with the timetable for the next allocation round (AR7) for the Contracts for Difference (CfD) scheme in order to reduce uncertainty.

Short-duration energy storage and flexibility

As we build an energy system reliant increasingly on variable renewables, improving the flexibility of the wider electricity system is key. A Low Carbon Flexibility Roadmap will be published next year, with new actions to drive clean power flexibility by 2030. We will introduce new market reforms to provide batteries and consumer-led flexibility with appropriate and fair access to, and utilisation within, relevant markets, and we will consult on how grid-scale batteries could be referenced in future planning reforms, and on including grid-scale batteries within the Environmental Permitting Regulations.

We will consider financing options for retrofit works, including batteries, in the Warm Homes Plan in England. We will consult to remove external display requirements for device meters from the Measuring Instrument regulations, and, in Summer 2025, we will publish a consultation on consumer engagement, including on how to help coordinate and amplify accurate messaging on consumer-led flexibility. We will also consider reform on the Maximum Resale Price and will introduce new Guaranteed Standards of Performance relating to smart metering in 2025.

We will respond to recent consultations on Energy Smart Appliance interoperability, a new licensing regime for service providers for consumer-led flexibility and load controllers, and tariff data accessibility. These will be followed up with detailed consultations on draft 'first phase' Energy Smart Appliance legislation, establishing minimum cyber security requirements for appliances in scope and a smart mandate for heat pumps; draft consumer-led flexibility service providers and load controller regulations and licence conditions, and measures to improve time of use tariff data accessibility. We will implement Capacity Market policy proposals, including permitted augmentation of storage, adjustments to Extended Performance Testing Requirements and making 3-year Capacity Markets agreements to low carbon technologies requiring no capital expenditure.

Long-duration flexibility

We are projected to need 40-50 GW[7] of dispatchable and long-duration flexible capacity in 2030 to support our power system in extended periods of low renewable output. We are determined

[6] See Table 1. This is the difference between the current capacity of batteries, interconnectors, and consumer-led flexibility, and capacities in 2030 under the DESNZ *'Clean Power Capacity Range'*. Differences in total figures are due to rounding.
[7] The sum of with low carbon dispatchable power, unabated gas, and LDES capacities in Table 1, rounded to the nearest 5GW. Dispatchable technologies are ones which combust fuel to produce electricity and, by varying the rate at which fuel is burned, can respond to meet the needs of the grid with varying levels of flexibility.

to drive the development of low carbon long-duration flexibility, which presents a substantial opportunity. We have announced Final Investment Decision for Net Zero Teesside, the world's first at scale gas power plant with carbon capture, and we are also developing a Hydrogen to Power business model which will de-risk investment and bring forward capacity. We also need to scale up deployment of pump storage hydropower and foster further innovation in more nascent long-duration storage technologies such as liquid air energy storage. The cap and floor scheme, which could open in Q2 2025, will support investment in the sector. Unabated gas will continue to play a back-up role throughout the transition to clean power, ensuring security of supply. This means that we will retain sufficient capacity until it can be safely replaced by low carbon technologies.

Supply chains and workforce

Clean power by 2030 is a signal to investors to locate in the UK and build strong domestic supply chains for key aspects of our clean power system. Actions to support and accelerate delivery will give developers greater route-to-market certainty, but we will go further, including with the forthcoming Industrial Strategy, which will include a sector plan for clean energy industries. We will convene a new supply chains and workforce industry forum for key Clean Power 2030 sectors, including trade unions, to develop a deep understanding of system-level supply chain and workforce planning needs for Clean Power 2030 delivery and devise targeted collective actions to ensure they are met. The Clean Industry Bonus will support manufacturing in coastal and energy communities and cleaner, more sustainable supply chains, while increased transparency and predictability in future Contracts for Difference allocation rounds will support investment. The National Wealth Fund will focus at least £5.8 billion of its capital on green hydrogen, carbon capture, ports, gigafactories, and green steel, while Great British Energy will support the growth of clean power supply chains around the UK.

The clean power transition also needs a skilled workforce, with thousands of new jobs throughout low carbon sectors. Details of the Clean Energy Skills Challenge have been published alongside this Plan. The Office for Clean Energy Jobs will work with the sector, trade unions and the devolved governments to support regions transitioning from carbon-intensive industries to clean energy sectors, to ensure jobs are high quality, with fair pay, favourable terms, and good working conditions. This work includes targeted interventions to reskill and upskill workers across the economy, supporting access to training schemes, and promoting the opportunities of clean energy jobs so that a lack of skilled workers does not become a bottleneck in the achievement of our Clean Power ambition.

How we will work, as government and with everyone involved, to deliver

The Clean Power 2030 Unit will look across delivery of the key 2030 projects, working to identify blockages and ensuring that the clean power programme stays on track.

To do this we will draw together a mix of skills and experience from government and the clean power sector, underpinned by an Advisory Commission of leading figures from across industry and academia. The Unit will work closely with those involved in practical delivery, including the devolved governments, to cut through issues quickly and to build a comprehensive view of the power infrastructure currently in development.

This insight, coupled with a strong underlying data capability that will bring together data and insight from across government and the clean energy sector, will help understand what is likely to be delivered, by when, and quickly identify emerging challenges. This will help the Unit take rapid action wherever it is needed to ensure delivery.

This Action Plan is our first major step towards Clean Power by 2030. The coming months and years will see a new programme of activity emerge, relying on the work of a wide range of businesses, many parts of government at central, regional and local level across England and the Devolved governments, the third sector, communities, and individuals.

Why Clean Power by 2030?

Our whole way of life relies on our energy supply. But the world is changing, and the way we have powered our nation for decades, built around oil, gas, and coal is no longer something we can take for granted. Millions of us have experienced hardship in recent years, as the dangers of relying too much on oil and gas, in an increasingly volatile world, have become all too clear.

The solution is clean homegrown power. The answer to some of the biggest challenges we face – building an energy system that is affordable for the long term, keeping our supply secure, and cutting our emissions before it's too late – now all point in one direction: towards the clean power sources that have become the core of modern energy systems.

A clean, affordable, and secure system is a realistic prospect – and we must seize this opportunity. The National Energy System Operator has produced independent advice which indicates what infrastructure we will require to deliver Clean Power 2030.

If we get this right, this is a huge opportunity for our country. We can protect households and businesses from price shocks, we can attract substantial amounts of investment and employment,

and we can set the stage for further growth as we decarbonise our heat and transport – while also building a path towards 2050 and beyond.

We start with some sizeable advantages. As a nation we pioneered several of the renewable technologies that have become the low-cost workhorses of a modern energy system. We have an abundance of natural resources, and so the gradual decline of our oil and gas reserves can be more than offset by our substantial wind and solar energy resource.

But to get this right we need to act – and act quickly – because 6 years is a short time in building energy infrastructure. We are not alone in wanting to rebuild our energy system and are competing with other countries for investment and to secure supply chains.

Many of the new investments that will be part of our 2030 power system have already started their journey and a core focus of our work will be ensuring that an ambitious pipeline of new projects with potential to be up and running by 2030 are successfully delivered.

This plan therefore sets out practical actions across every part of the power system, where we are determined to remove the blockages that have, for too long, added cost and delay to the development process. These actions will accelerate delivery in many of the core generation areas – removing barriers, untangling blockages, and accelerating support. Some of our priorities will not come as a surprise: we have to put an end to interminable delays in the system that mean it can take over a decade to develop and build renewables projects. We also need to reform the connections queue process, where the current queue adds up to 739 GW.[8]

However, we are also acting to raise the level of ambition right across the system, as well as taking action to deliver the industrial supply chains, and the skilled workforce, that we need to build a vast amount of new infrastructure.

The energy consumer is at the very heart of Clean Power 2030, because as a government our core aim is making sure everyone has a reliable and affordable energy supply, in a way that protects our environment and quality of life. We also want everyone to have the benefit from the new power sources and technology that can keep bills down for good.

This means a real change to how we deliver as a government. We will now be working with specific projects on the ground to understand their ongoing development in detail, and we'll be ready to do what it takes to keep key investments on track. This also means we'll be working across traditional department lines, and that we'll be ready to adapt and learn as we go, developing new actions wherever we need them to support delivery.

Clean Power 2030 supports the wider missions of this government, to make working people better off by delivering economic growth for every part of our country. Clean power also contributes to improving health outcomes for the British people, including through reducing air pollution.

Clean Power 2030 will set in motion an age of electricity. A time where we have an abundance of clean, homegrown energy, backed by a host of British companies in all four corners of the country. It's about fixing the foundations of our economy so we can protect businesses and families from increased energy bills resulting from volatile global gas markets, give ourselves

[8] Including Demand. Correct as of end-October 2024. Connections data is published monthly by the Connections Delivery Board.

a secure energy supply for the long term, and create stable and well-paid new jobs and growth in our manufacturing heartlands.

This is the real story of Clean Power 2030; transforming the way this country invests in and builds its future.

	Impact of Clean Power 2030
Consumers	CP2030 will protect and empower consumers by: • Helping to shield consumers from international energy price spikes by reducing our reliance on fossil fuels. • Providing the foundation to build an energy system that can bring down bills for households and businesses for good. • Ensuring communities benefit from hosting new clean energy infrastructure. • Developing more consumer-friendly digital products and services to increase consumer understanding and control over their electricity products, such as apps to manage smart appliances. By increasing the use of digital technologies, consumers can choose to save money on their bills by using appliances when electricity is cheaper or via automated systems managing this on their behalf – for example charging their car overnight and selling excess energy back to the grid, or programming their smart electronic appliances such as dishwashers to complete their cycle within cheaper timeslots. • Increasing consumers' ability to reduce their global footprint by making green spending and lifestyle choices easier/the default. • Increasing consumers' energy independence through the rollout of rooftop solar panels alongside domestic batteries, EV charging, heat pumps, and other green technologies to cut down on the cost of bills and to flatten the peak demand curve. • Reducing our reliance on fossil fuels, which contribute to air pollution - cleaner air will benefit both human health and wildlife.
Business	CP2030 will provide stability for businesses and confidence for investors by: • Accelerating the transition to clean energy sources to create a more stable environment that helps create growth, minimises energy-price-led inflation and also helps shield businesses from energy price spikes. • Giving developers greater route-to-market certainty through a clear national plan for our power system and reforming our planning and grid connections processes, enabling developers to plan and mobilise the supply chains and workforce they need to deliver new infrastructure, unleashing £40 billion of investment per year. • Maximising domestic opportunities for clean energy supply chains, including mobilising investment into the clean power sector and through the upcoming Industrial Strategy where clean energy industries are a priority growth sector. • Stimulating local economies through investment in innovative clean energy projects and accompanying employment opportunities.
Workers	CP2030 will help workers by: • Playing a key part in supporting hundreds of thousands of jobs, as part of the wider transition to net zero • Stimulating skilled new jobs and economic opportunities across the country, including our industrial heartlands. • Boosting awareness of well-paid, high quality jobs in clean energy sectors, in collaboration with the Office for Clean Energy Jobs

Protecting energy consumers for good

The UK's dependence on fossil fuels has left us vulnerable to unstable energy prices, a vulnerability that was exposed by Putin's invasion of Ukraine and saw the electricity price cap increase by over £1,300 in a year, peaking at £2,000[9]. Government spent over £44 billion supporting energy bills between October 2022 and March 2024, the most ever provided to subsidise household bills in UK history[10]. By producing the clean energy we need at home and being more efficient in how we use it, we can boost our energy independence. This transition is the only way to protect businesses and families for good from increased energy bills resulting from volatile global gas markets.

By accelerating the switch to domestic renewable electricity sources and accelerating the application of clean electricity to the wider energy system, we will be able to reduce our reliance on fossils fuels faster. This enhances energy security, making the UK less vulnerable to global market disruptions or geopolitical tensions that affect energy prices.

[9] Office of Gas and Electricity Markets (Ofgem) (2024), '*Energy price cap (default tariff) policy*' (viewed in December 2024).
[10] National Audit Office (NAO) (2024), '*Report – Value for Money – Energy bills support: an update*' (viewed in December 2024).

Central to delivering decarbonisation in the energy system is ensuring it benefits consumers and businesses.

By building a diverse energy system, we can make the most of our abundant natural resources to protect consumers from future price shocks. However, this mission will not be delivered from Westminster alone – local communities, the clean power sector (comprising industry, academia, and investors) and local government also have a key role to play, and we will empower them to participate in and benefit from decisions on local infrastructure.

We want to ensure that consumers are supported to make choices that benefit them, which will help us deliver on our net zero ambitions.

Market reform and the rollout of flexible technologies will give consumers greater control over their energy bills. For example, consumers might see the impact of Clean Power by installing solar panels which give them greater energy independence or having smart flexible technologies, such as electric vehicles or heat pumps, which enables consumers to take advantage of cheaper tariffs at different times of day.

The government's Warm Homes Plan will provide help for people, including those from fuel poor households, to live in better insulated homes with the ability to take advantage of these new flexible home heating technologies.

Ensuring energy security

When Putin cut off most gas supplies to Europe in 2022, energy prices for families and businesses in Great Britain increased dramatically, even though Russia provided only 4% of our gas imports[11]. Our dependence on globally traded gas for heating and electricity generation was the reason: so long as our energy supply can be weaponised by others, we will remain exposed to global supply shocks and price surges.

In an era of heightened geopolitical risk, switching fossil fuelled generation for homegrown clean energy from renewables and other clean technologies offers us security that fossil fuels simply cannot provide.

We understand that this is not always a like-for-like exchange. As we aim for clean power by 2030, it is crucial we complement renewables with flexible capacity to ensure we can deliver clean power no matter the weather. Historically, unabated fossil fuels have provided this flexibility, but that leaves us exposed to the rollercoaster of fossil fuel prices. This Action Plan sets out a pathway towards deploying low carbon flexible capacity technologies like long-duration electricity storage, power carbon capture, usage and storage (CCUS), and hydrogen to power, working alongside technologies such as nuclear generation, which provide round the clock reliable power.

[11] BEIS (2022), *'Energy Trends special article – Energy imports from Russia'* (viewed in December 2024).

Our 2030 mission will grow the UK's overall generation capacity and expand our network infrastructure so that we can safely and securely meet changing demand patterns in 2030 and beyond, driven by consumers' greener choices through the net zero transition. Taking account of this generational change in the UK's energy system, we are improving electricity market arrangements to ensure secure supply in a clean system transition, as outlined in further detail in the REMA Autumn Update.

As we rapidly deploy new infrastructure, we will maintain high levels of resilience and security – including to severe weather events which are expected to increase in intensity and frequency as a result of climate change, and in managing threats to our national security, such as cyber threats, as our energy system becomes increasingly interconnected. The government has empowered the independent National Energy System Operator with the responsibility to carry out resilience functions across the electricity and gas systems and we will continue to work with industry, regulators and other stakeholders to improve and maintain the resilience of old, new, and future energy infrastructure.

Our energy system must meet demand while protecting families and businesses from global supply shocks and volatile prices. That is what energy security means to this government, and that is what this Clean Power Action Plan delivers.

Our pathway to 2030

Defining the Clean Power target

Clean Power means that by 2030, Great Britain will generate enough clean power to meet our total annual electricity demand, backed up by unabated gas supply to be used only when essential.

In line with independent advice from the National Energy System Operator (NESO), our clean power target means transitioning to an electricity system with the following characteristics in a typical weather year:

- Clean sources produce at least as much power as Great Britain *consumes* in total, and;
- Clean sources produce at least 95%[12] of Great Britain's *generation*.

We expect delivering a clean power system with these characteristics will make Great Britain a net exporter of electricity and will reduce the carbon intensity of electricity generation from 171gCO_2e/kWh in 2023[13] to well below 50gCO_2e/kWh in 2030, well within the Climate Change Committee's Carbon Budget 6 advice[14]. The figures below visualise this target and set out the current generation mix.

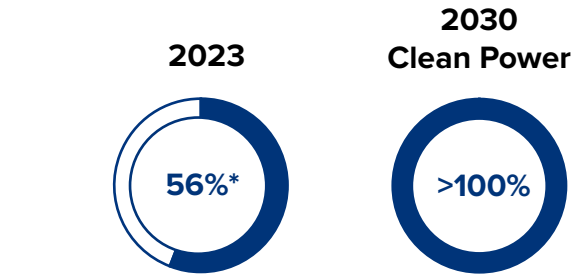
To achieve the mission, we will aim to deliver above this ambition where the system and consumer benefits align so that potential challenges in some areas of clean power delivery can be compensated by deployment elsewhere.

Delivering this target aligns with our ambitious 2030 Nationally Determined Contribution[15] and will help us meet Carbon Budget 6.

[12] See the technical annex for more detail on the definition of 2030 Clean Power.
[13] DESNZ (2024), *'DUKES'* (viewed in December 2024).
[14] Climate Change Committee (CCC) (2020), *'The Sixth Carbon Budget'* (viewed in December 2024).
[15] BEIS (2022), *'UK's Nationally Determined Contribution'* (viewed in December 2024).

Metric 1a:

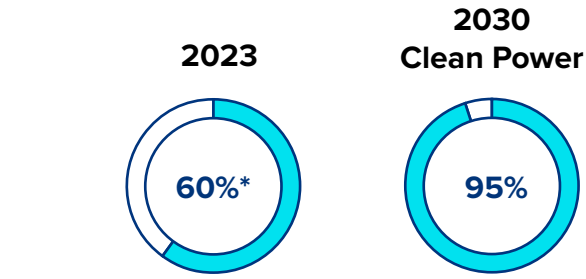
Clean sources produce at least as much power as Great Britain consumes in total.



▼ 44 points below target

Metric 1b:

Clean sources produce at least 95% of Great Britain's generation.



▼ 35 points below target

* This is the closest available official statistic to the clean power 2030 definition at the point of publication. This statistic is for the UK rather than Great Britain and includes gas CHP in the denominator and EfW in both the numerator (the proportion assumed to be from bioenergy) and denominator. Official statistics will be reviewed at a future date to allow us to accurately track delivery.

Metric 2:

Emissions intensity of well below 50gCO2e/kWh by 2030

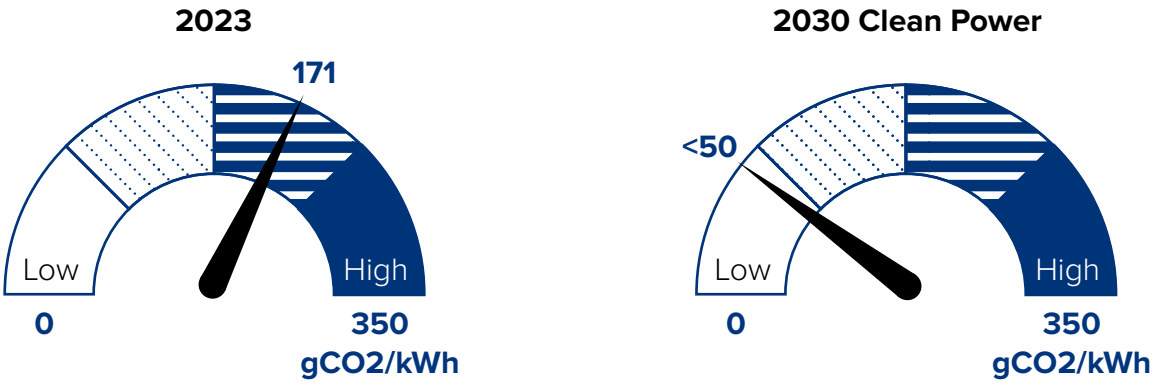
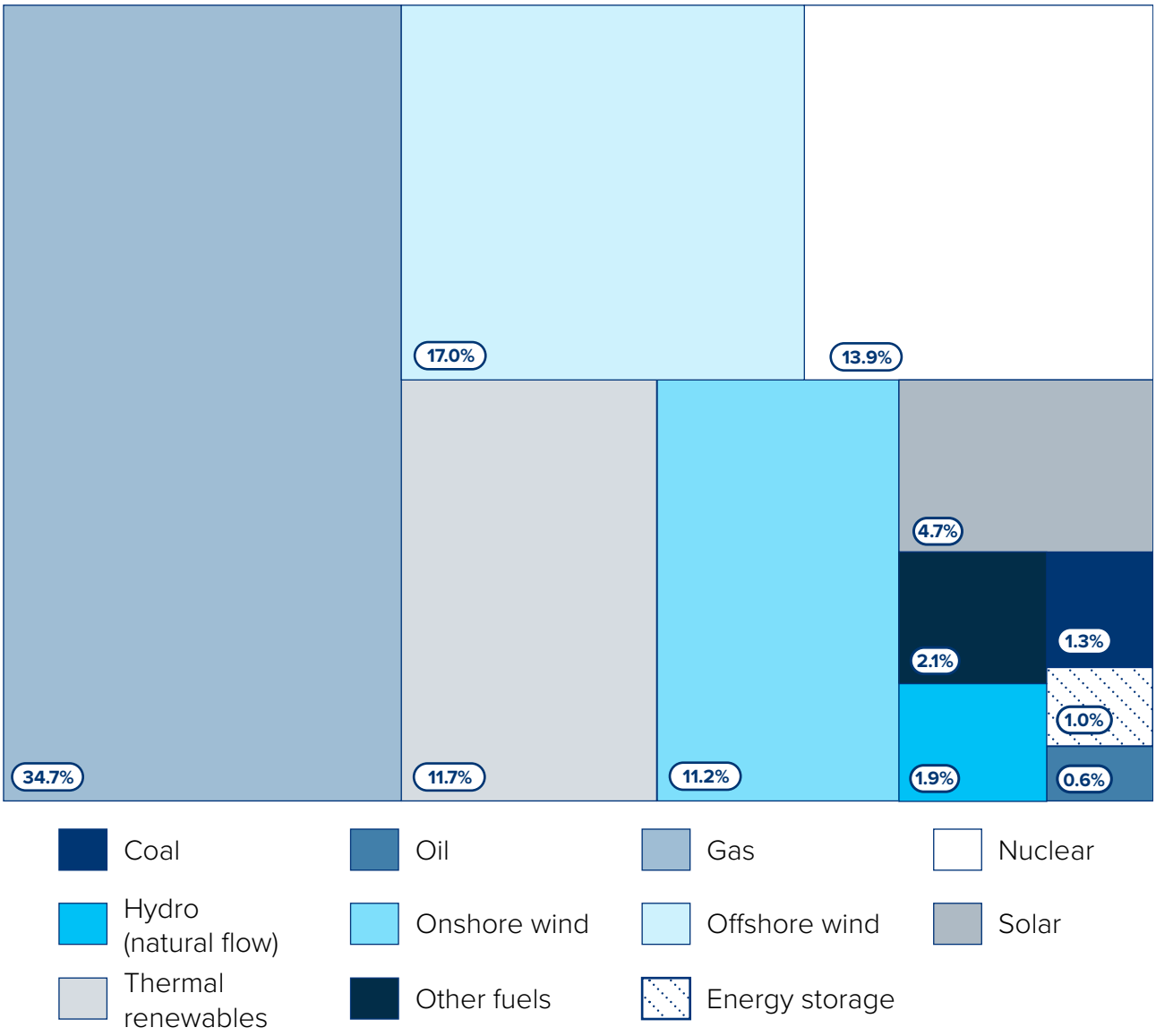


Figure 1: Shares of electricity generated (GWh), 2023



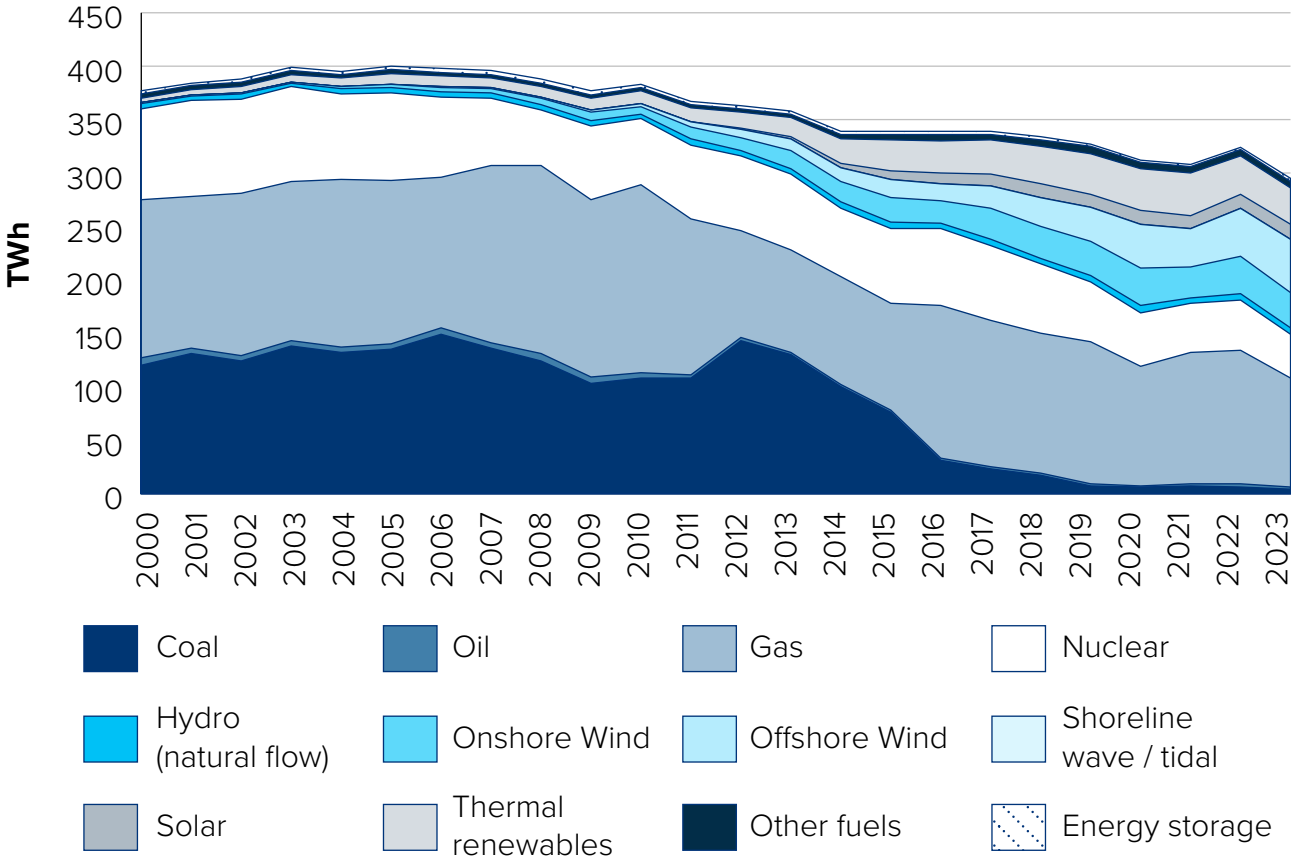
Source: DESNZ (2024), 'DUKES'

Note: The shares of electricity generated are on a UK basis.

What a Clean Power system will look like

Whilst the expansion of renewables in the power system has reduced the share of fossil fuel generation to date – see figure 2 – all routes to a Clean Power system will require mass deployment of offshore wind, onshore wind, and solar[16]. Securing affordable,[17] homegrown renewables means we will be able to run our power system for increasing periods on low carbon generation, with renewables providing the vast majority of generation, and nuclear continuing to deliver a backbone of vital firm low carbon power.

Figure 2: Electricity generation mix (TWh), 2000-2023



Source: DESNZ (2024), 'DUKES'

Note: The generation mix is on a UK basis.

[16] NESO (2024), *'Clean Power 2030'* (viewed in December 2024).

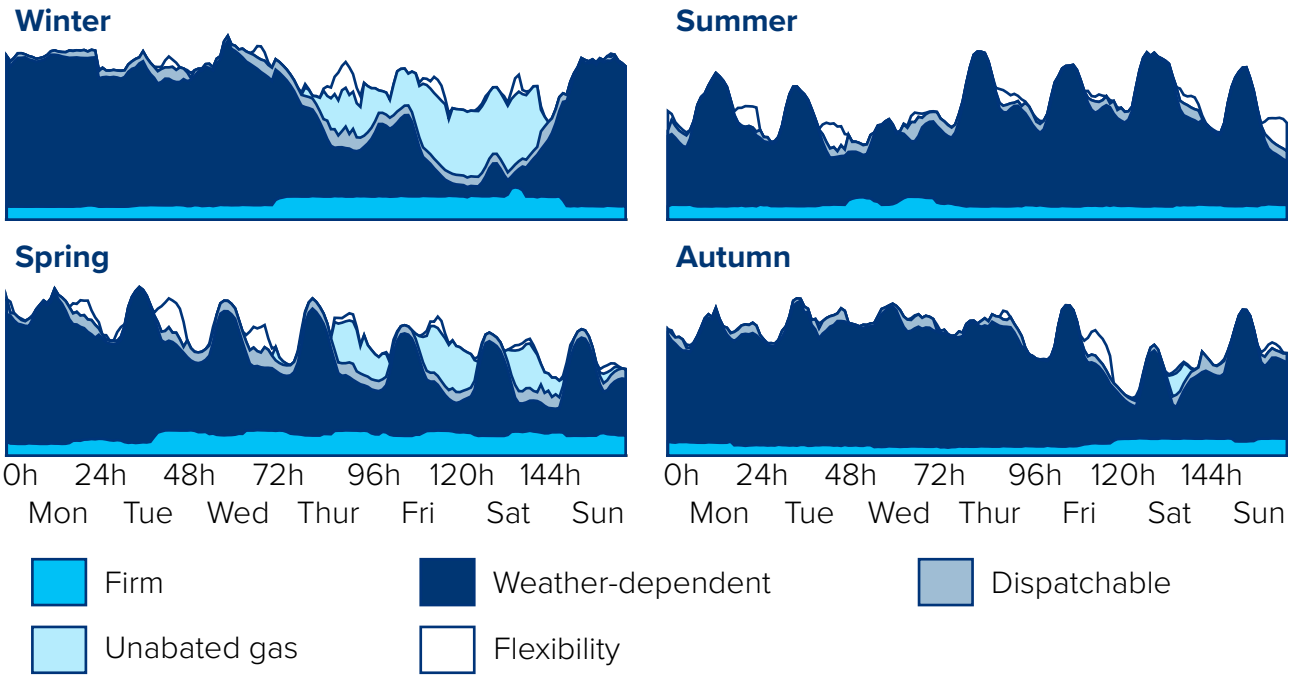
[17] BEIS (2023), *'Electricity Generation Costs 2023'* (viewed in December 2024). The published evidence demonstrates that intermittent renewable electricity sources like offshore wind, onshore wind and solar PV are the cheapest sources of new electricity generation to build and operate.

However, there will be periods over the year, mostly during winter and autumn, where weather conditions and higher electricity demand mean our fleet of renewables and firm generation alone are not able to meet electricity demand. Many of these periods will only be for a few hours. These short periods offer opportunities for flexible, low carbon solutions to meet our needs.

Where renewables alone are unable to meet demand for longer periods, we will enable a suite of technologies to be deployed and maintained to provide longer-duration power capacity. This could be a combination of pumped hydro storage, first-of-a-kind low carbon dispatchable technologies like gas CCUS or hydrogen to power (H2P), or innovative technologies like liquid air energy storage (LAES).

Whilst deploying of longer-duration technologies will help reduce unabated gas generation, we recognise the importance of gas capacity to maintain security of supply. We will see a fundamental shift in the role and frequency of unabated gas generation, moving from generating almost every day of the year, to an important backup to be used only when essential, with generation decreasing as we move towards 2030 – see figures 3-5. This is consistent with NESO's view[18] and aligns with the Climate Change Committee's advice[19] that maintaining gas capacity to use as backup is consistent with a fully decarbonised power system.

Figure 3: Modelled 7-day hourly generation profile in 2030 in the NESO 'Further Flex and Renewables' Scenario (MW)

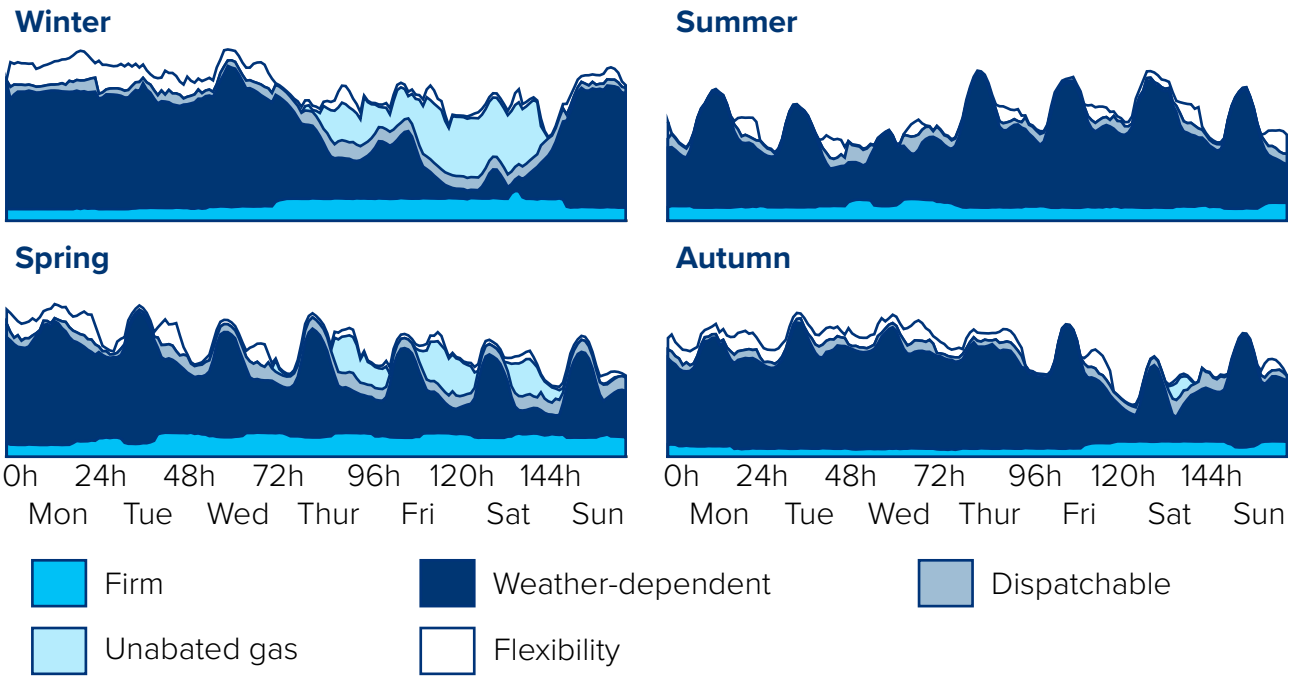


Notes: Firm includes nuclear, hydro, CHP and waste. **Weather-dependent** includes onshore wind, offshore wind and solar. **Dispatchable** includes biomass, pumped hydro, gas with CCS and hydrogen to power. **Flexibility** includes batteries and residential flexibility. Chart only shows when flexibility is discharging, not charging.

Source: NESO (2024), 'Clean Power 2030'

[18] NESO (2024), *'Clean Power 2030'* (viewed in December 2024).
[19] CCC (2023), *'Delivering a reliable decarbonised power system'* (viewed in December 2024).

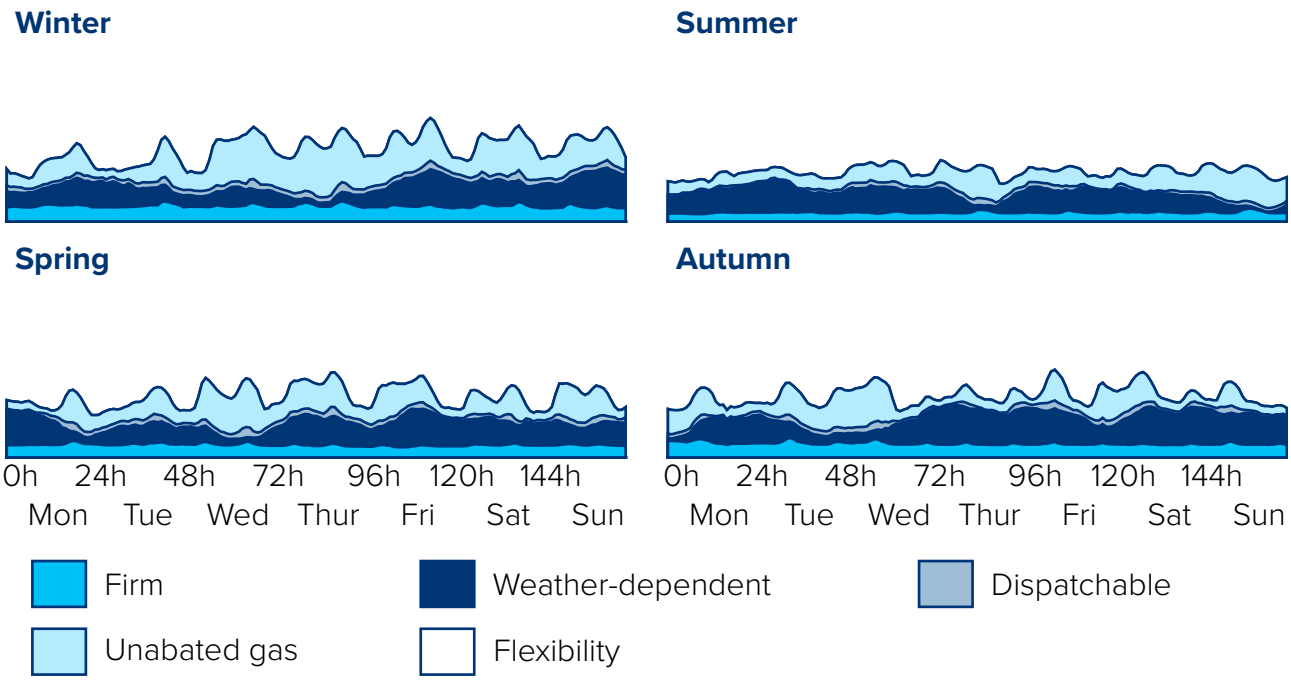
Figure 4: Modelled 7-day hourly generation profile in 2030 in the NESO 'New Dispatch' Scenario (MW)



Notes: Firm includes nuclear, hydro, CHP and waste. **Weather-dependent** includes onshore wind, offshore wind and solar. **Dispatchable** includes biomass, pumped hydro, gas with CCS and hydrogen to power. **Flexibility** includes batteries and residential flexibility. Chart only shows when flexibility is discharging, not charging.

Source: NESO (2024), 'Clean Power 2030'

Figure 5: Historical 7-day hourly generation profile in 2023 (MW)



Notes: Firm includes coal, nuclear, hydro, CHP and waste. **Weather-dependent** includes wind. **Dispatchable** includes biomass, pumped hydro. **Flexibility** is not identified in the historical data. Wind and solar generation are underestimated because they exclude embedded generation and wind farms which do not have operational meters.

Source: NESO (2024), 'Clean Power 2030'

Therefore, the clean power scenarios in Table 1 include technologies that play a range of key roles – variable generation that is renewable, firm generation to meet baseload demand, and dispatchable generation and flexibility for periods of low wind or sun, or higher electricity demand. For each technology, Table 1 shows current installed capacity, alongside, NESO's 'Further Flex and Renewables' scenario, and NESO's 'New Dispatch' scenario.

Using these scenarios, alongside an assessment of maximum feasible deployment based on current knowledge of the project pipeline, we have developed a DESNZ 'Clean Power Capacity Range', which is a range of possible installed capacities for each technology in 2030 – see Table 1. This reflects that there is no singular path to achieving clean power, but instead, that there are a range of scenarios that could get us there. Over time, there will be more clarity on which scenarios are most likely, depending on the outcomes of negotiations and other contract-award processes, and through monitoring delivery of assets with long lead-times, such as the transmission network, offshore wind, and nuclear. This new information will allow the pathway to 2030 to be refined over time, enabled where needed through prioritising connections offers, helping to determine the precise capacity mix required to deliver Clean Power 2030.

Therefore, whilst the 'Clean Power Capacity Range' provides a foundation to guide rapid policy development and focus delivery, the scenarios developed now cannot be exhaustive or definitive, and it is only right that some optionality is retained. In the first instance, this means:

- Government accepts the NESO advice on the infrastructure required for 2030 – decisions are required now to ensure the grid needed for the system in 2030 can be put in place.
- Government sets ranges for deployment of each technology by 2030 and will maintain some optionality until more clarity on which scenario is most likely is available. The 'Clean Power Capacity Range' is provided in Table 1.

There may be technologies not included in these scenarios that could have a role in providing clean power to the system and we will continue to refine our view on these. For example, biomethane is a domestically-produced low carbon gas currently primarily used to decarbonise heating. Biomethane can be used flexibly across many different end-uses – heat, power, industry, transport, agriculture, and hydrogen production – and it may also be able to contribute to low-carbon dispatchable power generation.

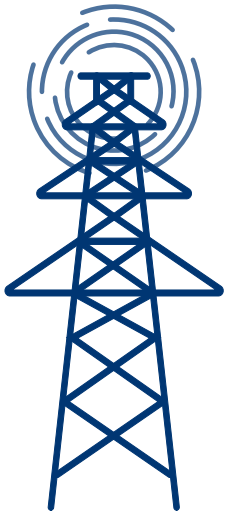


Table 1: Installed capacity in 2030 in the NESO 'Further Flex and Renewables' and 'New Dispatch' scenarios, and the DESNZ 'Clean Power Capacity Range', compared to current installed capacity (GW)

Technology	Current installed capacity[20]	NESO 'Further Flex and Renewables' Scenario	NESO 'New Dispatch' Scenario	DESNZ 'Clean Power Capacity Range'[21]
Variable				
Offshore wind	14.8	51	43	43 – 50
Onshore wind	14.2	27	27	27 – 29
Solar	16.6	47	47	45 – 47
Firm				
Nuclear	5.9	4	4	3 – 4
Dispatchable				
Low Carbon Dispatchable Power[22]	4.3	4	7	2[23] – 7
Unabated gas	35.6	35	35	35[24]
Flexible				
LDES	2.9	8	5	4 – 6
Batteries	4.5	27	23	23 – 27
Interconnectors	9.8	12	12	12 – 14
Consumer-led flexibility[25]	2.5	12	10	10 – 12

[20] Latest publicly available data for Great Britain at the point of publication. The data source for renewables is DESNZ (2024), *'Energy Trends 6.1'*, Q2 2024 data. The data source for nuclear, unabated gas, and LDES is DESNZ (2024), *'DUKES 5.12'*, 2023 data. The data source for consumer-led flexibility is NESO (2024), *'Clean Power 2030 Table 2'*, 2023 data. The data source for batteries is Modo Energy (2024), *'Indices & Benchmarks'*, Q4 2024 data. The data source for interconnectors is Ofgem (2024), *'Interconnectors'*, 2024 data. Low carbon dispatchable power includes biomass, power BECCS, gas CCUS and hydrogen to power. The data source for biomass/ power BECCS is NESO (2024), *'Clean Power 2030 Table 2'*, 2023 data. Gas CCUS & hydrogen are new technologies so there is no installed capacity at the point of publication.

[21] In addition to the two NESO scenarios, these ranges have been informed by internal modelling and an assessment of maximum feasible deployment based on current knowledge of the project pipeline. Therefore, the range differs from the range of the two NESO scenarios in some instances. However, for solar, there is scope to exceed the 47GW upper limit, subject to system need, noting for example the potential of rooftop solar to boost deployment – see Connections Annex for further details.

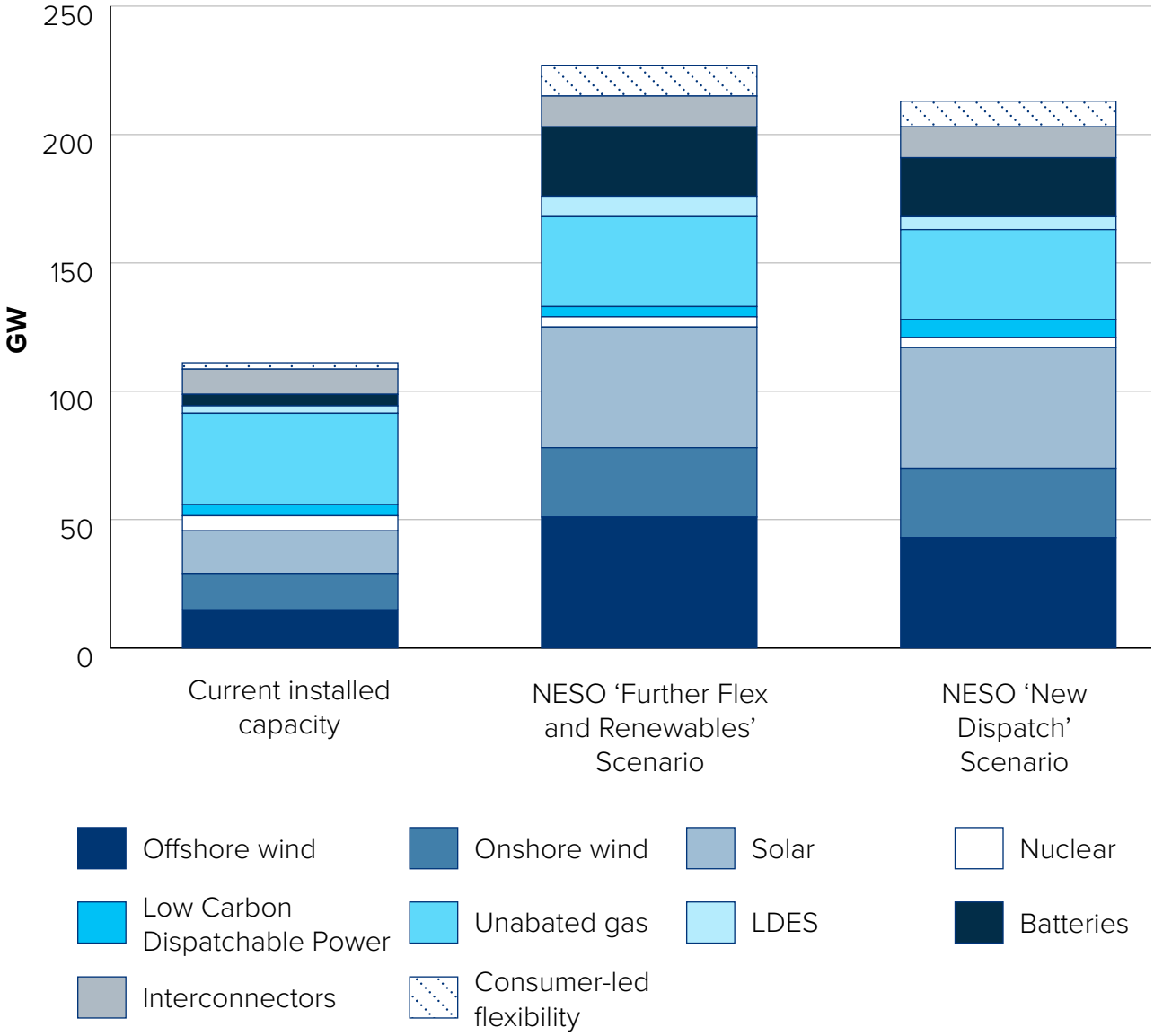
[22] Dispatchable technologies are ones which combust fuel to produce electricity and, by varying the rate at which fuel is burned, can respond to meet the needs of the grid with varying levels of flexibility. This category includes biomass, power BECCS, gas CCUS and hydrogen.

[23] The low end of the range represents the minimum capacity we expect to have in 2030. There is uncertainty on the amount of biomass capacity that will be on the system in 2030 with some existing support arrangements ending from 2027 onwards. HMG is considering the position on potential future support arrangements, but no decisions have yet been taken.

[24] While delivering its Clean Power ambition for 2030, the government's aim is to ensure there will be sufficient flexible capacity on the system to meet security of supply. This includes retaining existing unabated gas capacity.

[25] Excluding storage heaters.

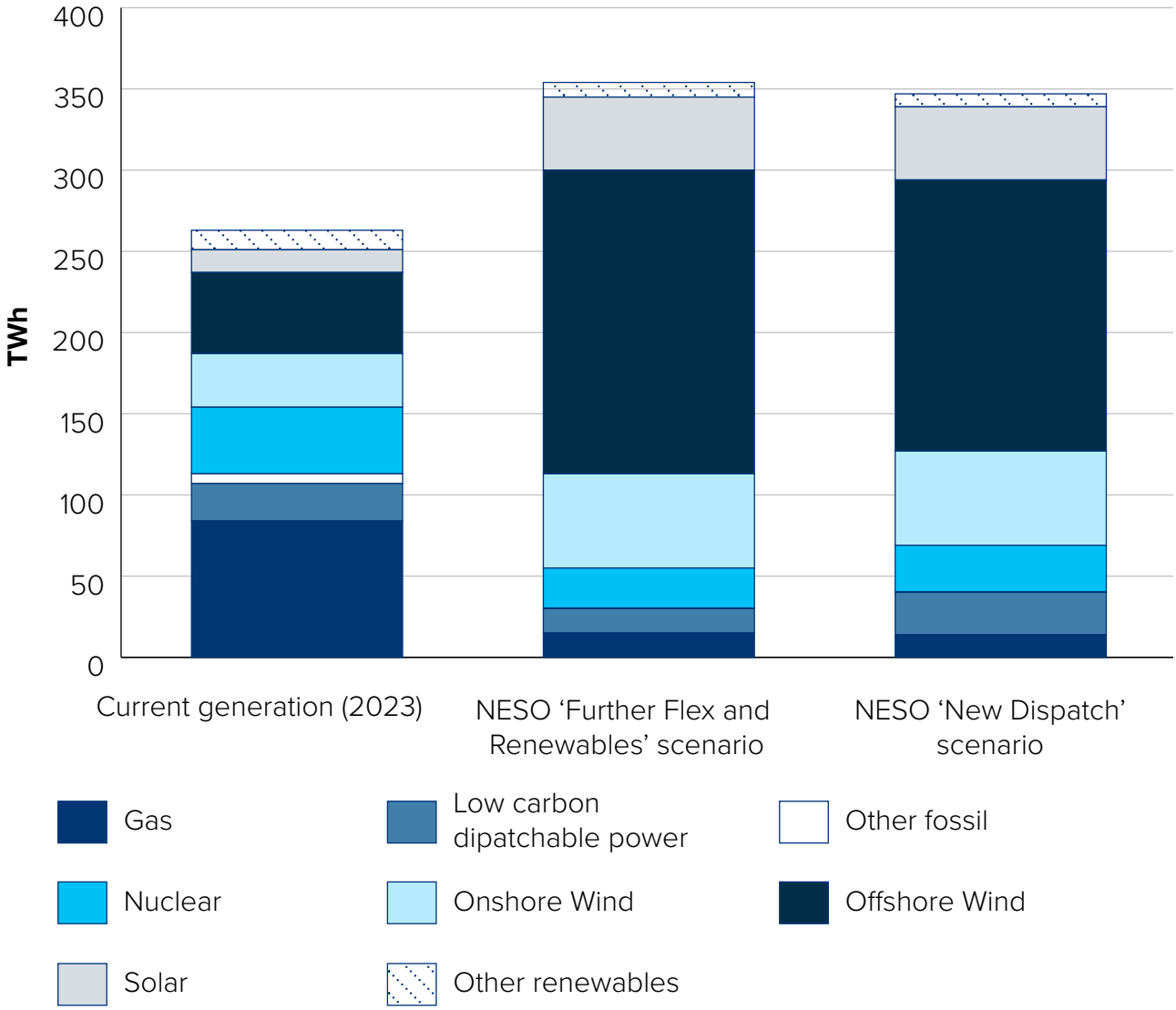
Figure 6: Installed capacity in 2030 in the NESO 'Further Flex and Renewables' and 'New Dispatch' scenarios, compared to current installed capacity (GW)



Note: Numbers for this visual can be found in Table 1

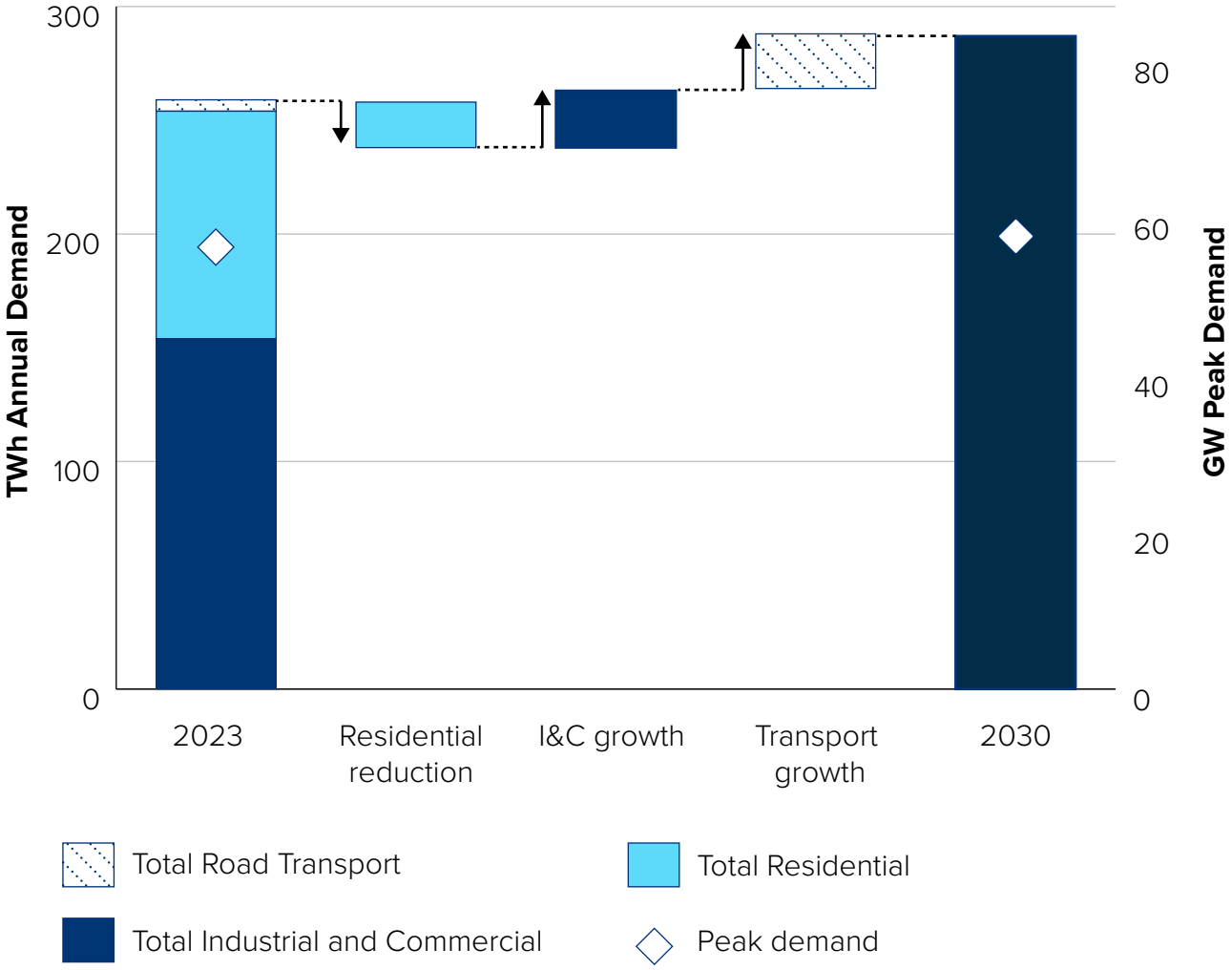
Source: Table 1 and NESO (2024), 'Clean Power 2030'

Figure 7: Generation in 2030 in the NESO 'Further Flex and Renewables' and 'New Dispatch' scenarios, compared to current generation (TWh)



Source: NESO (2024), 'Clean Power 2030'

Figure 8: Changes in consumer electricity demand (TWh annual demand, GW peak demand), 2023- 2030



Note: Peak demand is Average Cold Spell (ACS) peak demand. Peak demand is after smart charging and heat flexibility that occur daily, but does not include V2G and DSR that are less frequently used in the modelling.

Source: NESO (2024), 'Clean Power 2030'

Delivering Clean Power 2030

Delivering capacity that aligns with the 'Clean Power Capacity Range' in Table 1 requires deployment at a very significant scale and pace, which can only be delivered by taking rapid action to unblock delivery challenges. For most technologies, meeting the 'Clean Power Capacity Range' is achievable through delivering and accelerating projects already in the pipeline. Still, these technologies require significant policy action to unblock barriers to ensure timely delivery.

Delivering new capacity for 2030 could be more challenging for some technologies with longer lead-times. Clean Power 2030 capacities are most stretching for hydrogen to power and power bioenergy with carbon capture and storage (BECCS), due to limited availability of transport and storage infrastructure for hydrogen and CO_2 respectively. The amount of overall capacity required also depends heavily on peak demand, which is driven by consumer uptake of technologies such as electric vehicles and heat pumps, usage patterns, and levels of consumer-led flexibility.

To increase our chances of delivery, the 'Clean Power Capacity Range' provides a foundation to prioritise the most critical infrastructure to meet Clean Power 2030, which we know will be key to supporting further progress into the 2030s:

- **Connections:** Fundamental reform of the connections process is urgently needed to operationalise Clean Power 2030 and ensure the electricity system meets longer-term strategic needs. Our capacity range provides a framework for NESO to work with Transmission Owners and Distribution Network Operators to prioritise connection offers for strategically aligned projects that can demonstrate they have the means to deliver. To enable NESO to deliver efficient reform, we have set out regional breakdowns of our capacity range for onshore wind, solar, and batteries – providing clarity to developers, investors and network operators on what to connect, where. To continue progressing infrastructure required beyond 2030, our Connections Annex also sets out technology capacity ranges that NESO proposes to use as an indication of what is required on the system by 2035, to guide new connection offers until the Strategic Spatial Energy Plan is published in 2026. This will provide a 10-year horizon for connection agreements. These ranges are mostly derived from NESO's net zero-aligned Future Energy Scenarios (FES), with a bespoke approach[26] proposed for onshore wind and unabated gas. See the 'Networks and Connections' section for more detail.
- **Strategic Spatial Energy Plan:** Our 2030 capacity range is a key input to the development of this Plan, forming its baseline. The SSEP will build from the 2030 capacity range to offer a longer-term spatial plan for the energy system beyond 2030. This will help to ensure strategic coherence between short-term action to deliver 2030 Clean Power and longer-term spatial planning, to enable long-term decarbonisation and energy security.
- **Planning:** Accelerating clean infrastructure projects through the planning system is critical to achieving our goal and unleashing investment to support the Prime Minister's Growth Mission. Our capacity range will ensure that planners and statutory consultees at the national and local level have a clear sense of which projects to prioritise for consideration and, where appropriate, fast-track through the process to enable decisions on consent to be taken sooner[27]. See the 'Planning and consenting for new energy infrastructure' section for more detail.
- **Visibility to industry and investors:** As a challenging goal, delivery of Clean Power 2030 will only be possible if there is a clear understanding across the sector of what needs to be achieved, and if we offer to investors a clear prospectus of the opportunities.

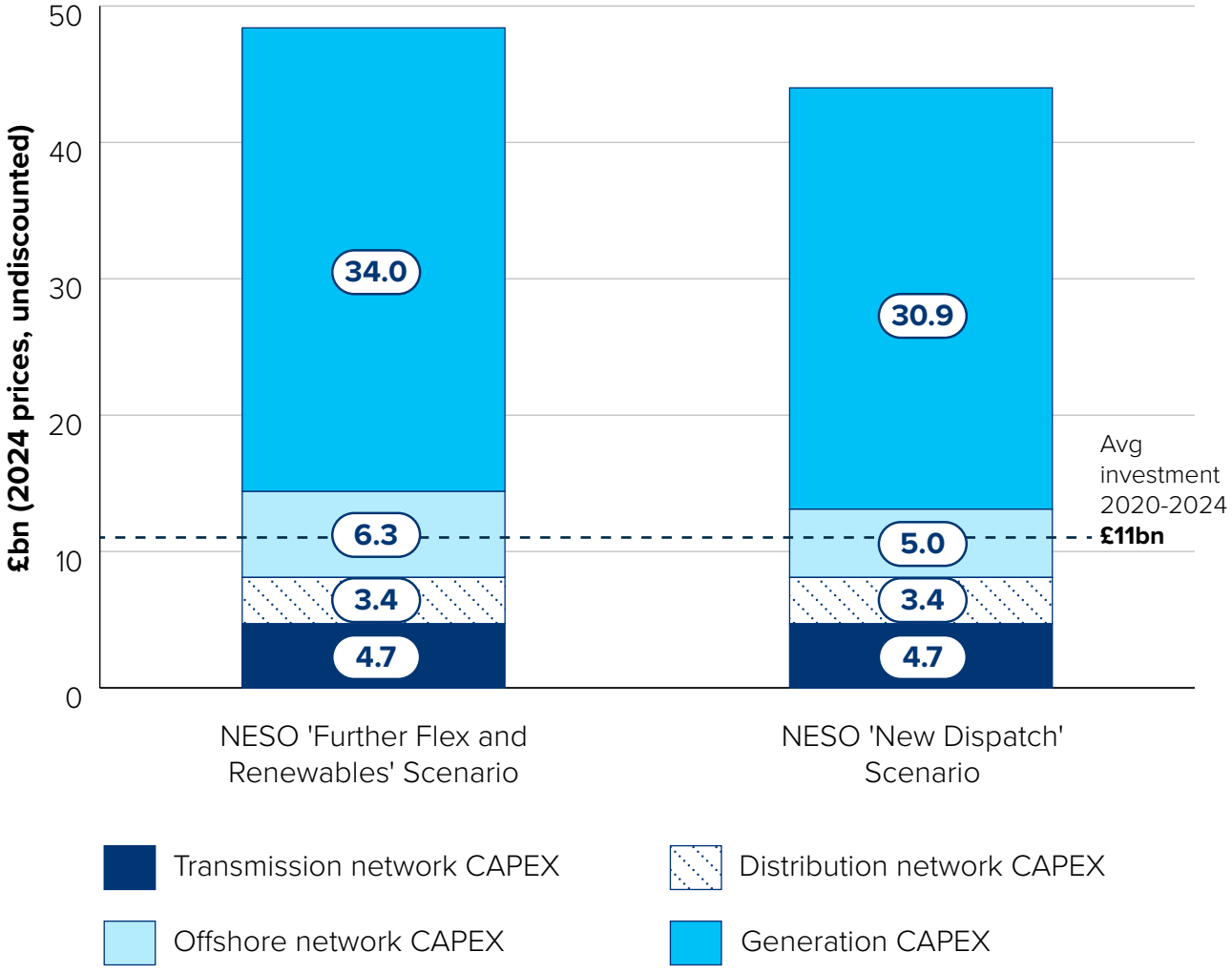
[26] We are proposing a bespoke approach for onshore wind because the FES projections are based on assumed ONW growth rates in England and Wales which pre-date the decision taken by Secretary of State in July to remove the de-facto onshore wind ban. As a result, we have increased the capacity range for onshore wind to 2035 – see Connections Annex for further detail.
[27] Final decisions on planning consent remain subject to meeting necessary planning and other regulatory approvals.

Cost and consumer impacts of Clean Power 2030

The level of deployment set out in Table 1 will require substantial investment across the country, an estimated **£40 billion**[28] on average per year between 2025-2030, much of which will be private investment.

This broadly aligns with NESO's investment estimate – see figure 9. In addition, by transforming the way we generate electricity, we will build a power system that is not just cleaner, but importantly less reliant on fossil fuels, thereby reducing our exposure to volatile gas prices.

Figure 9: Average annual investment in the NESO 'Further Flex and Renewables' and 'New Dispatch' scenarios, 2025-2030, £ billions, 2024 prices, undiscounted



Source: NESO (2024), 'Clean Power 2030'

[28] Undiscounted, 2024 prices. This includes £30bn investment in generation assets, and £10bn investment in transmission network assets. See the technical annex for more detail on how this was calculated.

In their advice, NESO set out their analysis of potential impacts of delivering Clean Power on electricity costs in 2030[29]. This indicated it could be delivered with similar costs to today, with scope for lower electricity costs and bills by 2030 as wider changes are taken into account.

This plan proceeds on the basis of the NESO analysis. The precise impact we will see on bills in coming years will depend on a range of factors, including the pathway chosen and other policy choices made going forward as well as the impacts of exogenous factors such as gas prices. As set out above, there are multiple capacity mixes that can achieve Clean Power in 2030. The government will scrutinise every policy choice for the impact it can have in reducing bills facing consumers, as well as value for money and affordability.

The new, more flexible consumer-led energy system will also offer many opportunities to lower the bills customers face. We already see individuals with solar panels and EVs taking advantage of these technologies. The government is determined to ensure it is not just those who are the best informed or better off who have access to these ways to save money. That is why rolling out half-hourly settlement, for example, is so important so that consumers have lower tariffs on offer for consumption at different times of day.

Importantly, Clean Power will protect electricity consumers from volatile gas prices. As the electricity system decarbonises, unabated gas generation is used less often. As a result, there will be an increase in the proportion of generation being paid a contracted price rather than the potentially volatile wholesale price, while the wholesale electricity price itself will also be increasingly decoupled from gas prices. As we rollout renewables, we will see a significant reduction in wholesale prices, the foundation for building an energy system that can bring bills down for good.

During the recent energy crisis, following the invasion of Ukraine, we saw the electricity price cap increase by over £1,300 in a year, peaking at £2,000. To protect businesses and consumers, government put in place energy support schemes at an estimated cost of £44 billion[30]. If a clean power system had been in place at the peak of the gas price crisis, it could have saved significant sums for households, businesses and taxpayers. This is the scale of the prize on offer in terms of stability and energy security.

The role of a clean power system in reaching net zero by 2050

Meeting the Clean Power 2030 goal is key to accelerating to net zero, not only in eliminating emissions that currently come from electricity generation but also via the application of clean power in the buildings, transport and industry sectors. A range of technologies, including electric vehicles and heat pumps, can help us switch away from the use of fossil fuels in these sectors, often improving the efficiency of the energy system in the process.

The shift to a clean power system by 2030 forms the backbone of the transition to net zero, as we move to an economy much more reliant on electricity. By 2050, annual electricity demand is likely to at least double as a result of electrification.[31] Over the period to 2030, most of the emissions reduction from clean power will come directly through displacing fossil fuel electricity generation. By contrast, in the period from 2030 to 2050, the further emissions reductions from

[29] NESO (2024), *'Clean Power 2030'* (viewed in December 2024).
[30] NAO (2024), *'Report – Value for money: Energy bills support: an update'* (viewed in December 2024).
[31] BEIS (2022), *'Electricity networks strategic framework, Appendix 1 – Electricity Networks Modelling'* (viewed in December 2024).

clean power will come indirectly, through its application to displace fossil fuel use in other sectors, for example in boilers and vehicles.

The Climate Change Committee estimate in the Sixth Carbon Budget report that a clean power system will nearly eliminate the emissions relating to electricity generation by 2050 (currently 12% of total UK greenhouse gas emissions)[32]. In addition, a clean power system will enable transport, buildings and industry sectors to switch from fossil fuels to electricity and contribute 47% of the further emissions reductions required by 2050.[33]

However, although electrification provides the most potential for reaching net zero, it is not the solution for every use of energy across the economy, and will need to be supplemented by targeted deployment of CCUS and hydrogen, alongside action outside the energy system. Delivering Clean Power 2030 is the first part of a longer journey and the challenges for the clean power system will change over time, reflecting the greater long-term emphasis on electrification and the opportunity and necessity to deploy technologies with long lead-times:

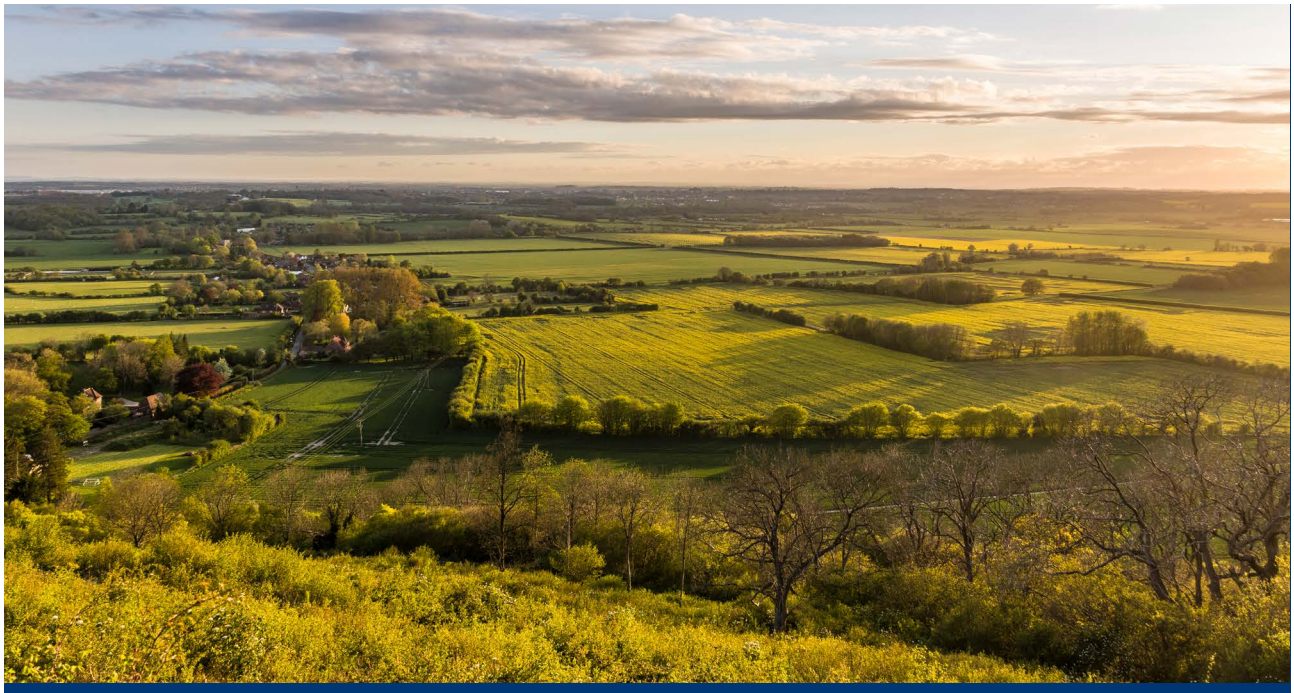
- **At least a doubling of demand:** Electrification and other needs for clean power as part of net zero are likely to result in at least a doubling of electricity consumption compared to today, with even larger amounts required if there are significant roles for electricity-intensive decarbonisation routes such as green hydrogen and e-fuels for aviation and maritime. This will require strong growth in power generation from a diverse range of clean sources on a sustained basis through the 2030s and 2040s. There is an essential role for innovation on the path to 2030, to ensure the right technologies are supported to progress through technology readiness levels in the coming years, to enable mass deployment in the decades to come.
- **Nuclear:** Nuclear will play an important role in our future energy system, providing low-carbon, baseload power to the grid. Government will continue to seek to streamline regulatory processes, and foster innovation in nuclear technology, to ensure that nuclear continues to play an important role in the net zero transition after 2030. The budget set out that final decisions on Sizewell C and the Great British Nuclear-led Small Modular Reactor programme will be taken at the Spending Review.
- **An ever-smarter system:** As the extent of electrification of the wider energy system grows, so will the opportunity for a huge amount of short-duration consumer-led flexibility through flexible use of electric heating and smart charging of vehicles – promising wider access to smart tariffs for consumers aiming at lowering their bills, and lower system costs for the nation.
- **More seasonal and spikier demand:** While the within-day picture for electricity demand may be quite smooth in the longer term, electrification of space heating for buildings will lead to demand for electricity that is considerably more seasonal than today, and more changeable due to the requirements for heat on particularly cold days. This suggests a particularly important role for offshore wind in matching demand, as it tends to generate more strongly in the winter than other times of year, as well as low carbon dispatchable power to provide a very long-duration storage solution, including meeting demand during periods that are cold but less windy.

[32] DESNZ (2024), *'UK territorial greenhouse gas emissions national statistics'* (viewed in December 2024).
[33] CCC (2020), The Sixth Carbon Budget - The UK's path to Net Zero, Figure 2.6 (viewed in December 2024).

- **Reforming our market arrangements:** Our current electricity markets were largely designed for the fossil fuel-based power system of the past. The Review of Electricity Market Arrangements (REMA) Programme is considering the reforms needed to ensure that our market arrangements remain fit for the renewables-dominated power system of the future.

- **Further need to strengthen networks:** Higher, and spikier demand for electricity due to electrification will inevitably require strengthening of electricity networks, particularly at the distribution level. The timing and extent of this will, to some extent, depend on the precise mix of heat decarbonisation solutions deployed.

These are all challenges that we need to plan for now in order that the 2030 Clean Power system is fit for its pivotal role beyond 2030 in reaching net zero. Our actions sit alongside a wider framework being developed to lay the foundation for the longer-term plans for the GB energy system: the Strategic Spatial Energy Plan (SSEP), Centralised Strategic Network Plan (CSNP), and Regional Energy Strategic Plans (RESPs).



Integrating clean power and the natural environment

The world is facing twin climate and nature crises which threaten our global health, wealth and security. These are inextricably linked. Not only is the UK government committed to reaching net zero by 2050 and clean power by 2030, it is also committed to restoring nature, as demonstrated, for example, with the Environment Act targets in England to halt the decline in species abundance by 2030, and to effectively protect our Marine Protected Areas as part of our global 30 by 30 commitment.

The UK is one of the most nature depleted countries in the world, so it is not enough for us to "protect" or "conserve" the nature we still have left. This is why this Government has committed to restoring nature through such targets, and our related international commitments.

Climate change is itself one of the greatest threats to nature in the years ahead, which is why one of the most important things we can do to protect nature is deliver clean power by 2030 - tackling the UK's dependence on fossil fuels and driving international climate action. Equally, nature is a key ally in helping us tackle the climate crisis, both through mitigation and adaptation.

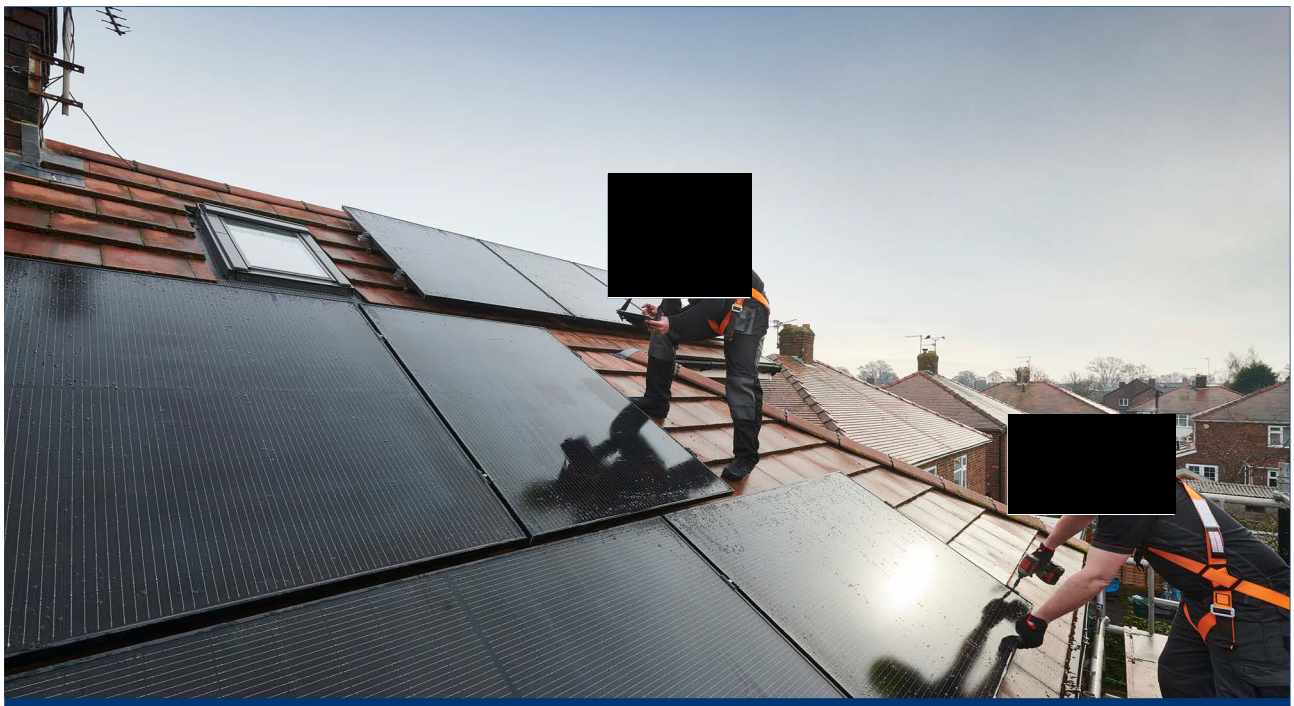
We should therefore ensure delivery of our climate and nature targets wherever possible, in an integrated and joined up way. This means ensuring habitats like peatlands store rather than emit greenhouse gas emissions; or restoring salt marshes and sea grasses so that they are sequestering carbon as well as protecting our coastal communities from rising sea levels and extreme weather. This means

that new energy infrastructure should be built in a way that protects the natural environment by following a "mitigation hierarchy" to do what is possible to avoid damage to nature, and then minimising, restoring and delivering compensation when damage is impossible to avoid.

The real opportunity available to the UK is to deliver clean power by 2030 in a way that doesn't simply avoid or compensate for damage to nature, but constantly innovating to deliver the target in a nature positive way, such as rewetting lowland peat soils at the same time as constructing new solar farms or creating new wildlife corridors alongside or underneath linear energy infrastructure.

This approach is not so much about "balancing" energy and the environmental needs; it's about *integrating* them. It's about rebuilding our natural infrastructure at the same time as building the new energy infrastructure we need for the twenty first century. It's about delivering on our climate and nature targets, and delivering climate, nature and economic resilience for the UK in a joined up, environmentally and cost-effective way.

Government will launch an engagement exercise in early 2025 to invite communities, civil society and wider stakeholders to submit their ideas on how government can best encourage nature-positive best practice into energy infrastructure planning and development. Feedback from this exercise will allow government to better understand how we can integrate nature restoration through Clean Power 2030.



Supporting businesses and promoting growth

With 90% of global GDP covered by net zero targets[34], clean energy industries represent a significant potential growth area. These industries can generate new jobs through domestic manufacturing and services and preserve our Energy Intensive Industries in a decarbonised economy. Additionally, the only way to guarantee our energy security and protect billpayers permanently is to speed up the transition away from fossil fuels and towards homegrown clean energy.

By accelerating the transition to renewable energy sources, we are creating a more stable environment that is conducive to growth and minimises energy price led inflation. This stability is crucial for businesses, as it helps ensure that energy bills stay low, and allows them to plan and invest with confidence, knowing that they will not be subject to the volatility of fossil fuel prices. If gas price spikes occurred even once every decade, it could cost the UK between 2-3% of GDP annually, adding 13% of GDP to public debt by 2050[35].

Another of the key benefits of Clean Power 2030 and the scale up of clean energy sectors is the creation of new job opportunities in locations across the UK, particularly in coastal regions for offshore wind farms and in regions like the North West of England and North Wales for hydrogen production and carbon capture[36] whilst also supporting industrial jobs.

[34] Climate Action Tracker (CAT) (2023), *'CAT net zero target evaluations'* (viewed in December 2024).
[35] Office for Budget Responsibility (OBR) (2023), *'Fiscal Risks & Sustainability'* (viewed in December 2024).
[36] CCC (2023), *'A Net Zero Workforce'* (viewed in December 2024).

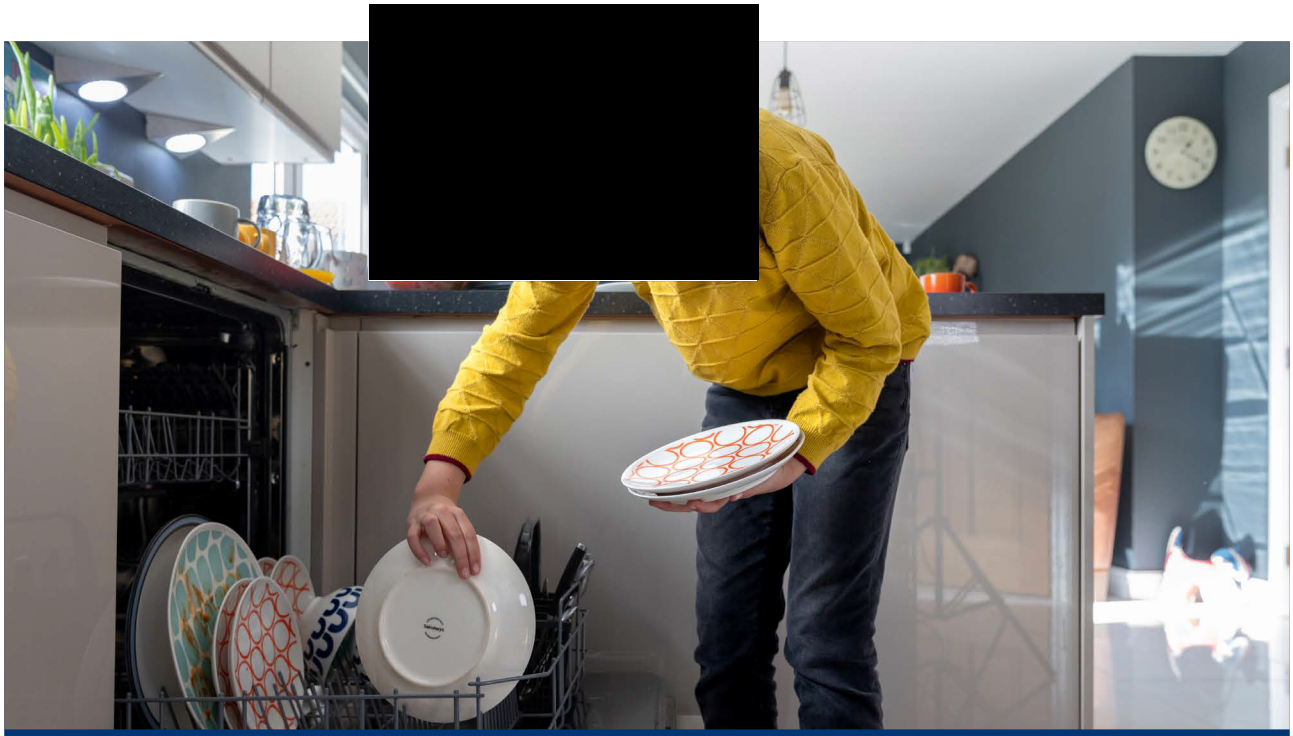
As we invest in the development of wind, solar, and other renewable energy projects, we will see a surge in demand for skilled workers in these industries and the industries and services that support their deployment. Reskilling our workforce will play a crucial role, with evidence suggesting a high degree of transferability between the UK's oil and gas workforce and the offshore renewables sector[37]. This will not only provide employment opportunities but could also stimulate local economies and drive innovation[38]. Studies have shown that green jobs tend to provide increased productivity and higher wages than non-green jobs, especially for middle and lower skilled workers[39]. A significant proportion of these jobs are expected to be in the energy efficiency and low carbon heating sector[40]. Increased jobs are also expected in low carbon energy, CCUS, hydrogen and electric vehicle manufacturing.

Decarbonising the UK economy could reduce regional inequalities, creating new jobs and supporting existing jobs in industrial heartlands and preventing decline in areas dependent on the oil and gas sector. For example, according to EDF[41], the Hinkley Point C project is helping young people stay and thrive in Somerset. The local area has seen a 25% growth in young people aged 25-39 – 3 times greater than the national average and local areas seeing a growth in the number of medium-sized companies that is ten times higher than anywhere else in the South West[42].

The Scottish Government has invested in a package of skills interventions in the North East of Scotland, supporting the transferability of the workforce across sectors to meet the needs of the net zero transition. This includes an Energy Skills Transition Hub and National Energy Skills Accelerator.

There are also opportunities for the UK to capture more of the value chain for key clean energy industries and the potential to drive inward investment in domestic supply chains. In Spring, the government will publish the new Industrial Strategy, with Clean Energy Industries as a priority growth sector.

[37] Robert Gordon University (2023) *'Powering up the workforce'* (viewed in December 2024).
[38] Zenghelis et al. (2024), *'Boosting growth and productivity in the United Kingdom through investments in the sustainable economy'* (viewed in December 2024) and CCC (2023), *'A Net Zero Workforce'* (viewed in December 2024).
[39] CCC (2023), *'A Net Zero Workforce'* (viewed in December 2024).
[40] CCC (2023), *'A Net Zero Workforce'* (viewed in December 2024).
[41] EDF (2024), *'Socio-economic Impact Report 2024'* (viewed in December 2024).
[42] EDF (2024), *'Helping Britain achieve net zero'* (viewed in December 2024).



How Clean Power 2030 will transform our energy system

Clean Power 2030 will be a major step towards realising an ambition of a clean, contemporary, digitalised energy system based largely on electricity, to be developed further in later years as part of decarbonising the whole economy. For energy consumers and citizens this will be a transformation in their relationships with energy.

Just as it has in so many other sectors before, such as banking, media, and retail, digitalisation will pave the way for a consumer-led transformation of the energy system, characterised by new business models, firms, and markets. While this will gain momentum in the period to 2030, it will continue to do so far beyond that date, as part of decarbonising the whole economy.

Lessons from other sectors are clear: digitalisation can increase consumer choice, bring down costs for everyone, and lead to the development of more consumer-friendly products and services.

Importantly for the energy system, this digitalisation will simultaneously unlock transformation of the demand side, a critical part of the energy system in the move to clean power and one which has been historically overlooked, failing to serve the best interests of consumers.

The system of the future will give consumers choice over how they engage, ranging from little change to today, through to being able to benefit from bill discounts thanks to smart tariffs. They will be able to engage physically by using appliances when electricity is cheaper or via automated systems managing this on their behalf. These would control how major appliances like car chargers, heat pumps, water heaters, washing machines/dryers, and fridge/freezers use their electricity to take advantage of low prices within the day and integrate the outputs of any residential generation such as rooftop PV, and household energy stores, potentially including the battery in your electric car.

The government is clear that engagement with these systems will be entirely voluntary, led by consumers. Under the previous government, consumers were offered the option to take advantage of different tariffs at different times. The evidence was that consumers were enthusiastic about the possibilities[43]. But this should not be a choice just given to the most informed consumers but to all. That is what the system of the future is about.

[43] NESO (2023) *'Household engagement with the Demand Flexibility Service 2022/23'*

What Clean Power means for local places

Boosting industry and transforming local economies with clean, homegrown energy

After the grid was first consolidated from 1926-33, energy became a lot cheaper, and this had a beneficial impact on industry, driving down costs[44].

In the same manner but on a much larger and more transformative scale, Clean Power 2030 will catalyse a new era of renewable energy, opening up the possibility for new ventures previously held back by the price of fossil fuels.

It will ensure that the benefits of clean power are spread throughout the country, driving new investment and industry into local places and communities. For example, enabling the development and growth of energy intensive industries across Scotland.

These changes will have a profound impact on people's livelihoods, as they bring with them new, higher value, future-proof jobs and employment.

[44] Butler (2001), *'The nature of UK electricity transmission and distribution networks in an intermittent renewable and embedded electricity generation future'* (viewed in December 2024).

Creating a fairer, more equitable energy system

Clean Power 2030 will create the conditions needed to drive investment in, and scale, locally led, owned and managed energy developments. Local leadership will be empowered to play a more active role in delivering the transition – for example, through partnering with and providing support to community energy groups and local and combined authorities, GBE's Local Power Plan will support the rollout of renewable energy projects using established technologies to contribute up to 8GW of clean, homegrown energy.

Communities and the people who live in them and the businesses that serve them, will see clearer links between local projects, and local benefits.

For example, the UK's first hospital-owned solar farm has not only contributed to the daily power needs of Morriston Hospital in Swansea, but also covered 100% of its demand for prolonged periods of time, helping save carbon and bills.

Through its Community and Renewable Energy Scheme, the Scottish Government supports the growth of community energy and helps communities engage in and benefit from the energy transition. To date, the Scheme has advised over 1200 organisations and provided over £67 million in funding to communities throughout Scotland, supporting over 960 projects and the installation of 63 MW of renewable energy.

Building trust, knowledge and confidence to support household technology adoption

Enabling truly local energy led by local citizens, businesses and local leaders will also play a vital role in citizen engagement, with local developments and business models in some cases representing the first real, 'tangible' occasion that local people can learn about and experience renewable energy.

These experiences will help to grow public trust and knowledge. Greater visibility and demystifying of renewable energy at the local level across Great Britain will support electrification right down to the level of the individual household, providing citizens with the confidence to adopt low carbon technologies, keeping us on track for our wider net zero targets beyond 2030.

Removing roadblocks: lowering barriers to investment, development and deployment

Delivering Clean Power 2030 will require reforms to the overarching structures that underpin delivery and operation of the energy system, to ensure they do not act as blockers to deployment of clean power projects.

We need to make sure that consenting regimes work to bring new projects through the system at pace, that the network expands rapidly so that our vast supply of clean electricity can be transported to centres of demand, and that the underpinning supply chain and workforce are available and capable to ensure this transformation is delivered.

We also need to ensure that the market works in tandem with support schemes to deliver the right investment signals, and that any sector-specific barriers to deployment are appropriately addressed, to enable the huge volume of deployment that will underpin Clean Power 2030.

This section of the Action Plan sets out how government will ensure this is delivered, with chapters covering:

- Planning and consenting for new energy infrastructure
- Networks and connections
- Renewable and nuclear project delivery
- Reforms to electricity markets
- Short-duration flexibility
- Long-duration flexibility
- Supply chains and workforce

Planning and consenting

Summary

Our current planning systems across Great Britain are not working at the pace required to meet our target for clean power by 2030. Planning systems are devolved and the regimes vary across Scotland, England and Wales, although similar problems are encountered in each. Lengthy paperwork and often-delayed processes for infrastructure projects hinder our energy security, our economic growth, and fails to deliver for the natural environment. The increased risks to projects associated with delays in planning decisions also increase costs across the system.

Our planning system needs to quickly change to enable government's missions to grow the economy and deliver clean power. Since July, the government has taken decisive steps towards making planning work better for clean power and economic growth. We've lifted the de facto ban on onshore wind in England and have committed to updating our National Policy Statements. We must go further. Processes are not suitable nor are examining authorities well-equipped to deal with the increase in new clean power projects and wider infrastructure that we expect in the coming years to achieve government's missions. There is particular urgency to accelerate the planning process across Great Britain for energy infrastructure since we do not have long for many clean power projects to begin construction if they are to be operational for 2030, especially networks and offshore wind developments.

The urgent need for change means we must undertake a wide-ranging reform programme, encompassing not only deep changes through primary legislation over the course of this Parliament, but to also get moving with operational and regulatory reforms across the system within the next year. Therefore, to enable clean power 2030:

1. **We will equip organisations across the planning system with the tools they need to help deliver Clean Power 2030 and government's wider missions**, including the Planning Inspectorate, statutory consultees, local planning authorities, and government consenting teams. We will enable them to better flex and prioritise their resource so that they can examine mission-critical projects faster. To complement these more immediate changes, we will deliver workforce reform, enhanced training, and reformed career development packages for certain organisations involved in the planning system. We will review resourcing in key organisations to determine whether they are suitable for handling an increased number of projects in the coming years, including the Planning Inspectorate and departmental consenting teams. The Clean Power 2030 Unit will assist planners by convening early engagement between stakeholders for complex applications.

2. **We will update the National Policy Statements for Energy and Planning Policy Guidance in 2025, and we have confirmed changes to our National Planning Policy Framework** to reflect the needs of Clean Power 2030, improving policy certainty for developers and examining authorities.

3. **We will undertake an ambitious programme of legislative reform, including through the Planning and Infrastructure Bill.** Building on the reforms in the Nationally Significant Infrastructure action plan[45], we will introduce legislative changes to update the NSIP planning system in the Planning Act 2008 in England and Wales for all infrastructure projects. We will also reform the legislative framework for electricity infrastructure consenting in Scotland, where there is executive devolution but where legislation under the Electricity Act is reserved for Westminster, to deliver a streamlined and efficient framework that is fit for purpose. We will explore reforming Judicial Review processes following recommendations from Lord Banner's review.

4. **We will ensure that the protection of nature is embedded into the delivery of Clean Power 2030,** including by delivering the Marine Recovery Funds for Offshore Wind, and using development to fund nature recovery where currently both are stalled. The UK government and Scottish Government are exploring a separate Marine Recovery Fund for projects in Scotland

[45] Department for Levelling Up and Housing Communities (DLUHC) (2023), *'Nationally Significant Infrastructure: action plan for reforms to the planning process'* (viewed in December 2024)

5. **We will ensure communities directly benefit from clean energy infrastructure they host** by building upon existing approaches and encourage consistency in community benefits across technologies.

6. **The Scottish and Welsh Governments have implemented programmes of planning reform which support the delivery of clean power.** We are working closely with both the Scottish and Welsh Governments to accelerate reform further to deliver for 2030.

The challenge

The projects we need for Clean Power 2030 need to begin construction soon. Advice from the NESO indicated that there are enough projects in the pipeline for most technologies, but delivery of the pipeline would require accelerated rates of planning and consenting decisions[46]. Increased pace in the planning system is essential to support effective delivery of the connections queue and wider actions enabling Clean Power 2030. Though construction timelines for clean power technologies vary, it is clear we must act urgently to get them through the planning system, while also delivering positive outcomes for nature and communities.

- Most new transmission network and offshore wind projects will need all permissions for construction by 2026[47] if they are to be operational by 2030 with current construction timelines

- New onshore renewable and battery projects typically have shorter construction timelines, but most large-scale projects would likely still need to receive consent by around 2028[48]

- For much of the firm generation, low carbon-flexibility and unabated gas that we need to underpin a clean power system we have identified the pathways for delivery for 2030 and are working towards accelerating them, but we need to ensure the judicial and wider permitting processes work to reflect the critical importance of these projects.

Our planning reform programme for larger scale energy infrastructure will need to be tightly coordinated. Terrestrial and Marine planning regimes are either fully or executively devolved. The delivery of energy infrastructure in Great Britain is split between interacting systems that differ between nations, with varying roles for central, local, and devolved governments. Some of the planning reforms referenced in this plan relate to consenting in England (and Wales for large NSIPs) while others will affect Scotland given that elements of the legislation governing parts of the Scottish planning and consenting regime are reserved to Westminster. In addition, there are a range of actions also underway in Scotland and Wales.

NESO will be delivering the Strategic Spatial Energy Plan in 2026 to enable long-term planning of the energy system out to delivering Net Zero by 2050. We also need a long-term, holistic approach to managing growing demand for use of the seabed. The Crown Estate's Marine Delivery Routemap will provide an opportunity to positively plan

[46] NESO (2024), *'Clean Power 2030'*, (viewed in December 2024).
[47] Internal DESNZ estimate informed by stakeholder engagement.
[48] Internal DESNZ estimate informed by stakeholder engagement.

for shared outcomes across different sectors with an agreed set of design parameters that incentivise best environmental practice across the project lifecycle. This will encourage development areas to be brought forward in the right locations that avoid the most vulnerable areas of biodiversity.

For the planning and environmental reform package to facilitate Clean Power 2030, changes will need to be made that cut across many different areas, involving multiple organisations, including developers, supply chains, and investors. The different systems with different requirements and obligations across the planning landscape are complex and were not designed to deliver at the speed and volumes now required of them.

Figure 10: Nationally Signficant Infrastructure Project (NSIP) planning process flowchart

Notes: This flow chart details the process for NSIP energy projects only. Projects which are considered using TCPA follow a slightly different process.

Source: Planning Inspectorate (2024), 'Decision Making Process Guide'

It takes a long time for Nationally Significant Infrastructure Projects (NSIPs) to receive a consenting decision, with ever increasing volumes of information being dealt with at each stage, leading to delays and pressure for all parties. The timespan for Development Consent Orders is intended to be less than two years but can go well beyond this, and the documentation underpinning consents has been getting longer and in too many instances now runs to tens of thousands of pages. Increased litigation has caused delays and introduced additional risk and costs for

developers. A large number of infrastructure projects are expected in the next 3 years[49], and change is needed to meet the urgent need set out in the NESO advice for significant numbers of projects to progress to construction in the next 6-24 months.

For locally-consented energy infrastructure, decisive reform is also urgently needed to deliver clean power by 2030. In England, planning applications with local authorities under the Town and Country Planning Act can sometimes take up to 12 months to receive a decision[50], despite a four-month limit on energy infrastructure projects which require an Environmental Impact Assessment. Currently, the National Planning Policy Framework (NPPF) does not make clear that local planning authorities should consider the benefits associated with renewable energy generation, and proposals' contribution to meeting a net zero future when determining applications for these developments. The Planning Practice Guidance for renewable energy, which adds further detail to the policy contained within the NPPF, contains outdated guidance which requires updating to reflect new policies.

There are also challenges in the planning process for low carbon electricity infrastructure in Scotland, which differs from the systems in England and Wales. These challenges are delaying investment in critical infrastructure and are costly to consumers. Government has run a consultation on proposals for reforming the consenting processes in Scotland under the Electricity Act 1989 and working with the Scottish Government, timely implementation of the results of the consultation process will be essential.

We need to accelerate transformation of the system, building on the work set out in the NSIP Action Plan. In February 2023, the then government published the NSIP Action Plan which outlined five key reform areas to help make the NSIP planning system better, faster, greener, fairer and more resilient. Following on from this, changes to the NSIP system were implemented in Spring 2024 with the introduction of legislative amendments to key infrastructure planning legislation and new infrastructure planning guidance. We recognise previous reforms to the system are yet to be in full effect and will make a positive difference, like the designation of low-carbon nationally significant energy infrastructure projects as 'Critical National Priorities' through the energy National Policy Statements. However, existing reforms still do not match our ambition for Clean Power 2030, and so we must go further – using all tools at our disposal.

Our planning reform programme for energy infrastructure will need to be tightly coordinated. The delivery of energy infrastructure in Great Britain is split between interacting systems that differ between nations, with varying roles for central, local, and devolved governments. For the planning and environmental reform package to facilitate Clean Power 2030, changes will need to be made that cut across many different areas, involving multiple organisations, including developers, supply chains, and investors. The different systems with different requirements and obligations across the planning landscape are complex and were not designed to deliver at the speed and volumes now required of them.

[49] Prime Minister's Office, 10 Downing Street (2024), *'Plan for Change: Milestones for mission-led government'* (viewed in December 2024).
[50] DESNZ analysis based on the Renewable Energy Planning Database (REPD).

Taking action

We will equip examining authorities with the tools they need to help deliver Clean Power 2030 and government's wider missions

We can unblock bottlenecks by improving resource, particularly shortages of critical specialisms, which are often noted as a main cause of statutory consultees' reasons for planning application deadline extensions[51]. In 2023-24, over 60% of delayed responses to planning applications from the Environment Agency were due to resourcing constraints[52], while Natural England have said the same for over 80% of the time they need to extend a deadline for a planning application[53]. Another statutory consultee, Historic England, have seen a 39% decrease in expenditure on heritage services in Local Planning Authorities in planning policy since 2009/10[54], impacting the delivery of developments. Reform of the planning system includes a need to better employ key skills and resource across a variety of bodies, which can be managed through targeted interventions and streamlining the system. We are expecting an increase in planning applications with the Clean Power 2030 target, providing further challenges than those the planning system is already experiencing. To manage this increase:

- **We will expand cost-recovery mechanisms** across relevant regimes to ensure that all organisations key to consenting have sustainable resourcing models which can match the demand of projects in the system into the future, to help deliver Clean Power 2030 and beyond.
- **We will continue to enhance the support that the Planning Inspectorate and statutory consultees give to developers through the planning process,** particularly at the pre-application stage.
- **We will review resourcing in key organisations to determine whether they are suitable for handling an increased number of projects in the coming years.** To ensure resource is making the most impact, we will drive operational efficiency in statutory consultees, to speed up consultation and examination timelines. Alongside a review of resourcing, we will establish new performance standards for all public-sector organisations, including central government teams, the Planning Inspectorate, statutory advisors, and local planning authorities; in addition to improving guidance and support for the private sector.
- **We plan to reform planning resourcing for the longer term**, including supporting existing strategies such as working with universities and skills providers to strengthen the intake of planners required for all infrastructure building. Additionally, we will look at options for attracting and retaining key specialists, such as through reviewing entry requirements for such roles.

[51] DESNZ (2023), *'Hydrogen projects: planning barriers and solutions – research findings'* (viewed in December 2024).
[52] Environment Agency (2024), *'Environment Agency's planning consultation response timelines: 2023 to 2024'* (viewed in December 2024).
[53] Natural England (2023), *'Natural England's response times to planning consultations in England'* (viewed in December 2024).
[54] Historic England (2024), *'Proposed reforms to the National Planning Policy Framework and other changes to the planning system: Consultation Response – September 2024'* (viewed in December 2024).

- **We will boost local planning capacity** including wider programmes of support, working with partners across the planning sector to ensure that local planning authorities have the skills they need both now and in the future. The government has announced a £46 million package of investment into the planning system to support capacity and capability including the recruitment and training of graduate and apprentice planners to support the planning system as a whole.
- **We will consider enhancing the quality standards energy NSIP applications must meet in order for their applications to be accepted into the regime and publish best practice** to help prevent resource being used unnecessarily in addressing issues with low quality or incomplete applications. Projects submitted to the Planning Inspectorate should be of a high quality, following best practice and guidance. Through constructive, early engagement with statutory consultees, and timely provision of information and evidence, developers will be able to better meet the high standards expected.
- **The Clean Power 2030 Unit will convene nature, communities and industry groups on complex projects**, in order to encourage and facilitate a high standard for projects, and stress-test them prior to application to identify any problems with input from across the planning system. This could enable an expedited pre-application process and help ease the burden on a system working at capacity.

We will update our national policy vehicles to reflect the needs of Clean Power 2030

Generally, where policy, legislation and guidance leaves room for doubt, examiners and decision-takers may adopt a more cautious approach to consenting and developers will lack clarity on what is required for their application to succeed. This results in added time, process and results in delays, and may open the door for more legal challenges post-decision. To address this, for NSIP policy:

- **We will update National Policy Statements** for energy in England. The Chancellor announced a 12-month review of National Policy Statements (NPSs) in July 2024. We will update our NPSs so that the Planning Inspectorate and other organisations involved in examining projects are given the clarity they need to provide robust advice on infrastructure critical in delivering Clean Power 2030;
- **We intend to take powers through primary legislation to ensure that NPSs are updated every five years through a quicker and easier process, giving increased certainty to developers and communities.**
- **We are reintroducing onshore wind into the NSIP regime at a new threshold of 100 MW and are altering the existing threshold for solar to 100 MW.** This will ensure the planning system is efficient with appropriate routes available that are proportionate to a project's scale, impact and complexity.

For local planning policy in England:

- **We have ended the de facto ban on onshore wind development**, and have now published our consultation response confirming changes to the National Planning Policy Framework (NPPF);
- **We will update the Planning Practice Guidance in 2025 to provide clarity on the application of planning policy** for renewable and low carbon development to support the updates to NPPF in practice. This will help local councils in developing policies for renewable and low carbon energy and identifies the

planning considerations associated with a proposal for development.

We will undertake legislative reform

We must reform the planning system, so it works better for energy projects and wider infrastructure for the long term beyond 2030 too. We will need to continue delivering new clean power infrastructure at pace after 2030 to keep up with increasing electricity demand. Government recognises the need to more strategically plan its long-term infrastructure needs and it needs the planning system to be responsive to this.

- **We will bring forward a Planning and Infrastructure Bill with measures to streamline the delivery of critical infrastructure in the planning process.**

The Bill will introduce new measures to prioritise and streamline the delivery process for critical infrastructure through the planning process, including accelerating upgrades to the electricity grid and boosting renewable energy which will benefit local communities. These proposed changes will move us away from a position where vital new infrastructure is being unnecessarily delayed whilst ensuring that it is sustainable, responsible and maintains high environmental and nature standards.

Since our proposed primary legislation is not a quick-fix and will be too late for some projects that are critical for Clean Power 2030:

- **We will review secondary legislation and other legal requirements (like licences) regarding the planning process for energy infrastructure to establish relevant changes to speed up delivery of projects for Clean Power 2030.**

Legal challenges to DCOs can create significant delay to the delivery of NSIPs in England and Wales. Judicial review is a constitutionally important mechanism which allows an individual or organisation to challenge the lawfulness of a DCO decision in court. However, there is a case for reviewing the process to identify ways in which it can be streamlined to ensure it does not unduly slow down vital infrastructure development. Most legal challenges against DCO decisions are unsuccessful, but it can take many years for the courts to reach the decision, and hear further appeals in higher courts, leading to uncertainty and delays. Delays to new infrastructure can increase costs to consumers where constraint payments to operators are required.

- **We will explore reforming the judicial review process for NSIPs following Lord Banner's recent independent report**. We have published a call for evidence on judicial review reform following this report which is due to close at the end of this year. The call for evidence is seeking views on Lord Banner's recommendations and invites suggestions on other options for reform to reduce delays to infrastructure projects in England and Wales. We intend to legislate at the earliest convenience for any desired changes requiring primary legislation following the call for evidence. For example, this could include changing the rules so that claimants in each case only have one attempt to seek permission for judicial review. Any changes that we decide to make will strike the right balance between reducing delays to infrastructure projects and maintaining access to justice in line with our domestic and international legal obligations. In Scotland, the recent consultation on reforms to electricity infrastructure consenting sought views on creating a unified and streamlined system for challenging the decisions of Scottish Ministers, taken under the Electricity Act 1989, through the courts.

We will ensure that the protection of nature is embedded into the delivery of Clean Power 2030

Our existing planning system is built on solid foundational principles. Our policy and legal frameworks were originally developed to ensure the timely delivery of vital new infrastructure and other development, whilst ensuring communities hosting infrastructure are fairly treated and the natural world is protected.

We know that the status quo is not working when it comes to delivering the nature and infrastructure we need. The poor state of our natural environment means that there is often insufficient environmental headroom to allow developments to come forward without significant costly intervention. Applicants can struggle to navigate or satisfy environmental requirements and conditions on habitats, species and protected areas. A lack of clarity for industry from government and statutory consultees, a low-risk appetite from developers, and at times a reluctance from developers to engage with environmental requirements or deliver quality applications can slow down the delivery of much-needed energy infrastructure.

All this can lead to lengthy case-by-case negotiations of mitigation and compensation measures with statutory consultees, and extensions to decision deadlines. Once consent is granted, developers must often meet 'post-consent conditions' whereby construction cannot start until the conditions are met. To embed the protection of nature in energy developments, actions will include:

- **We are considering how to use development to fund nature recovery unlocking a win-win outcome for the economy and for nature** – as set out in the King's Speech, we are working with nature delivery organisations, stakeholders and the sector to consider how we can better support the delivery of housing and infrastructure whilst driving better environmental outcomes;
- **We will undertake measures to reduce pressures on protected sites including through expansion of the Protected Sites Strategies in priority areas in England.** Protected sites face several pressures inhibiting their recovery. This gives rise to development constraints when sites are in unfavourable condition, even if a new development is a small contributor to the overall problem. Reducing pressures on protected sites will help to ease some of the constraints energy developments face when addressing the environmental impacts of their projects;
- **We will publish our roadmap to bring forward Environmental Outcomes Reports** in consultation with devolved government, introducing an outcomes-based approach will provide the certainty developers need to embed environmental considerations into the earliest stages of the project. This will allow stakeholders to focus on delivering for the environment rather than guarding against the risk of legal challenge which will reduce costs and delays from unnecessary work. The roadmap will include our approach to implementation to ensure a smooth transition for stakeholders;
- **We will establish industry-funded Marine Recovery Funds** into which applicants can pay to discharge their compensation obligations, underpinned by libraries of approved strategic

compensation measures. The UK government are engaging with the Scottish Government with a view to reaching agreement on the establishment of, and the delegation of appropriate functions to operate and manage, a separate Marine Recovery Fund for projects in Scotland. The Offshore Wind Environmental Improvement Package (OWEIP) as a whole will accelerate and de-risk the consent of offshore wind projects whilst continuing to protect the marine environment;

- **We will consider options for harmonising the offshore wind environmental data and modelling used** for assessing impacts of offshore wind projects on species and habitats to provide consistency in assessments. Standardised methodologies and inputs to models and data standards could be developed allowing developers access to harmonised, coherent public data, reducing disagreements between developers and Statutory Nature Conservation Bodies (SNCBs), and helping to shorten the pre-application timelines for all future projects;
- **We will consult on reforms to the environmental permitting regime to better enable Clean Power 2030**, and ensure that environmental regulators have the powers and evidence to promptly develop the pollution standards required for the permitting of emerging clean power technologies;
- **We will explore strategic approaches to managing environmental pressures around industrial clusters which engages effectively with the planning and permitting systems. This will help to enable cluster decarbonisation within environmental constraints and address emerging issues prior to projects entering the planning system;**
- **We will launch a public engagement exercise in early 2025** to invite stakeholders to submit their ideas on **how government can best encourage nature-positive best practice into energy infrastructure planning and development**. Feedback from this exercise will allow government to better understand how we can integrate nature restoration within Clean Power 2030.

Our reform programme to deliver clean power infrastructure will keep nature at its heart. Whilst we want to accelerate infrastructure delivery, project developers must be clear that government expects them to continue delivering for communities and nature. We are not writing a blank cheque for low quality applications that fail to consider these outcomes.

We will work towards communities benefit from hosting new clean energy infrastructure

To realise our ambitions of becoming a clean energy superpower, some communities will see an increase in the amount of new energy infrastructure being built in their area. We must ensure that we bring all communities with us on this journey to Clean Power 2030. Maintaining public support is vital to the delivery of clean energy ambitions in Great Britain, and those asked to host energy infrastructure should feel tangible benefit from the role their areas play in building a low-cost electricity system[55]. Community benefits are already delivered on a voluntary basis in some sectors across Great Britain (e.g. solar and onshore wind), but this is not consistent across sectors and locations. Government wants to ensure that all communities hosting infrastructure receive high quality benefits in a consistent manner.

[55] NESO (2024), *'Clean Power 2030'* (viewed in December 2024).

We will ensure that communities directly benefit from clean energy infrastructure they host, and continue to explore how to do so. This will build on existing approaches to community benefits within the onshore wind sector, on which government intends to publish updated guidance for England in due course, and the work that Solar Energy UK have been taking forward to develop industry-led guidance for solar energy projects. In the interim, the government plans to publish new guidance on voluntary community funds so that communities benefit in a fairer, more ambitious and consistent way from new onshore electricity transmission infrastructure.

Planning reform in Scotland

Scotland is taking further action to improve the resourcing of the planning system. The Scottish Government's consultation on Investing in Planning set out of proposals aimed at increasing the capacity of the planning system in Scotland – the Scottish Government is now progressing a range of actions following the consultation. which set out a range of proposals aimed at increasing the capacity of the planning system in Scotland. Following the consultation we are now progressing a range of actions

The UK and the Scottish Government share the view that the consenting regime for larger scale electricity infrastructure in Scotland is not fit for purpose. Delays are caused by inefficient and outdated features of the existing legislative framework. The UK government, with the support of the Scottish Government, agree that the most pragmatic route to speeding up the deployment of low carbon electricity infrastructure is to reform the existing legislative framework. To address this:

We will seek powers to reform the current legislative framework for electricity infrastructure consenting in Scotland, with changes deployed by the Scottish Government. The Electricity Act 1989 could, for example, be amended to modernise and remove inefficiencies, whilst giving communities and statutory consultees meaningful opportunities to influence applications for consents.

The UK and Scottish Governments have worked together closely on reforms to electricity infrastructure consenting in Scotland referenced above. The recent consultation gathered evidence on a package of proposals which would help to streamline the existing outdated system in Scotland, which will encourage investment and acceleration towards our 2030 ambitions.

Additionally, with specific regard to consenting for offshore electricity infrastructure, the Scottish Government has been actively engaged with the UK government in the development and implementation of the reforms being delivered via the Offshore Wind Environmental Improvement Package under the Energy Act 2023, which will enable more efficient regulation of adverse environmental impacts arising from Scottish offshore wind developments. The Scottish Government also continues to pursue a continuous improvement approach to Scottish consenting processes through its Consenting Streamlining Unit, implementing more streamlined procedures where beneficial.

Planning reform in Wales

The Welsh Government has recently taken action to accelerate their infrastructure planning decisions. Immediate action has including enabling Planning and Environmental Decisions Wales (PEDW) to take decision on energy projects up to 50 MW, and prioritising applications for Developments of National Significance which have the greatest public benefits.

Longer term, the Infrastructure (Wales) Act sets out the new consenting process for significant infrastructure projects in Wales both on land and in the territorial sea[56]. This replaces multiple existing consenting processes with a single process. It will provide confidence and certainty in the decision-making process which is underpinned by clear policy that strikes the right balance between the need for infrastructure projects to help combat climate change whilst respecting our natural environment.

They have produced a consultation paper on development of a resilient and high performing planning service, including proposals for funding, performance monitoring, and increasing staffing skills and resilience[57].

[56] Welsh Government (2024), *'Implementing the Infrastructure (Wales) Act 2024'* (viewed in December 2024).
[57] Welsh Government (2024), *'Promoting a resilient and high performing planning service'* (viewed in December 2024).

Electricity Networks and connections

Summary

Our grid infrastructure needs strengthening. Failure to do so risks holding back our energy security, economic growth and other important infrastructure with lengthy delays. Across many walks of life, people see grid infrastructure as a massive impediment to their plans.

In truth, Great Britain's electricity network must undergo unprecedented expansion, as the economy electrifies, to deliver decarbonisation, energy affordability and energy security, and support economic growth. To connect new generation and meet future demand, around twice as much new transmission network infrastructure will be needed in Great Britain by 2030 as has been delivered in the past decade[58]. In addition to relevant cross-cutting actions on planning, supply chains, and skills we will take action to deliver the network we need at the right time:

Fundamentally reforming the connections process, working with NESO, Ofgem, TOs and DNOs to prioritise viable projects that align with the Clean Power 2030 Action Plan. Without these critical reforms, the queue will not align with our strategic needs and the projects we need will be delayed.

Regulatory reform to ensure that the Clean Power 2030 target is better integrated into planning and investment decision making, enabling investment in networks ahead of need. This includes working with Ofgem to explore the appropriateness of tightening the incentives and penalties to drive the acceleration of network build-out delivery.

Improving networks planning and consenting to provide the levers to accelerate the expansion and upgrades required across our transmission and distribution network to ensure energy infrastructure can support the delivery of the 2030 target.

Engaging with communities to enable them to benefit from living near new transmission network infrastructure.

[58] NESO (2024), *'Clean Power 2030'* (viewed in December 2024).

The challenge

Urgent action is required to ensure that the grid we need is in place for the connection of low-carbon generation and electrification of sectors such as transport, heating, and industry. Network build must be accelerated to address annual constraint costs, which are projected to increase without action from the already high level of around £2 billion per year in 2022[59] to around £8 billion per year[60] (or £80 per household per year) in the late 2020s[61], in a scenario where delays to network build persist. This cannot be allowed to happen.

Network constraints occur when the electricity system is unable to transmit power to electricity users because the maximum capacity of the circuit is reached. Constraint costs arise when NESO has to manage this problem by paying generators to reduce (turn-down) their electricity output in areas that are congested and switch on (turn-up) in locations closer to electricity users.

Work is required to significantly reduce the end-to-end delivery time for new transmission infrastructure. In the independent 2023 Report[62] by Nick Winser (Advisory Commissioner to the Clean Power 2030 Mission), he set out recommendations to halve timelines from 14 to 7 years, starting with strategic spatial planning of energy projects which would allow the network to be planned holistically ahead of need. Winser was clear that ambitious interventions were needed across every stage of the delivery process and government is working with delivery partners to drive the necessary change, including Ofgem, NESO and the network companies, who play a crucial role in delivery of new infrastructure on the ground.

To deliver a decarbonised power system by 2030, we will need to build on Winser's recommendations, going further and faster where necessary, to ensure the network we need is in place in time. NESO's Clean Power 2030 advice[63] confirms that all 80 transmission projects they identified as required to achieve clean power by 2030, including both upgrades to existing infrastructure and new transmission lines, are already in existing strategic network plans[64]. Of these, there are three with delivery dates post 2030, which we know need to be accelerated. Delivery of the full list of projects to such a short timeline is an unprecedented challenge. Government and the Clean Power Advisory Commission will work closely with partners to monitor delivery of individual projects and identify targeted interventions to accelerate delayed projects where necessary, including through prioritisation in the consenting process. Wherever renewables can connect to the distribution network, this should be encouraged for reasons of speed and efficiency.

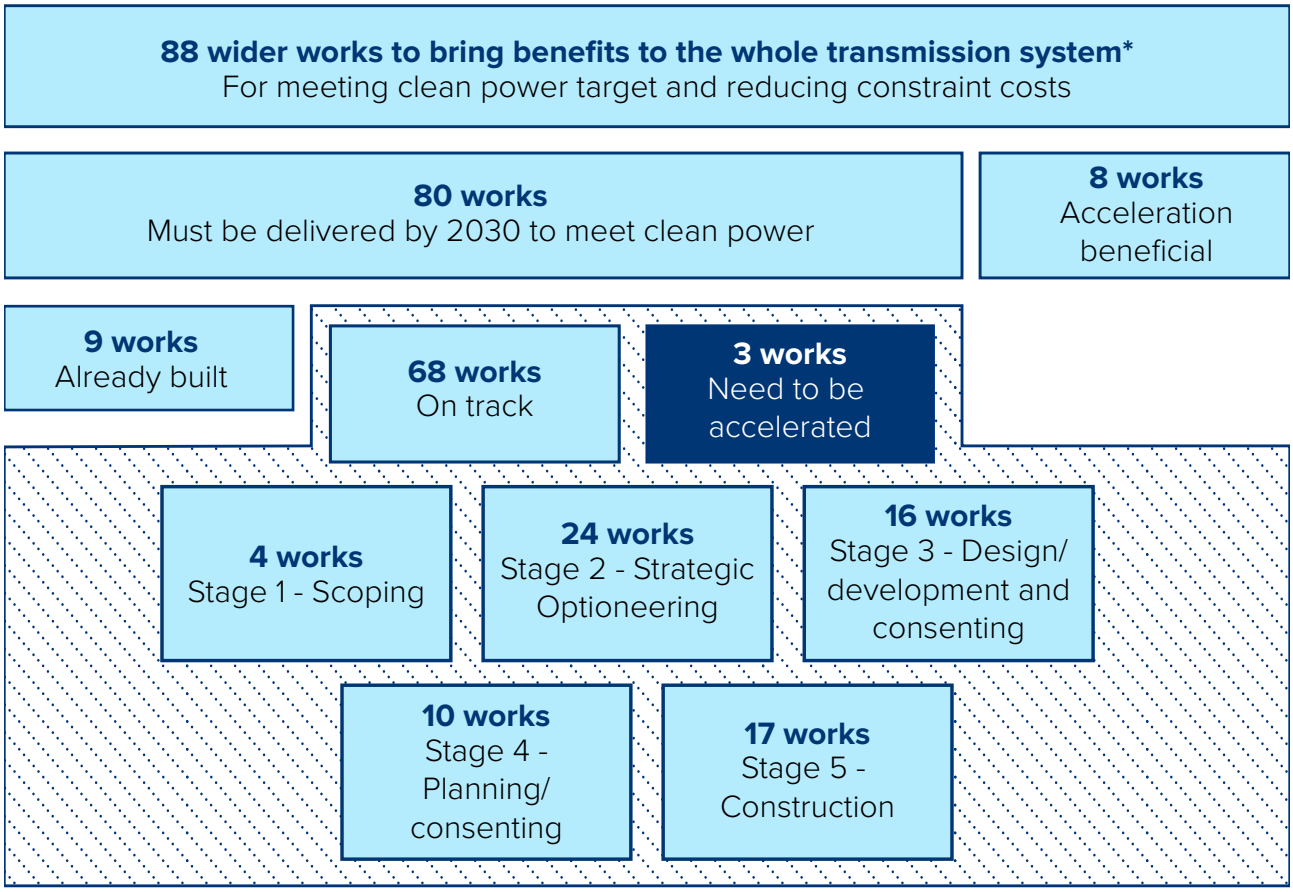
The distribution network is also in need of reform and, whilst it is less constrained than transmission level, large amounts of distribution-connected renewable

[59] National Grid ESO (2022), *'Monthly Balancing Services Summary'* (viewed in December 2024).
[60] Undiscounted, 2022/23 prices.
[61] DESNZ (2023), *'Community benefits for electricity transmission network infrastructure: government response'* (viewed in December 2024).
[62] DESNZ (2023), *'Independent report: Accelerating electricity transmission network deployment: Electricity Networks Commissioner's recommendations'* (viewed in December 2024).
[63] NESO (2024), *'Clean Power 2030'* (viewed in December 2024).
[64] NESO (2024), *'Clean Power 2030'* (viewed in December 2024).

generation and storage will need to be accelerated to achieve the 2030 target. Significant reinforcement and build out of the distribution network will also be required to support the electrification of sectors projected for the decades ahead, as well as to accommodate new demand in some locations for growing infrastructure and industrial uses, such as data centres and transport hubs.

In addition to those actions set out in this chapter, delivery of network infrastructure will rely on actions outlined elsewhere in this Action Plan, notably the interventions being developed by the Office for Clean Energy Jobs to secure a workforce with the right skills to deliver Clean Power, resourcing and reforming planning and consenting for energy infrastructure, and supply chain interventions.

Figure 11: Transmission network project maturity and delivery timeline



Source: NESO (2024), 'Clean Power 2030'

* These are wider transmission network reinforcements – they may not include all works, for example, works driven by connection enabling works, operability etc.

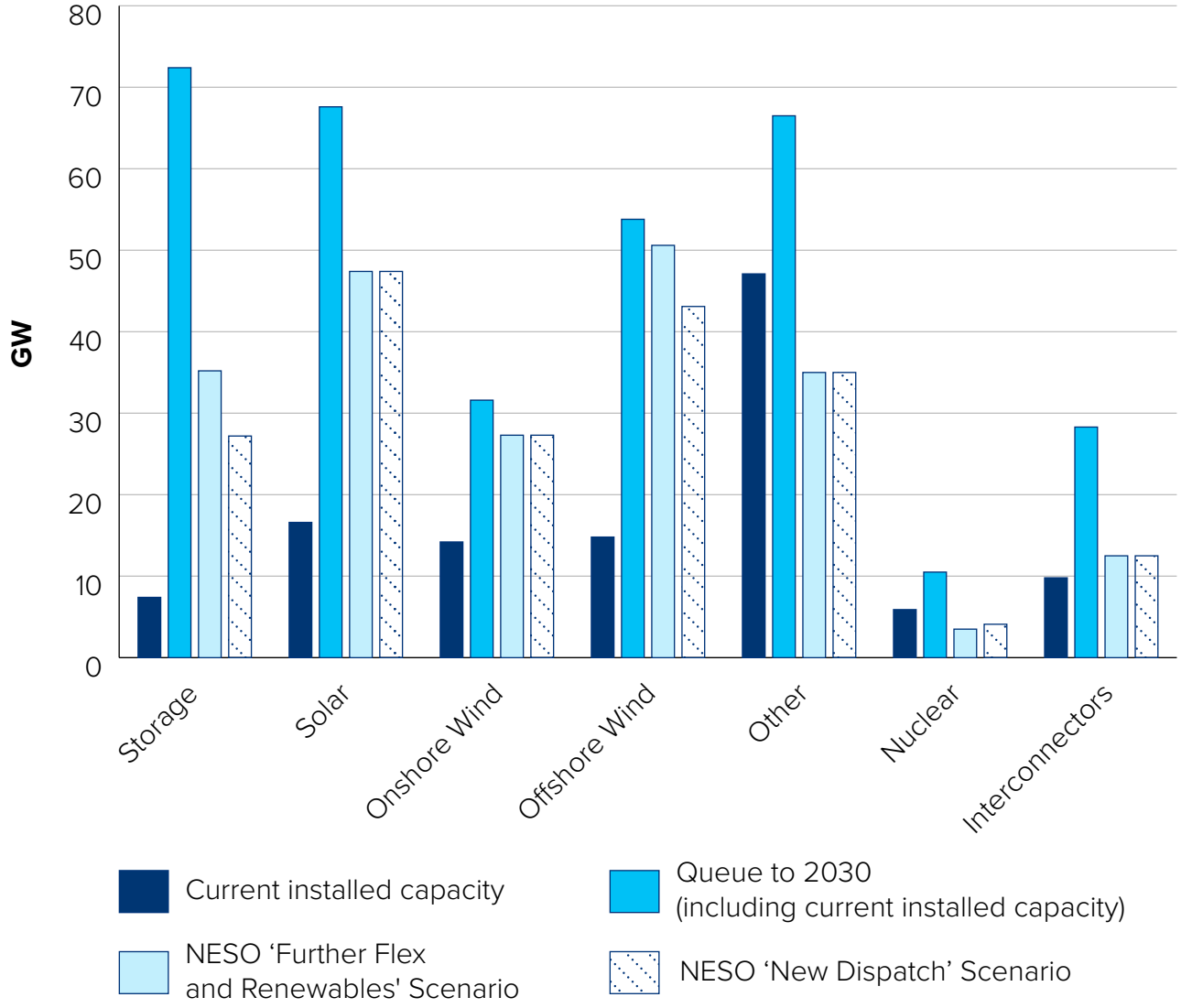
Taking action

Connections reform

Over the last five years, the grid connection queue has grown tenfold, and now contains an equivalent capacity of 739 GW[65]. Many of these projects are speculative or do not have the necessary funding or planning permission to progress, causing unacceptable connection delays for viable projects behind them. Fundamental reform of the connections process is critical and urgent – without it, the projects we need for Clean Power will not be able to connect on time.

We also need to accelerate towards net zero and ensure timely connections for demand including an increasing volume of low carbon technologies such as EV charge points and heat pumps, as we electrify the wider economy.

Figure 12: Current connections queue compared to current installed capacity and NESO 'Further Flex and Renewables' and 'New Dispatch' scenarios (GW)



Note: Other includes biomass, unabated gas, coal, oil and other fuels for current installed capacity. 2030 capacity figures refer to unabated gas only.

Source: Table 1 & DESNZ (2024), 'DUKES' & NESO (2024), 'Clean Power 2030'

[65] Including Demand. Correct as of end-October 2024. Connections data is published monthly by the Connections Delivery Board.

The queue is currently managed on a 'first come, first served' basis which does not consider the required 'mix' of energy projects (e.g. solar, wind) or where this mix is best located. As such, we do not have the levers to ensure an optimised future energy system across all regions of Britain that responds to local energy planning as well as national needs.

To meet our 2030 ambition, we must act now to rationalise the queue and accelerate the projects that are critical to our goal. This means going beyond previous plans to remove slow-moving or stalled projects from the queue and prioritise based on readiness alone. These actions are still needed but to achieve Clean Power 2030, technological and locational factors need to be considered in the connection process so the right projects can connect in the right place at the right time.[66] This Action Plan can now provide the basis to do this.

By removing unviable projects, re-ordering the queue, and accelerating connection timescales for the projects we need most, connection reform is expected to unlock £billions of much-needed investment in renewable generation[67] and electrification of the wider economy – investment that has been held back for too long.

A strategically aligned connections process will also bring inherent efficiencies in network design, planning, and build, and provide long-term confidence not only for investors in renewable energy, but also for all demand sectors that will depend on clean energy for electrification (from data centres – including those vital for supporting AI (Artificial Intelligence) – and gigafactories, to EVs and heat pumps), as well as related supply chains and the jobs these will create.

Government, Ofgem, NESO and network companies have been working at pace[68] to strengthen existing 'first ready, first connected' proposals and NESO has now consulted on[69] the detailed methodologies that will enable it to filter the queue and prioritise connections using strategic plans, starting with capacity ranges for generation technologies required for clean power by 2030 that are laid out in this Action Plan. Government will:

- Work with NESO and Ofgem to **change the grid connections process** to operationalise the Action Plan, by providing a framework through which NESO can work with Transmission and Distribution Operators to prioritise aligned projects, resulting in updated offers being issued before the end of 2025. Further detail on this is set out in the connections reform annex of this publication. We will introduce legislation, when parliamentary time allows, to ensure connection reform aligns with strategic energy and network plans and supports delivery of clean power by 2030.
- Subject to Ofgem's approval, additional flexibilities will be included in the reformed connection process to manage project attrition and over- or under-supply. For example, projects that go beyond the 2030 pathway for a technology but are aligned to the relevant 2035 pathway will still be eligible to connect before 2030 where there is spare capacity, after all 2030 pathway projects have been assessed. NESO will also be able to make substitutions of the same technology between zones to manage over- and under-supply, where this does not cause material network constraints.

[66] See the connections reform annex for further detail on regional breakdowns of technology capacities.
[67] DESNZ & Ofgem (2023), *'Connections action plan: speeding up connections to the electricity network across Great Britain'* (viewed in December 2024)
[68] DESNZ & Ofgem (2024), *'Open letter from DESNZ and Ofgem: Aligning grid connections with strategic plans'* (viewed in December 2024).
[69] NESO (2024), *'Connections reform consultation'* (viewed in December 2024).

To avoid impacting projects whose development is already well advanced, NESO has proposed that any project that has been awarded a Contract for Difference or Capacity Market contract, an Interconnector or Offshore Hybrid Asset Cap and Floor agreement, Merchant Interconnector approval, or has secured planning permission as a Nationally Significant Infrastructure Project or via relevant Town and Country Planning Acts (including through devolved governments' planning regimes), will be included in the new reformed connections queue provided they have also met the Gate 2 Readiness Criteria.[70] Government will also use the publication of the SSEP in 2026 to examine the mix of technologies and consider whether capacity reserved for undersupplied technologies should be released for other technologies.

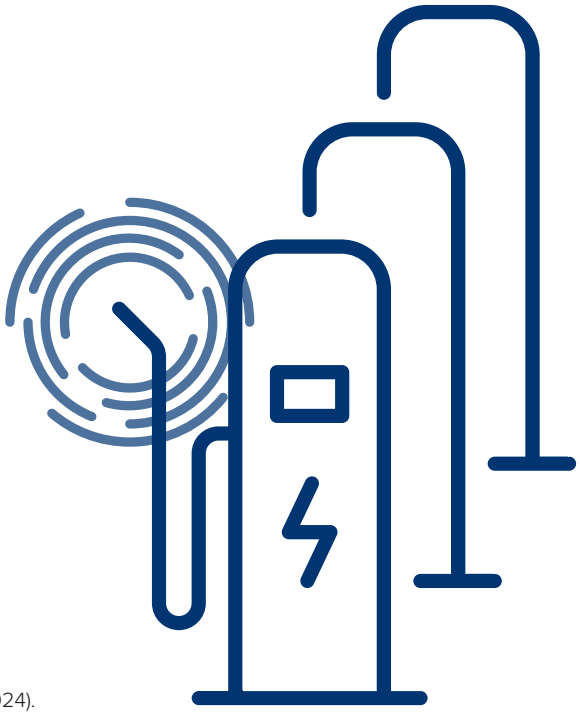
All parties involved must work at pace to secure swift and positive resolution of the reform process and explore all opportunities for faster implementation so that customers can received updated connection offers as soon as possible in 2025. In line with updating connection offers, the Transmission Owners will review and where necessary revise enabling and local works to comply with the requirements of the Security and Quality of Supply Standard. NESO also plays a role in ensuring overall compliance of the network with these standards.

Regulatory reform

Through its Accelerated Strategic Transmission Investment (ASTI) framework, Ofgem has prioritised the timely delivery of 26 large-scale strategically important transmission projects for delivery ahead of, or by, 2030. Of these, NESO have indicated that 21 need to be delivered by 2030 to deliver the Clean Power Plan. Delivery incentives apply to all 26 ASTI projects and Ofgem is building on this approach in future price controls for networks, which will be adaptive to efficiently fund additional build requirements. Timely delivery of these key projects remains very challenging and delivery incentives may need to be stronger to encourage ambition by the Transmission Owners.

To address these challenges, government will:

- Amend the Strategy and Policy Statement (which sets out government's strategic priorities that Ofgem must have regard to) to **ensure 2030 clean power and broader decarbonisation goals are sufficiently weighted in decision making** to approve strategic investments by network companies at an earlier stage.
- Work with Ofgem to explore the appropriateness of **tightening incentives and penalties for Transmission Owners and Distribution Network Operators** for delivery of strategically important network infrastructure. We will also work with Ofgem to ensure all incentives and penalties are robustly enforced.



[70] NESO (2024), *'Open letter on connections reform'* (viewed in December 2024).

Networks planning, land rights and consenting

Accelerating transmission and distribution network build required for 2030 is heavily dependent on the capacity of the planning system and wider reforms to planning and environmental requirements for all new energy infrastructure. This includes better resourcing of the planning system, reforms to consenting for energy projects in Scotland, and prioritisation of electricity networks projects in the consenting processes in England and Wales. Further details on these measures can be found in the Planning and Consenting for New Energy Infrastructure chapter.

At the distribution network level, current land rights processes in England and Wales can take between 2 to 4 years, which can lead to unnecessary delays[71]. A call for evidence undertaken by the previous government found that both network operators and landowners believe reform to these processes are necessary[72]. To address this, government will consult and engage in 2025 on proposals including:

- **Expanding planning consent exemptions** to include low voltage connections and upgrades, including upgrading single phase to three phase overhead lines (with voltage remaining the same) by amending the Section 37 regulations as they apply in England and Wales.
- **Opportunities to provide further flexibilities on the consenting of electricity substations.**

The National Policy Statement for Electricity Networks Infrastructure (NPS-EN5) sets out the government's position on undergrounding, which is that there is a starting presumption for overhead lines for large network projects. The exception to this is in nationally designated landscapes, where undergrounding is the starting presumption. This position takes into account factors including cost and environmental impacts, and the government's view is that this sets an appropriate balance between overhead lines and undergrounding.

Community engagement

To bring communities with us, we will need to better engage and provide assurance to communities and ensure they benefit from living near new onshore energy infrastructure. This government believes that it is a vital principle that communities that host clean energy infrastructure should benefit from it.

To recognise the vital role of communities living near new onshore transmission network infrastructure, government will deliver a strong package of community benefits. We will:

- **Publish voluntary guidance** to increase the quantum and consistency of Community Funds for transmission networks. This guidance will detail the recommended level of benefit, scope, eligibility, delivery costs, and the role of communities and developers.

To improve understanding of the need for new transmission infrastructure and better set the context for discussions with communities on new projects, the government will:

- Support the launch of a **public communications campaign** developed by industry with government support, to encourage public awareness on the importance of networks infrastructure in supporting net zero. This will be launched in early 2025.

[71] Energy Networks Association (ENA) (2023), *'Common sense plan for planning'* (viewed in December 2024).
[72] DESNZ (2024), *'Land rights and consents for electricity network infrastructure: summary of responses'* (viewed in December 2024).

These actions, alongside ongoing work of the government and our delivery partners, including Ofgem, NESO, and the Transmission Owners, will further accelerate networks projects that are critical to achieve 2030 Clean Power and reduce constraints on the network. They will ensure that communities benefit from hosting network infrastructure, reform the grid connections process to ensure timely connection for generation that is ready and is required for Clean Power 2030, and ensure that the network is ready for increasing electricity demand and continued development of low carbon generation post-2030.

Great British Energy

Setting up Great British Energy is one of government's first steps for change, putting the UK on the path to become a clean energy superpower. Great British Energy will be 100% owned by the British people, for the British people.

Our new publicly-owned energy company is designed to drive clean energy deployment to boost energy independence, create jobs, and ensure UK taxpayers, billpayers and communities reap the benefits of clean, home-grown energy. Great British Energy's project development and local power functions will help support the Clean Power 2030 mission, including through the development of up to 8 GW of local and community energy projects. We will continue to see its impact after 2030, ensuring we can meet future demand as we further decarbonise the economy out to 2050.

Great British Energy will benefit all four nations, and we are working hard to ensure its functions can complement the green energy initiatives across Scotland, Wales and Northern Ireland, creating jobs and building supply chains across the UK, while respecting the devolution settlements. Achieving our shared net zero targets, having greater control over our own energy resources, and increasing our energy independence are challenges for the whole of the UK, and this is an excellent opportunity to learn from each other's expertise and experience.

We are making rapid progress in establishing Great British Energy. In July, we published Great British Energy's Founding Statement, which set out its five functions: project investment and ownership; project development; supply chains; the Local Power Plan; and Great British Nuclear. We also announced Juergen Maier as the start-up Chair, alongside GBE's first major partnership with The Crown Estate. Since then, Great British Energy has announced its Aberdeen headquarters and made key policy decisions, including plans to collaborate with the National Wealth Fund to accelerate investments. And finally, we have secured £125 million in funding for 2025/26 so that GBE can start its important work to drive forward clean energy deployment.

This is just the start. Great British Energy will be capitalised with £8.3 billion over the current Parliament. Through its five functions, the publicly-owned company will help to create a better investment offer for privately-owned energy companies and international investors who will continue to play a significant role in our transition to an affordable, decarbonised power sector.

Renewable and nuclear project delivery

Summary

Electricity generated by renewables and nuclear power will be the backbone of a clean electricity system by 2030. Actions set out in other chapters, to lower barriers to planning and environmental consent, electricity network connection, and access to necessary supply chains and workforce will go a long way to increasing deployment of renewable technologies. However, even with success in these areas, there are outstanding and specific barriers that we face to deploy the renewables needed for a clean power system in 2030. There are also hurdles facing our nuclear fleet and the scaling up of emerging renewable technologies.

To lower and remove these, we will:

Improve the way Contracts for Difference are allocated, particularly for Allocation Round 7 (AR7), to support clean power delivery and ensure it can procure the capacities needed to hit the target.

Coordinate the interaction between wind turbines and civil aviation and defence infrastructure, working to find mitigation solutions and unlock deployment of planned offshore and onshore wind projects.

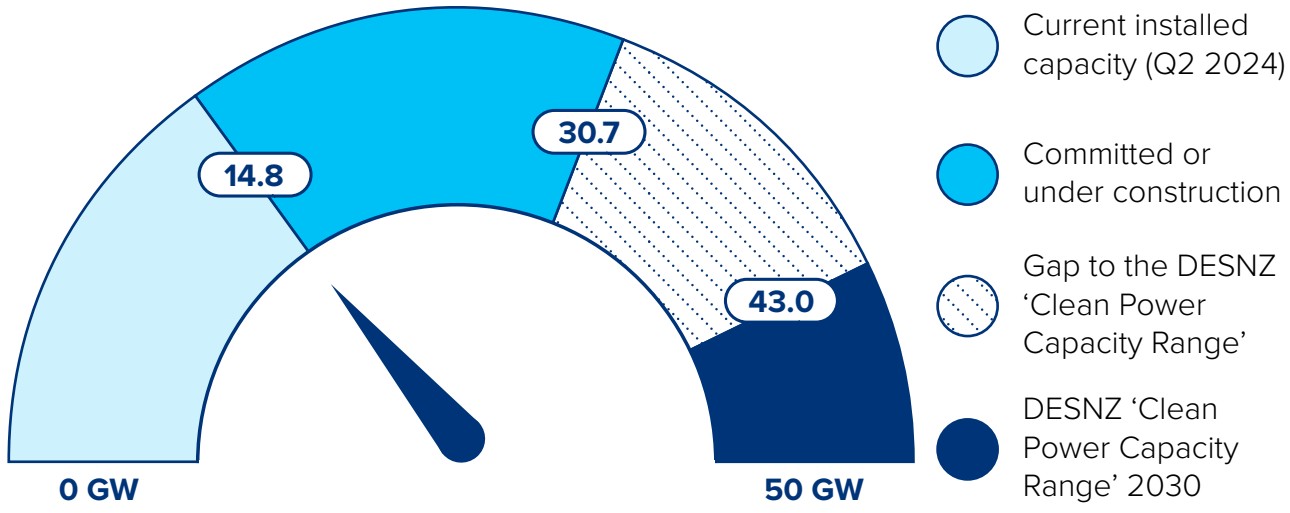
Leverage Great British Energy and deploy further policy measures to increase the rollout of local and community generation, including for homes, businesses, public buildings and land, and shared spaces.

Manage assets reaching the end of existing government support terms to minimise any capacity that may be lost before 2030, including through supporting repowering through the Contracts for Difference scheme.

Work with EDF to support the delivery of Hinkley Point C and support the development and technology readiness of emerging clean technologies that will play an important role beyond 2030.

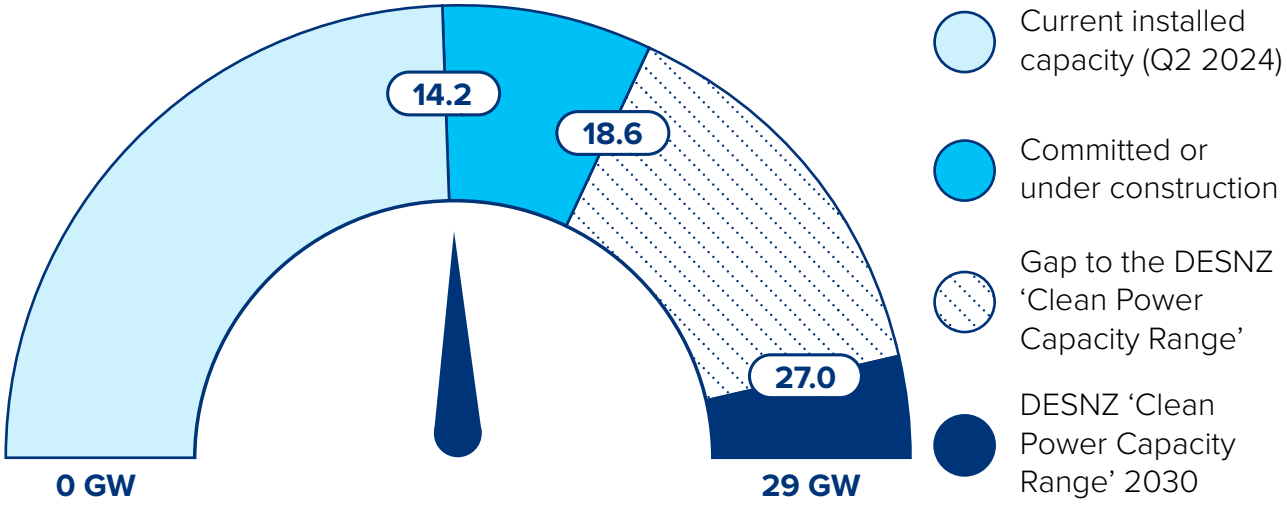
Offshore Wind

Current installed capacity compared to the DESNZ 'Clean Power Capacity Range' in 2030 (GW)



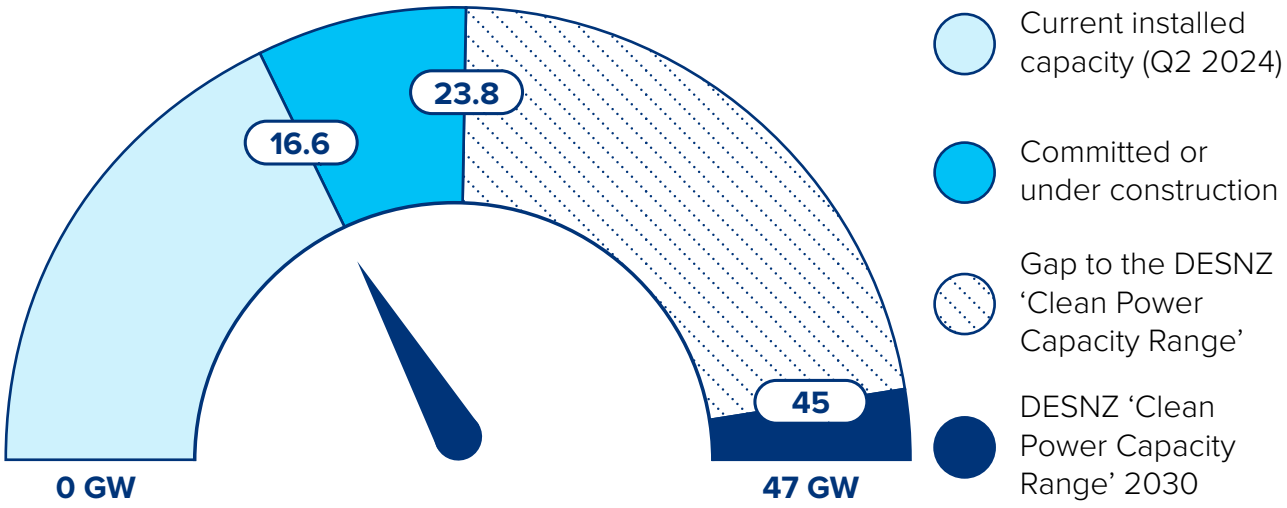
Onshore Wind

Current installed capacity compared to the DESNZ 'Clean Power Capacity Range' in 2030 (GW)



Solar

Current installed capacity compared to the DESNZ 'Clean Power Capacity Range' in 2030 (GW)



Source(s): Table 1, Low Carbon Contracts Company (LCCC) (2024), '*CfD register*' (viewed in November 2024).

Notes: Committed / under construction is defined as projects that have secured a Contract for Difference (CfD) but not yet become fully operational. For onshore wind and solar PV, 'merchant' (non-CfD) capacity that has not yet deployed has not been counted. Any pre-2030 asset retirements are not considered in these estimates.

The challenge

Renewable technologies will form the foundation of our clean power system, and we need to see very significant deployment to make this a reality. Meeting the renewable capacities set out in the DESNZ 'Clean Power Capacity Range' is achievable, but will require deployment at a sharply accelerated scale and pace. This can only be delivered by unblocking delivery challenges throughout the development lifecycle.

Accelerating delivery is exceptionally critical for **offshore wind**, where lead times for projects are often more than a decade[73]. This means that all that can be deployed by 2030 has either already been consented or is in the development and consenting process. Procurement and final investment decisions of these projects will need to be in place over the next 1-3 years.

There is greater potential to bring new **onshore wind** and **solar** projects forward and deliver additional capacity beyond what is already planned by 2030, due to shorter lead times[74]. But again, many 2030 projects are likely to already be in various stages of development, and final investment decisions on these projects will still need to be made well before our 2030 target.

Actions in this chapter, alongside cross-cutting enablers set out in other chapters, will support the delivery of renewable generation projects by de-risking the existing pipeline, accelerating new projects through the pipeline, and maximising the potential of existing capacity as assets approach end-of-life.

Nuclear power will also play a key role in achieving Clean Power 2030 and beyond by providing low-carbon, baseload generation on the system.

Taking action

Improving the way that Contracts for Difference are allocated to support 2030

The Contracts for Difference (CfD) scheme is the government's flagship policy for incentivising new low carbon electricity generating projects in Great Britain. The CfD and its predecessor investment contracts have seen around 9 GW of renewables start generating under them already, with a further 26 GW contracted to become operational by 2030[75].

Though the CfD has delivered substantial volumes of renewable capacity over the last decade, AR5 was a round that failed to deliver any offshore wind, which was a massive setback for industry and meant consumers were left more exposed to fossil fuel markets. We need consistency of success and scaling up to protect customers and meet Clean Power 2030. There is currently around 31 GW of either constructed or contracted offshore wind capacity. This will need to rise to 43-50 GW in 2030. The government will therefore seek to secure at least 12 GW across the next two to three allocation rounds – AR7, AR8 and, depending on the speed at which projects deploy, AR9.

This government has shown its ability to get the offshore wind sector back on its feet. While AR5 secured 0 GW of offshore wind, AR6 supported over 5 GW, at a price that was cheaper to build and operate than new fossil fuels. The government will ensure it secures the right volumes of offshore wind at a competitive price.

It is also the case that industry has long been calling for CfD reform to remove some of the uncertainty and give greater line of sight to support industrial strategy. That is why the government is developing

[73] DESNZ (2023), '*Seizing Our Opportunities: Independent Report of the Offshore Wind Champion*' (viewed in November 2024).
[74] DESNZ (2023), '*Electricity generation costs 2023*' (viewed in December 2024).
[75] LCCC (2024), '*CfD Register*' (viewed in December 2024).

targeted reforms to the CfD mechanism to ensure it is able to support the volume of new capacity – in particular, fixed-bottom offshore wind – needed to deliver the renewable contribution to the Clean Power 2030 target whilst continuing to minimise the costs of doing so to consumers. Subject to further assessment, including of the merits, feasibility and any further consultation where relevant, for AR7, the government is currently minded to implement:

- **A relaxation of CfD eligibility criteria for fixed-bottom offshore wind projects** to permit projects that have not yet obtained full planning consents to participate in near-term allocation rounds. This would award CfDs at an earlier stage in the offshore wind development cycle compared to the current model. Coupled with wider reforms, this could improve competition and enable earlier supply chain engagement.
- **Changes to what information the Secretary of State uses to inform the final budget for fixed-bottom offshore wind**, to avoid a repeat of AR5 and cost effectively maximise the volume of capacity that could be contracted from each round. This includes providing greater visibility over sealed bid information for the Secretary of State ahead of finalising the budget, so that there can be more certainty on how much capacity a given CfD budget will procure.
- **An auction schedule**, including capacity ambitions for upcoming allocation rounds, to improve transparency and predictability in the timing and scale of ambition for the CfD.
- **A review of auction parameters**, including our approach to Reference Prices (estimates of the average GB market price for electricity) used to estimate the budgetary impact of projects bidding into allocation rounds. The government recognises industry concerns and feedback about Reference Prices and the implications for CfD budgets and is seeking to ensure these concerns are balanced with our strong ambitions for the power sector for 2030 and beyond.

Alongside increased certainty around the auction and the potential capacity it can secure, **the government is also considering changes to CfD contract terms that would give longer market certainty once contracts are awarded,** including consideration of the merits of increasing the current 15-year CfD term to reduce overall project costs. The department intends to consult on this in early 2025, and to move ahead, would need evidence that this was in the interests of consumers.

Given the level of investment required, the government recognises the need to ensure that reforms provide stability and confidence to the sector, including the supply chain, and are delivered in a timely way. The government will consult on reforms in early 2025 ahead of the next allocation round, with a view to implementing any changes in time for Allocation Round 7 to open in summer 2025.

In addition to these proposals, there are wider measures that contribute further to ensuring the CfD mechanism is fit for purpose, including the Clean Industry Bonus (see the ‘Supply chains and workforce’ chapter) and reforms to the network charging regime in time for future CfD allocation rounds (see the ‘Reforms to electricity markets’ chapter).

Coordinating the interaction between wind turbines and civil aviation and defence infrastructure

Wind turbine generation must be done in a way that does not interfere with aviation and defence surveillance systems. At present, requirements are placed on proposed onshore and offshore wind projects that are impacting upwards of 20 GW[76] of capacity. The identification and implementation of interim and enduring solutions to this long-standing problem is therefore critical for Clean Power 2030.

The government has been working with the Offshore Wind Industry Council via a Joint Taskforce to drive collaborative agreements, seeking to find solution(s) so that offshore wind and military radar infrastructure can coexist now and in the future. The Onshore Wind Industry Taskforce has established its working group on aviation and defence to review the same issues.

Military radar

The Ministry of Defence (MoD) has launched Programme Njord, which will work with colleagues from DESNZ, The Crown Estate, Crown Estate Scotland, the devolved governments and the Offshore Wind Industry Council to identify, procure and implement a mitigation to resolve this problem for military radar.

The full costs of the long-term radar mitigation solutions identified by Programme Njord will be funded via an alternative route, delivered by government, and the funding requirement is therefore removed from **offshore wind** developers.

For **onshore wind** development which impacts military aviation, DESNZ and MoD are working at pace to seek an acceptable mitigation.

Civil radar

- DESNZ and the Department for Transport are working with the Civil Aviation Authority and the aviation industry to **agree a transparent and fair process to resolving objections**.
- The Onshore Wind Industry Taskforce is exploring the best specific approach, and will set out further detail to mitigate civil radar objections in the upcoming Taskforce Policy Statement.

Eskdalemuir

The Eskdalemuir Seismic Array is a facility in southern Scotland monitoring global nuclear activity. Wind turbines produce seismic ground vibrations which can compromise the Array. To safeguard the Array, MoD manages a finite seismic noise capacity to prevent compromising the detection capabilities of the Array. Scottish Government, MoD and DESNZ are collaborating to implement an updated approach to managing onshore developments around the Array.

- **MoD are consulting on their approach to safeguarding the Array, and following further work being undertaken by MoD the Scottish Government will consult on its development management guidance for new onshore wind projects in the Eskdalemuir consultation zone**. This will include a proposal on how onshore wind can be maximised within the array's consultation zone.
- The Onshore Wind Industry Taskforce will continue to examine these issues and will report by Spring 2025, covering a range of issues from supply chains and skills, to aviation and defence.

[76] Internal estimate based on stakeholder engagement.

Great British Energy Project Development

Developers are facing high risks, rising costs, and lengthy delays to energy projects developed in the UK, slowing down our rate of deployment. Alongside process change, the UK needs significant delivery acceleration in order to meet Clean Power 2030. GBE will accelerate the delivery of onshore and offshore clean energy projects by leading or co-leading (alongside public and private sector partners) projects through the pre-development phase and, in some cases, construction and operation – getting shovels into the ground quicker and improving UK energy security through publicly-owned energy projects.

- On private land, **GBE will align with NESO's publications and the government's response to identify locations for new generation projects** where additional capacity is needed to support the UK's spatial and wider energy system needs. GBE will work in partnership with the private sector to deliver these opportunities and provide a service that is additional to the market, maximising geographical opportunities and speeding up deployment of clean energy.
- **GBE will also undertake development on public land**, unlocking additional scope for generation capacity on government-owned estates to support decarbonisation, including in partnership with the private sector. GBE will seek to work with government to access the land and actively partner with government landowners who will host generation assets and provide power directly to public buildings, in addition to connecting into the grid.

Developing on both public and private land will support large-scale generation capacity in key strategic areas of the UK, improving system efficiency and accelerating the overall rate of deployment.

Unlocking local and community energy

Much of the generation capacity that will be deployed by 2030 is likely to come from large-scale, commercial energy infrastructure. However, local and community renewable energy will also play a vital role in delivering our ambitions, contributing to the capacity mix on an aggregate basis, delivering significant local benefits and reducing network system losses by bringing generation supply closer to electricity demand. Local and community power generation can contribute significantly to the prosperity of local places, driving down electricity bills, encouraging people to engage with the green economy, providing energy resilience, and promoting skilled jobs.

- That is why one of GBE's five functions will **provide support to deliver the Local Power Plan, putting local authorities and communities at the heart of restructuring our energy economy**. GBE will partner with, and provide funding and support to Local Authorities, Mayoral Combined Authorities, Community Energy Groups and others, as well as working with and through the devolved governments, to roll out local and community energy projects (mainly onshore wind and solar) to develop up to 8 GW of clean power in England, Scotland, Wales and Northern Ireland in support of the Clean Power 2030 Mission.

Alongside the work of GBE, government is also taking specific actions to remove barriers to, and further the deployment of, local energy. These will support deployment across local settings:

In homes and local businesses:

There is great potential for rooftop solar installation across the UK's warehouse and industrial sectors. Research commissioned by UK Warehousing Association (UKWA) indicates that the UK's 20% largest warehouses alone can provide 75 million square metres of roof space, and all warehousing roof space has the potential to support up to 15 GW of rooftop solar capacity[77].

- The Solar Taskforce has examined government and industry actions that can unlock this potential through its rooftop subgroup and will publish the Solar Roadmap in Spring 2025.

New standards will be introduced next year which will amend the energy efficiency standards in the Building Regulations in England. This will ensure all new homes and buildings in England are zero-carbon ready, meaning they will become zero-carbon when the electricity grid decarbonises without the need for any retrofit work. The Future Homes and Buildings Standards consultation was published in December 2023 and closed in March 2024. It set out detailed technical proposals for what future standards could entail, including proposals relating to solar panels.

- **We are reviewing proposals and feedback from the consultation and will publish the government response in due course.**

As part of the government's Warm Homes Plan, we are considering the role that finance may play in supporting homeowners with the upfront costs of energy efficiency improvements, solar panels, and installing low carbon heating.

[77] UK Warehousing Association (UKWA) / Delta Energy & Environment (2022), '*Investment case for rooftop solar power in warehousing*' (viewed in December 2024).

- Solar can be a cost-effective way to lower energy bills for fuel poor households, especially when paired with the adoption of a heat pumps, and **is an eligible measure in existing programmes like the Warm Homes Local Grant and Warm Homes Social Housing Fund. We will provide further details on how else solar could be supported in the Warm Homes Plan after the second phase of the Spending Review.**

In shared spaces:

Outdoor carparks provide potential to deploy solar canopies providing clean electricity, potential for electric vehicle charging and shelter for cars. Following the implementation of a new permitted development right to allow for the installation of solar canopies in non-domestic off-street carparks in England, it is now easier and quicker to deploy this technology.

- **The government will assess the potential to drive the construction of solar canopies on outdoor carparks over a certain size through a call for evidence next year.**

Finally, the National Wealth Fund's local authority advisory and lending function has a £4 billion capitalisation. It offers: commercial and financial advisory services to help local authorities undertake ambitious projects with confidence; and, lending on flexible terms at a market leading rate to local authorities who are developing projects, including in the clean energy sector.

Managing assets reaching the end of existing support

The UK-wide Renewables Obligation (RO) scheme was introduced in 2002 for GB (2005 for Northern Ireland) and it currently supports around 30% of the UK's electricity supply[78]. It is made up of three separate but complementary obligations covering England and Wales, and Scotland and Northern Ireland, and it closed to most new entrants in 2017. The Scottish Government runs the Renewables Obligation Scotland Scheme and we are working with them as we look forward to the next stages of the RO.

From 2027 onwards a large volume of renewable assets will stop receiving RO support. In total, across the GB RO schemes, around 1,000 active RO generators at approximately 9 GW of capacity will be reaching the end of subsidy by December 2030[79]. If these assets retire early, the renewable deployment required to achieve Clean Power 2030 targets and CB6 would have to increase to replace this lost renewable generation.

- We have surveyed existing RO generators to gather site-specific evidence on future plans and **are conducting further analysis to inform possible policy options to manage this risk**.
- We have already made a decision to **enable access to the CfD for repowered onshore wind from Allocation Round 7**[80] to ensure there is a route to continued generation for projects that require significant capital investment to continue operations.
- We are also implementing wider measures that will support the repowering and life extension of renewable assets, including through planning policy and through Ofgem's work on Offshore Transmission Owner (OFTO) asset life extensions.

[78] Ofgem (2024), '*Renewables Obligation (RO) Annual Report 2022-23 - (Scheme Year 21)*' (viewed in December 2024).
[79] Ofgem (2024), '*The Renewables and CHP Register*' (viewed in December 2024).
[80] DESNZ (2024), '*Consultation outcome: Proposed amendments to Contracts for Difference for Allocation Round 7 and future rounds*' (viewed in December 2024).

Biomass: existing low-carbon firm & flexible generation

Sustainably sourced biomass can be used as a low carbon fuel for renewable electricity generation[81] and so could play an important role in Clean Power 2030 by providing flexible or firm generation. Last year, biogenic sources of electricity, including conventional biomass, anaerobic digestion and biogenic energy from waste provided nearly 34TWh (equivalent to 25% of all UK renewable electricity and 12% of overall electricity generation)[82].

Support arrangements for a variety of large and small-scale biomass generators (including biogas technologies) conclude by 2030, or earlier. The previous government consulted on future support for large-scale biomass[83]. The current government is considering whether there is a strong value-for-money case to provide future support for these generators. Any future support would need to have greater protection for consumers and would be subject to robust sustainability criteria. No decisions have yet been taken; however, we plan to respond to the consultation shortly.

Large scale biomass plants also have the potential to transition to power BECCS. This carbon capture technology can combine the conversion of sustainable biomass, biogas and biogenic wastes into electricity while capturing a high percentage of the CO_2 emissions contained in that biomass in long-term storage in geological sequestration. Large scale power BECCS has the potential to support low carbon electricity and deliver negative emissions, helping to balance residual emissions from hard-to-abate sectors.

Nuclear and emerging technologies

Nuclear

Nuclear will play a key role in achieving Clean Power 2030 in the United Kingdom and our long-term net zero objectives by providing firm, low carbon baseload power at scale to generate alongside intermittent renewable generation – see Table 2.

[81] DESNZ (2023), '*Biomass Strategy*' (viewed in December 2024).
[82] DESNZ (2024), '*DUKES*' (viewed in December 2024).
[83] DESNZ (2024), '*Transitional support mechanism for large-scale biomass electricity generators*' (viewed in December 2024).

Table 2: Nuclear reactors that will impact installed capacity in 2030

Nuclear Power Station	Type of reactor(s)	Capacity	Status
Heysham 1	Advanced gas-cooled reactor	1.1 GW	Online – currently expected to come offline in 2027
Hartlepool	Advanced gas-cooled reactor	1.2 GW	Online – currently expected to come offline in 2027
Heysham 2	Advanced gas-cooled reactor	1.2 GW	Online – currently expected to come offline in 2030
Torness	Advanced gas-cooled reactor	1.2 GW	Online – currently expected to come offline in 2030
Sizewell B	Pressurised water reactor	1.2 GW	Online – currently expected to come offline in 2035
Hinkley Point C	European pressurised reactor	3.2 GW	Construction – expected to come online between 2029 and 2031

To help deliver Clean Power 2030, government will work with EDF to support the delivery of Hinkley Point C, with Unit 1 scheduled for completion between 2029 and 2031, enabling consumers to benefit from the project's generation as soon as possible. EDF have also confirmed they will be further extending the lives of the four generating Advanced Gas-cooled Reactor (AGR) stations, following inspections and regulatory approvals. This means that two of the AGR fleet, Heysham 2 and Torness, are expected to be generating and providing clean power until 2030.

The impact of these activities could be significant in helping ensure a reliable supply of low-carbon electricity, reducing greenhouse gas emissions, and supporting the overall decarbonisation of the power sector. However, there are uncertainties associated with having Hinkley Point C online by the end of the decade, given delays in the past few years.

As set out in the Budget, the government is also progressing the post-2030 generation interventions, with final decisions on Sizewell C and the Great British Nuclear-led Small Modular Reactor programme to be taken at the Spending Review. The government will continue to seek to streamline regulatory processes, and foster innovation in nuclear technology, to ensure that new nuclear continues to play an important role in the net zero transition after 2030. We also acknowledge the policy of the Scottish Government is not to support new nuclear developments in Scotland.

Emerging renewable technologies

Whilst emerging renewable technologies, like floating offshore wind and tidal stream, are expected to play a limited role in the 2030 energy mix, our ability to deploy them at scale could be important to the UK's achievement of longer-term decarbonisation objectives. For example, floating offshore wind could unlock the ability to take advantage of the strong winds at deeper water depths, providing additional capacity as our seabed becomes increasingly constrained. Emerging technologies could also provide broader system benefits,

including by enabling renewables deployment in a wide range of locations or power generation that is uncorrelated with other energy sources, such as tidal stream.

In addition, early investment in the deployment of emerging technologies like floating offshore wind could provide wider economic benefits and export opportunities for the UK.[84] The Supply Chains and Workforce chapter sets out further detail on how government is realising these benefits, such as through the Floating Offshore Wind Manufacturing Investment Scheme.

The UK already has the world's largest pipeline of floating offshore wind projects based on confirmed seabed exclusivity, including around 25 GW already in development in Scotland. The Crown Estate has made available seabed capable of supporting up to a further 4.5 GW in the Celtic Sea, and the partnership announced between GBE and The Crown Estate will bring forward new offshore wind developments.

The government will continue to work with the industry to identify ways to support the development of innovative new renewable generation technologies to ensure that they can play the necessary role in the UK's long term energy mix. The government response to the consultation on amendments to the Contracts for Difference scheme announced that floating offshore wind projects successful in future allocation rounds would be granted the ability to build out in up to three phases, providing developers more flexibility in the construction phase and reducing project risk[85]. The National Wealth Fund will also continue to explore opportunities to finance nascent renewable generation projects, seeking to mobilise private capital into them and enable final investment decisions to be reached.

Next steps

We expect the actions set out above, delivered alongside cross-cutting enabling actions in other chapters, will set the framework for the delivery of renewable and nuclear deployment needed to meet the 2030 clean power capacity range. But there will be further action required to get these projects over the line, and the Clean Power 2030 Unit will continue to work across government, the devolved administrations and industry to ensure the implementation of enabling actions.

This includes through the ongoing work of the Offshore Wind Industry Council, the Solar Taskforce and the Onshore Wind Industry Taskforce, and through addressing delivery risks for renewable projects as they emerge (see the below case study as an example).

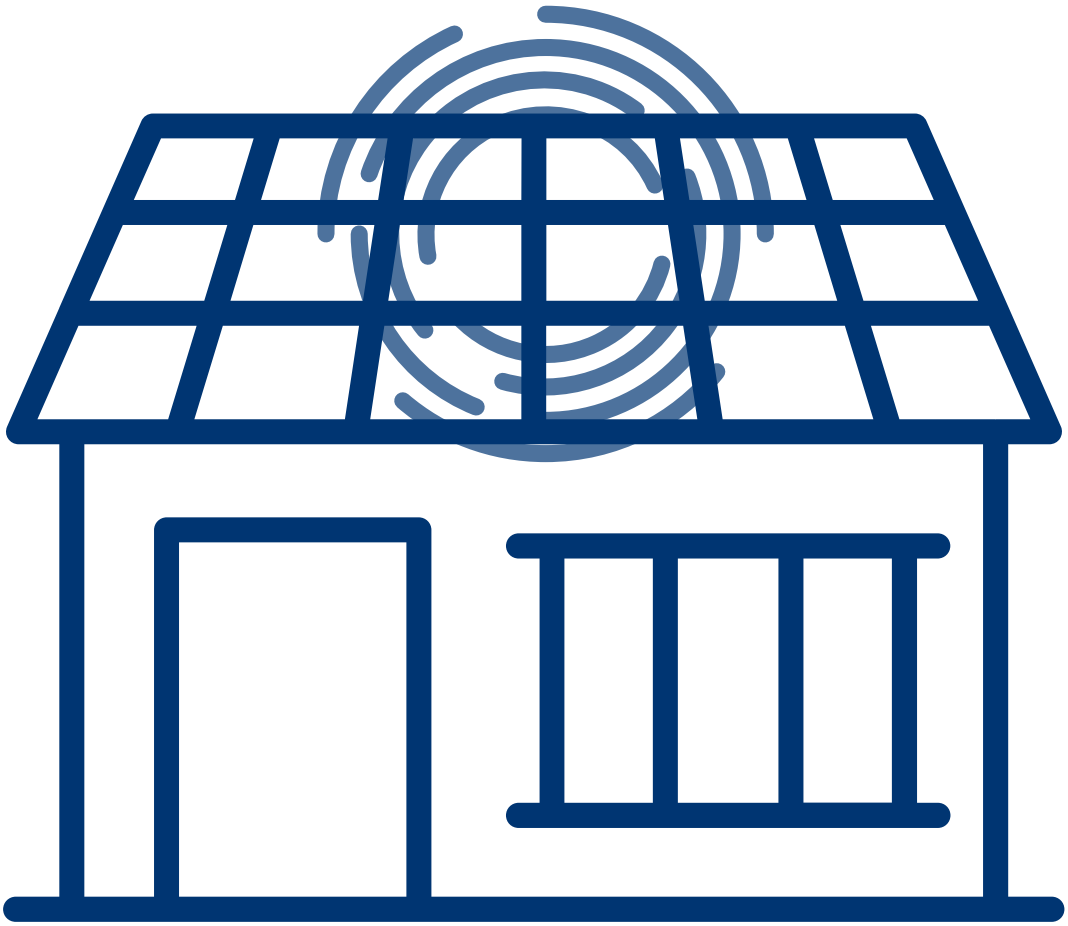
In the devolved nations, work is also underway to deliver this GB-wide target, with actions such as the Scottish Government's forthcoming Solar Vision, whose commitments will enable greater deployment of solar in Scotland.

Key upcoming milestones:

- The Solar Roadmap and the Onshore Wind Industry Taskforce report will both be published by Spring 2025.
- Consultation on relevant reforms to the Contracts for Difference scheme will be issued in early 2025.
- The consultation response on the Future Homes and Buildings Standards will be published in due course.

[84] The Crown Estate (TCE) (2024), '*Supply chain for Celtic Sea floating wind farms could power 5,000 new jobs and a £1.4bn boost for the economy*' (viewed in December 2024).
[85] DESNZ (2024), '*Contracts for Difference for Low Carbon Electricity Generation, Government response to the consultation on policy considerations for future rounds of the Contracts for Difference scheme*' (viewed in December 2024).

- Further details on the Warm Homes Plan will be announced after the second phase of the Spending Review.
- A call for evidence on the potential to drive solar canopies on carparks over a certain size will be issued next year.
- The consultation response on proposed transitional support for large-scale biomass will be published in due course.



Case Study: Management of emerging risks for project delivery – wake effects

Wake effects occur when wind turbines disrupt airflow to other turbines and reduce the energy production of those projects.

New projects with larger and/or a greater number of turbines have an even greater propensity to cause wake effects on existing downstream operational projects. Historically, this has been resolved outside the planning system, but a precedent was set with a wake condition in the 2023 Awel y Mor Development Consent Order, which said "No part of any wind turbine generator shall be erected as part of the authorised development until an assessment of any wake effects and subsequent design provisions to mitigate any such identified effects as far as possible has been submitted"[86].

As we radically accelerate the deployment of offshore wind in the UK to meet our 2030 target, we understand the uncertainty that this emerging issue has introduced both on operational windfarms and those in development, including the approximately 10 GW of pre-2030 offshore wind capacity currently in the planning system.

The Clean Power 2030 Unit would look to convene expert opinions from planners, engineers, academics, project delivery, data scientists and policy to understand the levers we can pull in this space, working with stakeholders like The Crown Estate, Crown Estate Scotland, the Planning Inspectorate, ORE Catapult and industry to gather the data and build an evidence base, looking for comparison mitigations with international partners and other industries.

[86] Statutory Instrument (2023), *'Infrastructure Planning: The Awel y Môr Offshore Wind Farm Order 2023'* (viewed in December 2024).

Reforming our electricity markets

Summary

Delivering Clean Power by 2030 requires an ambitious and actively planned approach from both government and business. Action is needed to shape and enable effective markets. This approach is central to the development and operation of the 2030 system and will only grow in importance as the system becomes more distributed and flexible in 2030 and beyond. To be successful in delivering clean power by 2030, we need to:

- **Support investor certainty** by ensuring wholesale market reforms, as being developed under the Review of Electricity Market Arrangements (REMA) programme, are delivered quickly and progress towards delivery is communicated clearly. We will do this by:
  - Publishing a REMA update alongside this 2030 Action Plan to provide further clarity on how our future electricity market might be designed;

  - Committing to a decision across the REMA programme by around mid-2025 and in time for the next CfD allocation round (AR7); and
  - Supporting interim measures from NESO and Ofgem, in the balancing market and on TNUoS respectively, whilst the REMA programme is completed.
- **Reform the Capacity Market** to provide clear and viable routes to decarbonisation for unabated gas, enable low-carbon flexible capacity, including consumer-led flexibility to increase its contribution to security of supply, and incentivise investment into existing capacity.
- **Accelerate reforms** to **balancing markets**, maintain **system operability** and reforms to **network charging** to ensure that the electricity system can be operated securely and cost effectively.
- **Unlock the full potential of consumer-led flexibility** through timely delivery of Market-wide Half Hourly Settlement in the retail market

The measures set out in this chapter seek to bring forward investment in low-carbon generation and flexibility while driving efficiencies in market operation. The proposals below address the more immediate challenges in our electricity system and will work alongside our ongoing efforts to drive the rollout of low-carbon generation and transition away from unabated gas generation while maintaining security of supply.

The challenge

While the state must play a role as system architect, markets are, and will, remain central to the development, delivery, and operation of the power system. It is widely accepted that the set-up of our electricity market with associated regulation and incentives needs to adapt to the future shape of our renewables-dominated power system. This need to adapt is recognised in the range of reform programmes and measures being undertaken by government, including REMA, which is considering the enduring market arrangements which are needed for the 2030s and beyond.

The delivery of clean power by 2030 needs to proceed at pace whilst we ensure that electricity markets are redesigned for the long term. Given the impact that market reforms will have on the long-term future of our energy system, it is crucial the potential reforms are properly and robustly considered. We recognise that in order to invest and build at the scale and speed necessary to deliver our 2030 target, the government must provide investors with greater clarity on short term risks, and long-term outcomes from policy and market changes. Therefore, this chapter sets out a clear way forward and timeline on this programme of work, together with the accompanying REMA update published alongside this plan.

Taking action

We have identified four key areas which require action and a clear direction of travel, to enable the delivery and maintenance of a clean power system by 2030. Some of these actions require additional policy development, while other areas require the acceleration of existing reforms to resolve existing challenges in the market. These actions are:

- Setting a clear direction of travel for wholesale market reform
- Reforming the Capacity Market
- Accelerating reforms to balancing markets, maintaining system operability and reforms to network charging
- Reforming the retail market to deliver better for consumers

Setting a clear direction of travel for wholesale market reform

Government seeks to reduce the uncertainties arising from policy and regulatory change as much as possible, to minimise the extent of policy and regulatory risks, which can be a significant barrier to investment. We have considered a wide range of options for wholesale market reform. Alongside this Action Plan, the government has published an Autumn Update on REMA providing greater clarity on the status of the different longer-term options for market reform. It is clear that "no change" is not an option in any scenario.

We have narrowed down policy development to improve locational and operational signals to two sets of options: zonal pricing (where the single electricity wholesale market is split into several zones) and retaining national pricing alongside a range of reforms to its existing arrangements. Whilst no decision has yet been taken between zonal pricing or reformed national pricing, and both options are under equal consideration, significant progress on narrowing down the options has been made, with policy development continuing at pace.

We are continuing to conduct further analysis and are aiming to conclude the policy development phase of the REMA programme across all policy areas by mid-2025. We will ensure that these REMA timelines align with the timetable for the next CfD allocation round (AR7). We plan, therefore, to announce the final decisions on REMA and the timetable for their implementation, particularly in relation to wholesale market reform and any transitional or legacy arrangements, before the AR7 auctions open, giving investors clarity for prospective bids. We will aim to provide ongoing clarity to industry, where possible, throughout the decision and transition periods.

We recognise that significant market reform creates uncertainty for investors and market participants. Government recognises the potential implication for cost of capital of transferring locational risk to generators. We will take these factors into account in our Cost-Benefit Analysis and in final decisions on whether to introduce zonal pricing or reformed national pricing. However, no change is not a viable option given the significant changes in the generation mix that will take place. In the REMA publication we provide an update on policy development for legacy and transitional arrangements. This includes:

- Confirming our commitment to **treat agreements under the next CfD allocation round in the same way as existing CfD agreements**, in relation to any legacy or transitional arrangements.
- Setting out our expectation that **if zonal pricing was to be introduced, existing and AR7 CfD contracts would be amended to use a local zonal reference price**, insulating these agreements from zonal price risk.

Reforming the Capacity Market: Short-term changes to ensure security of supply and support the transition to Clean Power 2030

As Great Britain's primary mechanism for ensuring security of supply, we are proposing a suite of near-term reforms to the Capacity Market that will contribute to both Clean Power 2030 and Great Britain's electricity security. These changes are critical to ensure continued investment in and the commercial viability of assets critical to security of supply.

The Capacity Market is a well-established, technology-neutral scheme in which existing and new-build electricity capacity (in the form of generation, interconnectors, consumer-led flexibility and other technologies) receive revenue (£/MW) based on capacity. Participants secure agreements through auctions which require them to make capacity available at times of system stress.

The nature of risks relating to electricity security faced by the system are changing. As the amount of renewable generation increases, reform is needed in order to meet peak demand in an increasingly electrified economy or demand over periods of low renewable output. Flexible technologies can, and will, play a critical role in enabling the safe transition away from gas to clean power and the Capacity Market will adapt to this new landscape. Government is taking steps now to reform the Capacity Market to provide clear and viable routes to decarbonisation for unabated gas, enable low-carbon flexible capacity to increase its contribution to security of supply, and incentivise investment into existing capacity to ensure security during the transition to Clean Power[87,88].

Measures aimed at supporting the decarbonisation of existing and new unabated gas assets include:

- Consulting on an exit pathway for unabated gas plants with multi-year agreements to leave the Capacity Market without penalty and transfer to a Dispatchable Power Agreement, facilitating conversion to power CCUS once the technology is available.
- Calling for evidence on *additional* pathways that could be implemented in the future to enable decarbonisation of unabated gas, such as conversion to Hydrogen to Power.
- Placing an obligation on power plants. This includes all substantially refurbishing power plants and new combustion power plants participating in the 2026 Capacity Market auction to declare that they will comply with new Decarbonisation Readiness legislation recently introduced alongside these proposed changes to the Capacity Market. This legislation will require new build and substantially refurbishing unabated gas and other combustion power plants in England to be built in such a way that they can readily convert to hydrogen-firing or by retrofitting carbon-capture technology within the plant's lifetime[89].

In parallel, the government is actively developing proposals to improve our understanding of the system's capacity and to ensure electricity security during the transition to Clean Power by:

[87] DESNZ (2024), '*Consultation: Capacity Market: proposals to maintain security of supply and enable flexible capacity to decarbonise*' (viewed in December 2024).
[88] DESNZ (2024), '*Call for Evidence: Capacity Market: call for evidence on proposals to maintain security of supply and enable flexible capacity to decarbonise*' (viewed in December 2024).
[89] Draft Statutory Instrument (2024), '*The Environmental Permitting (Electricity Generating Stations) (Amendment) Regulations 2024*' - provisionally expected to come into force from 28 February 2026 (viewed in December 2024).

- Exploring future options for developing NESO's modelling of longer-term capacity needs, including indicative future capacity targets eight years ahead depending on responses to the call of evidence published in October. As the grid decarbonises, it is particularly important to ensure we have as much clarity regarding future capacity needs as possible.

- Making it easier for refurbishing plants to access multi-year Capacity Market agreements, providing greater revenue certainty and encouraging the type of investment that ageing plants need to extend their operating life.

The government recently published a policy update on the Capacity Market Phase 2 policies.[90] The government intends to introduce these proposals ahead of next year's Capacity Market prequalification window. This includes:

- Enabling low-carbon technologies to access 3- year agreements with no capex thresholds, facilitating CM access and supporting investment in low carbon, low capex technologies, and

- Introducing a new 9-year capex threshold for low carbon projects, so that new and refurbished projects with costs which fall between the existing 3-year and 15-year threshold are not prevented from coming forward in the Capacity Market.

Consumer-led flexibility involves voluntary actions taken freely and directly by energy consumers to shift their electricity use. This enables consumers to be rewarded with cheaper electricity by flexibly adjusting their usage to times of lower demand on the grid. The government is reducing administrative barriers to consumer-driven flexibility. Building on feedback already received from industry the government will publish a package of proposed changes to the Capacity Market shortly, that aims to improve the contribution that consumer-driven flexibility can make to our electricity security. This will seek views on how to better value, integrate and incorporate consumer-led flexibility within the Capacity Market.

Maintaining operability and managing constraints

Rapid progress will need to be made to ensure that the electricity system can be operated securely and cost effectively using zero carbon ancillary services. In the nearer term, this will include overcoming barriers to more advanced IT and digitalisation, including integrating new technology into NESO's control room. Additional changes to the wider market are needed to help ensure decarbonised system operability, including constraint management. These changes will help to ensure continued investment in renewables and reduce costs.

NESO will continue developing short and medium-term balancing service markets, in order to help deliver a cost-efficient system: NESO's Roadmap[91] outlines measures to enhance utilisation of batteries in providing flexibility services and introduce new stability and voltage markets to increase accessibility to low-carbon technologies. Further detail on measures to enhance the efficiency of batteries are outlined in the Short-duration Flexibility chapter.

NESO are also leading on a **Constraints Collaboration Project** with industry, to develop options for improved constraint management. The project aims to reduce these costs to consumers by implementing market-based constraint management measures. Initial assessments indicate potential savings of up to 6% of thermal

[90] DESNZ (2024), *'Capacity Market: Policy Update – 2023 Phase 2 Consultation'* (viewed in December 2024).
[91] NESO (2024), *'NESO Roadmap'* (viewed in December 2024).

constraint costs per annum compared to the current balancing mechanism[92].

This includes the potential for constraint management markets and the use of technical solutions such as the use of storage to increase the flow of electricity over constraints. The outcomes of this project should be available by early 2025. We will consider the outcomes of this project as part of the ongoing REMA programme.

There are several policy initiatives planned to maintain system operability through low-carbon flexible assets as the proportion of variable renewable generation grows:

- **An electricity system operability strategy for 2030.** This will provide clarity on how NESO will maintain system operability in a way that is consistent with Clean Power 2030, at best value to the consumer. The strategy will be published by NESO and we will work with NESO, Ofgem and stakeholders to develop a coherent and robust strategy, to be published in Spring 2025.
- **NESO have agreed to improve forecasting of medium to long-term operability needs**, including by location where relevant. This will help give investors and developers the level of certainty that they need for the future demand of these services to invest in low-carbon ancillary service capability.
- **Improved greenhouse gas emissions reporting on NESO operability activity across all electricity markets**. This will provide transparency on the greenhouse gas intensity of each ancillary service that is used to maintain operability, enabling the tracking of progress in the decarbonisation of these crucial services on which operability depends. These measures will help to reach Clean Power 2030 and will work in conjunction with a longer-term strategy to resolve operability challenges.

Ensuring the continued investment in renewables:

The system is experiencing rising Transmission Network Use of System (TNUoS) Charges, creating a need for reforms to the network charging regime. TNUoS charges recover the cost of building and maintaining the transmission network in England, Wales, Scotland, both onshore and offshore. They feature a price signal designed to reflect the costs that demand consumers and generators impose on the transmission system by connecting in different locations. The NESO's 10-year projection shows a trend of significant increases to TNUoS charges for Scottish generators, and a significant decrease to those in England and Wales. We also recognise that some of the highest charges are at the very end of the network resulting in some of the most productive wind assets facing the highest charges. We understand from some stakeholders that there is a need to address the volatility and long-term uncertainty arising from TNUoS charges. In particular, the increasing size of charges and the relationship with CfD marginal clearing strike prices can have an impact on investment.

Ofgem have proposed a temporary cap and floor to alleviate these concerns. In an open letter[93] Ofgem encouraged NESO to develop a temporary cap-and-floor solution in response to projected increasing costs and volatility of TNUoS to drive investment in renewables. We expect that this update will provide generators with greater certainty ahead of future allocation rounds including providing certainty on direction

[92] NESO (2024), *'Constraints Collaboration Project – Final Report'* (viewed in December 2024).
[93] Ofgem published an open letter to industry on 30th September 2024 proposing a cap-and-floor solution to the increasing cost and volatility of Transmission Network Use of System charges.

of travel ahead of AR7. We will continue to work with Ofgem and NESO as this modification progresses.

All the above proposals are at different stages of development; subject to the outcome of recent consultations and calls for evidence. The Clean Power 2030 Unit will work closely with NESO and Ofgem to ensure the timely delivery of these reforms. The earliest implementation for changes to network charges would be for the 2026 auction prequalification window.

Following this shorter-term reform, under the lead REMA design options, Ofgem would introduce enduring reforms to network charges to ensure that they send a stable, cost-reflective, and effective locational signal. These options are being developed and assessed through Ofgem's strategic review of transmission charging. We continue to work with Ofgem in this space and they seek to conclude policy thinking in line with REMA timeframes.

Unlocking the potential of the retail energy market

The future retail market will play a vital role in enabling consumer-led flexibility, outlined in greater detail in the short-duration flex chapter. The market needs the right price signals which accurately reflect the value of actions to the wider system, and which incentivise suppliers and consumers to engage in such consumer-led flexibility. Additionally, smart technologies will be needed to enable consumers to engage with new products and services, allowing them to benefit.

Market-wide Half-Hourly Settlement is a key enabler for the retail market, making its timely delivery critical for the 2030 target. This industry-led transformation programme, overseen by Ofgem, will change the landscape of the retail market. Consumers will be able to take advantage of this system to get lower bills.

In addition, the smart meter rollout is critical for unlocking innovative approaches to managing consumer demand and will enable the successful delivery of Market-wide Half-Hourly Settlement. Improved price signals will align retail market incentives with a decarbonised energy system and demonstrate the value of consumer-led flexibility. The short-duration flexibility chapter contains actions to remove barriers to smart meter adoption.

Consumer protections must enable trust in the market. In the future, smarter technologies, tariffs, and services should empower consumers to take advantage of lower price periods. We will progress work in this area so that all consumers can benefit, regardless of their level of engagement, energy needs, or income.

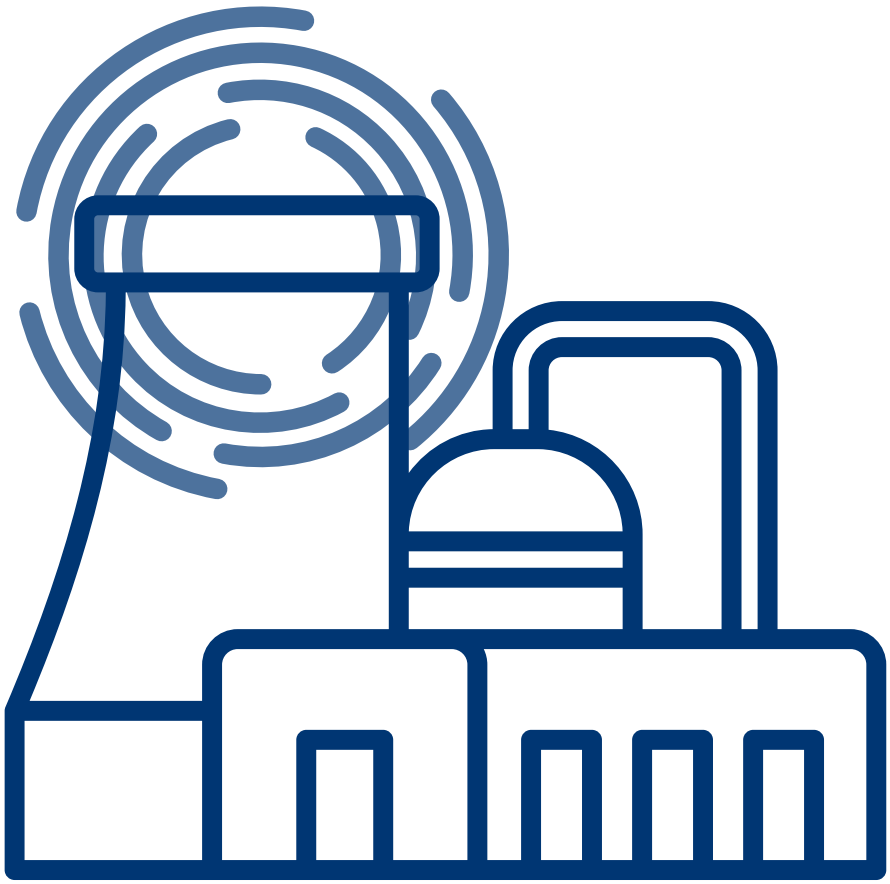
In coordination with Ofgem, we will ensure that consumer protections are designed in such a way that they protect consumers, whilst still enabling consumers to access the benefits that innovation can bring. This includes strengthening the regulator to ensure it can hold companies to account for wrongdoing, a consultation on regulation of Third Party Intermediaries, and a commitment to improving compensation as showcased in Ofgem's consumer confidence programme.

Government is committed to retaining the default tariff cap, and will work closely with Ofgem to ensure that the future price protection framework enables consumers to get the most out of a smarter and more flexible market, whilst also ensuring that those who are unable to use energy more flexibly are not unfairly penalised.

Next steps

We expect these actions, delivered alongside cross-cutting enabling actions in other chapters, to drive decarbonisation by enhancing investor confidence, spurring investment in clean technologies, and fostering a more adaptable and efficient energy system essential for meeting the 2030 target. The Clean Power 2030 Unit will work across government and industry to ensure we advance policy development on wholesale market reform. This includes the ongoing work of the REMA and Retail teams.

- **The REMA Autumn Update** provides further clarity for stakeholders – particularly investors – on REMA's progress, timelines, and the policy options still being considered.
- We will seek to conclude the policy development phase of the REMA programme by mid-2025. We will ensure that REMA timelines will align with the timetable for AR7 in order to provide investors the maximum clarity for prospective bids.
- On **CfD reform** and **Capacity Market reform**, we will ensure the timely delivery of reforms needed to enable 2030 Clean Power, whilst continuing to progress the longer-term reforms being considered under REMA.



Short-duration flexibility

Summary

Since Winter 2022, under the previous government, the National Energy System Operator has offered to consumers the option for them to take advantage of different tariffs at different times. This was a departure from a monolithic system where most consumers have received a single price, whatever time they used various appliances. There was a positive response from consumers to this voluntary offer.

A significant increase in short-duration flexibility of 29-35 GW across battery storage, consumer-led flexibility and interconnection capacity from 2023 levels is possible and can play a role in achieving clean power in 2030.

The opportunity is huge, as battery storage and consumer-led flexibility are scalable and could be relatively quick to deploy. Their deployment could not only cut bills for consumers but minimise the amount of more costly generation and associated network infrastructure that needs to be built, whilst maintaining security of supply.

Key actions set out in this Chapter to address some of the biggest challenges include:

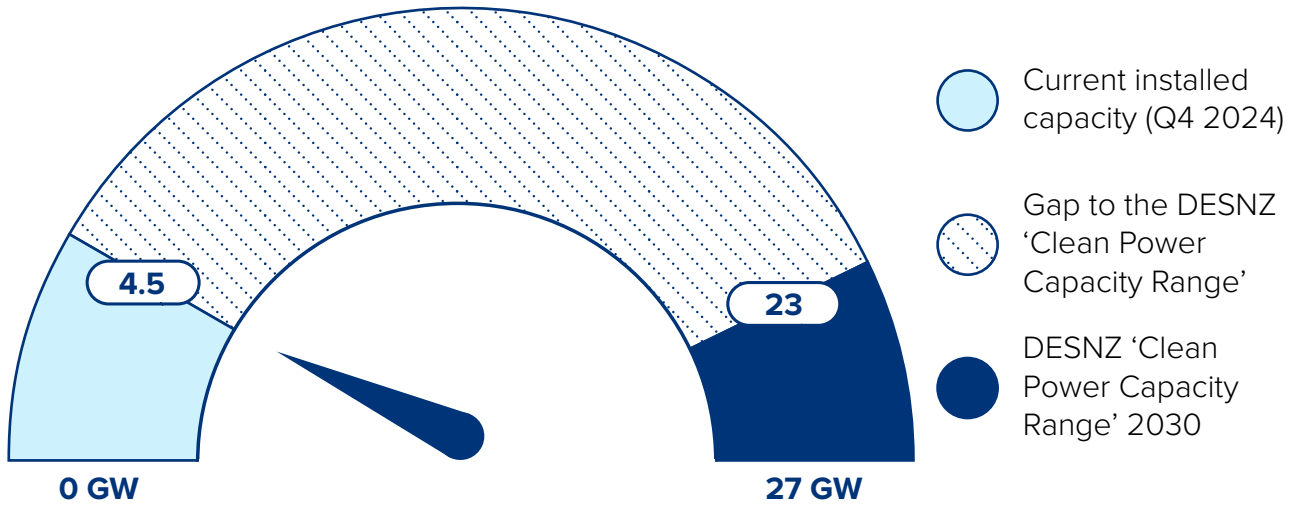
- **Publication of a Low Carbon Flexibility Roadmap in 2025** to consolidate existing and further new actions to drive both short and long-duration flexibility for clean power in 2030 and net zero by 2050;
- Incremental **market reforms to provide batteries and consumer-led flexibility** with appropriate and fair access to, and utilisation within, relevant markets, to assist investment decisions;
- **Enhanced management** of the portfolio of disparate programmes, projects and activities that contribute to the delivery of consumer-led flexibility, including review of the Market-wide Half-hourly Settlement (MHHS) Programme's delivery model to ensure implementation.

Challenges and Actions

We have divided these challenges and actions into four subsections: battery storage; consumer-led flexibility; common enablers for both technologies; and electricity interconnection.

Battery Storage

Current installed capacity compared to the DESNZ 'Clean Power Capacity Range' in 2030 (GW)



Source: Table 1

Grid scale[94] and small-scale[95] batteries can offer short-duration flexibility (currently typically a maximum of two hours' continuous supply of electricity without recharge). Long-duration electricity storage (currently defined as at least 6 hours of continuous supply of electricity), is considered in the long-duration flexibility chapter of this Action Plan.

Batteries can be used to store electricity when it is plentiful and low cost, such as during low demand periods when wind and solar output is high, for use when electricity generation is less plentiful or during times of peak electricity demand. Batteries can reduce the amount of generation and associated network that needs to be built to meet peak demand, helping Britain reach clean power in a cost-effective way and reducing delivery risk associated with other types of energy infrastructure.

[94] Utility-grade batteries providing services to a region or the whole of GB.
[95] Those providing services to a household or business and sitting behind the meter for the premises.

Currently, there is 4.5 GW of battery storage capacity in Great Britain[96], the majority of which is grid-scale. Based on NESO and DESNZ battery storage growth scenarios for 2030, we expect 23-27 GW of battery storage to be needed by 2030 to support clean power, a very significant level of increase. The government expects the majority of this increase to come from grid-scale batteries, with small-scale batteries also making a contribution.

While there are many common enablers for both consumer-led flexibility and battery storage which are addressed later in this chapter, there are also specific actions necessary for battery storage to deliver on its potential for supporting clean power. In addition, DESNZ is considering the role heat batteries can play in decarbonising homes and hopes to be in a position to feed this work into the low carbon flexibility roadmap in summer 2025. Among the specific actions required for batteries, improving the time it takes for mature grid-scale batteries to obtain grid connections and planning decisions are the most significant actions in order to deliver the huge increase in grid-scale battery capacity. The table below sets out these hurdles and corresponding actions needed to address them, as well as specific hurdles and actions applying to small-scale batteries.

Table 3: Battery-specific hurdles and actions

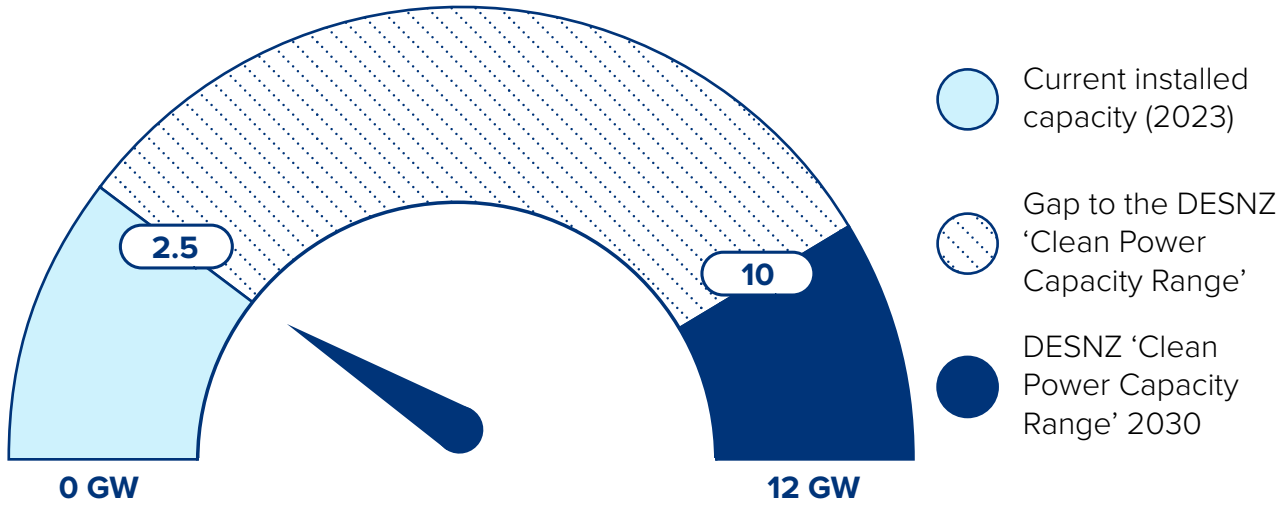
Area	Hurdle	Action
Grid scale batteries	**(a) Grid connections** While there are many projects with grid agreements, these and other grid connection agreements are not ordered by project maturity or strategic need leading to long waits for a grid connection.	**NESO** have agreed to work with **Ofgem** and **network companies** to ensure that grid connection reforms and acceleration of grid infrastructure development timelines result in a sufficient capacity (in line with the 2030 clean power capacity range) of mature, grid-scale battery projects to connect and operate by 2030.
	(b) Planning Grid-scale batteries take a long time to gain planning approval and are not currently referenced in the national planning policy framework.	**DESNZ** will work with **MHCLG** to consider how grid-scale batteries, and their importance for clean power in 2030 and net zero, could be referenced in future planning reforms.
	(c) Health and safety Grid scale batteries are currently covered by a robust health and safety framework. This needs to be maintained as batteries deploy.	**Defra** will consult on including grid-scale batteries within the Environmental Permitting Regulations by June 2025.
Small scale batteries	**(a) Affordability** The upfront costs of home batteries can be high for consumers, particularly those on low incomes.	**DESNZ** will consider the financing options for retrofit works, including batteries, in the Warm Homes Plan.

[96] Modo Energy (2024), *'Indices & Benchmarks'* (viewed in December 2024).

Area	Hurdle	Action
	(b) Final consumption levies Home batteries and EV batteries providing vehicle-to-grid services are asymmetrically charged with respect to final consumption levies. This means that levies are charged on import but not refunded on export, creating a disincentive to providing flexibility.	**DESNZ** and **Ofgem** will review the options available to remove final consumption levies for home batteries and vehicle-to-grid EV batteries and set out next steps in a 2025 Clean Power Flexibility Roadmap.

Consumer-led flexibility

Current installed capacity compared to the DESNZ 'Clean Power Capacity Range' in 2030 (GW)



Source: Table 1

Consumer-led flexibility involves voluntary actions taken freely by energy consumers – or on their behalf by Demand Side Response Service Providers (DSRSPs) with consumers' consent – to shift some of their electricity use when they choose to be rewarded for this flexibility while still having their energy needs met[97]. The financial benefits of flexibility on offer to consumers reflect the benefits to the wider electricity system (which in turn benefits all consumers).

A consumer could choose, for example, to receive cheaper electricity bills or other benefits in return for enabling a service provider to vary the electricity use of an

[97] These voluntary offers of flexibility by energy consumers (whether households or industries) can also be referred to as demand side response (DSR) or demand flexibility.

Energy Smart Appliance (ESA) such as their electric vehicle (EV) smart charge point or their smart heat pump while still meeting the consumer's needs (e.g. a charged EV by the morning or household temperature remaining within defined bounds).

All consumers will enjoy benefits from nation-wide consumer-led flexibility, as it will lower prices for peak hours by flattening the price curve.

Consumer-led flexibility also reduces Britain's aggregate electricity use at peak demand periods, thereby minimising the amount of generation and associated network that needs to be built to meet peak demand. It can therefore help Britain to reach clean power in a cost-effective way with reduced large infrastructure delivery risk. Ofgem monitors consumers' approach to flexibility and its role includes ensuring that sufficient consumer protection is in place for this growing sector.

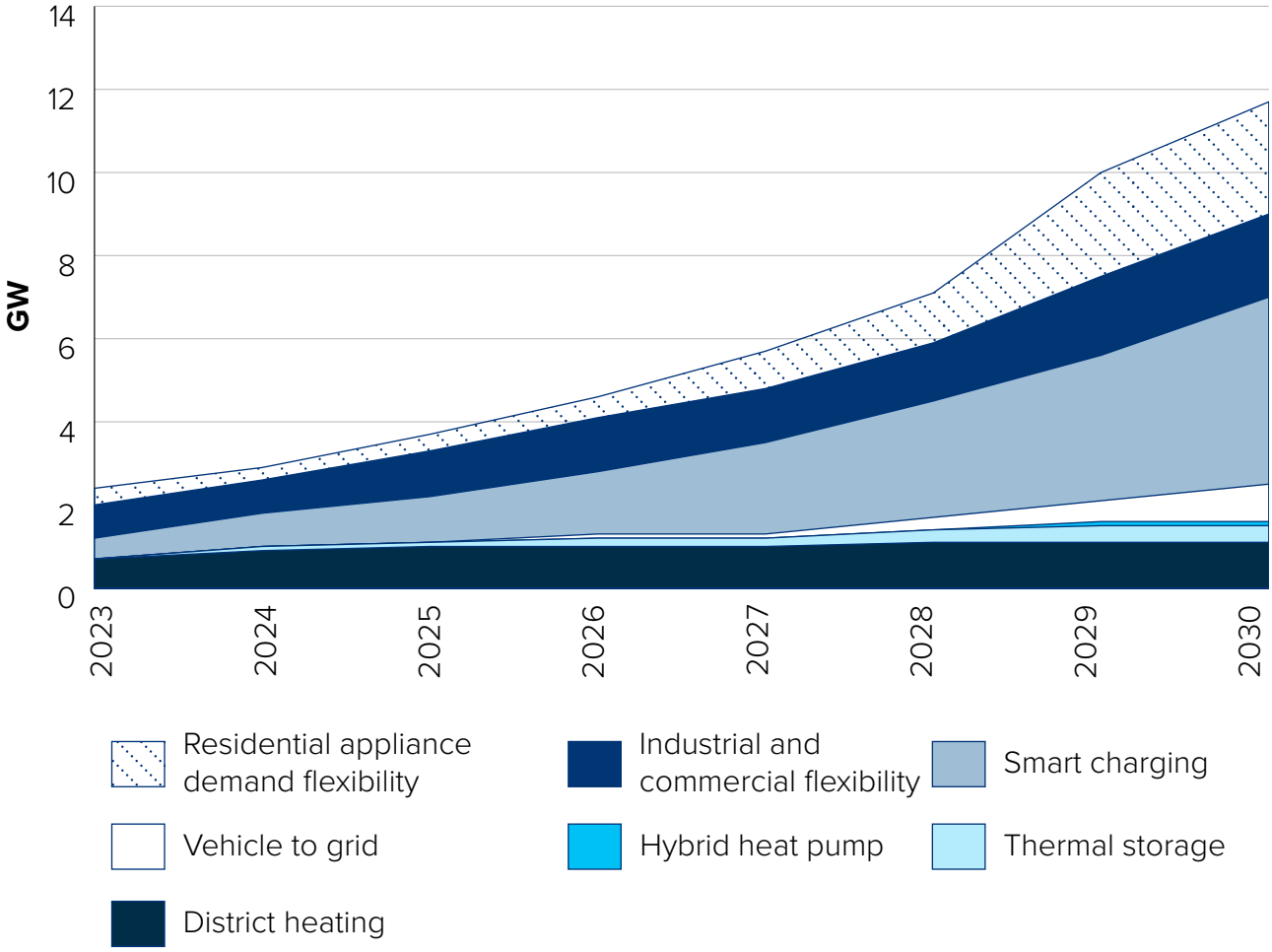
In 2023, following a scheme put in place by the National Energy System Operator, there was 2.5 GW of consumer-led flexibility utilised in Great Britain (not including electric storage heater flexibility), with 0.8 GW from smart heat pumps and flexible district heating, 0.5 GW from EV smart charging, 0.4 GW from other smart appliances and 0.8 GW from non-domestic consumer-led flexibility. Non-domestic consumer-led flexibility has fallen over time, reducing from 1.7 GW in 2021 to 1.2 GW in 2022 and then to 0.8 GW in 2023[98,99].

Up to now, only those consumers who were the best informed took up the flexibility on offer. With market-wide half-hourly settlement there is considerable potential for growth led by consumers.

Based on NESO and DESNZ scenarios for 2030, excluding electric storage heaters, we expect 10-12 GW of consumer-led flexibility capacity is possible by 2030 to support clean power. Government expects EV smart charging to be a key driver of consumer-led flexibility capacity growth.

[98] NESO (2024), *'Future Energy Scenarios 2024'* (viewed in December 2024).
[99] 4.8 GW is also assumed flexibility from storage heaters in 2023. The electric storage heaters providing current flexibility have in most cases been in place for a long time, and this capacity is expected to fall over time. It will be important that when consumers replace storage heaters that they adopt new and efficient forms of low carbon heating such as heat pumps.

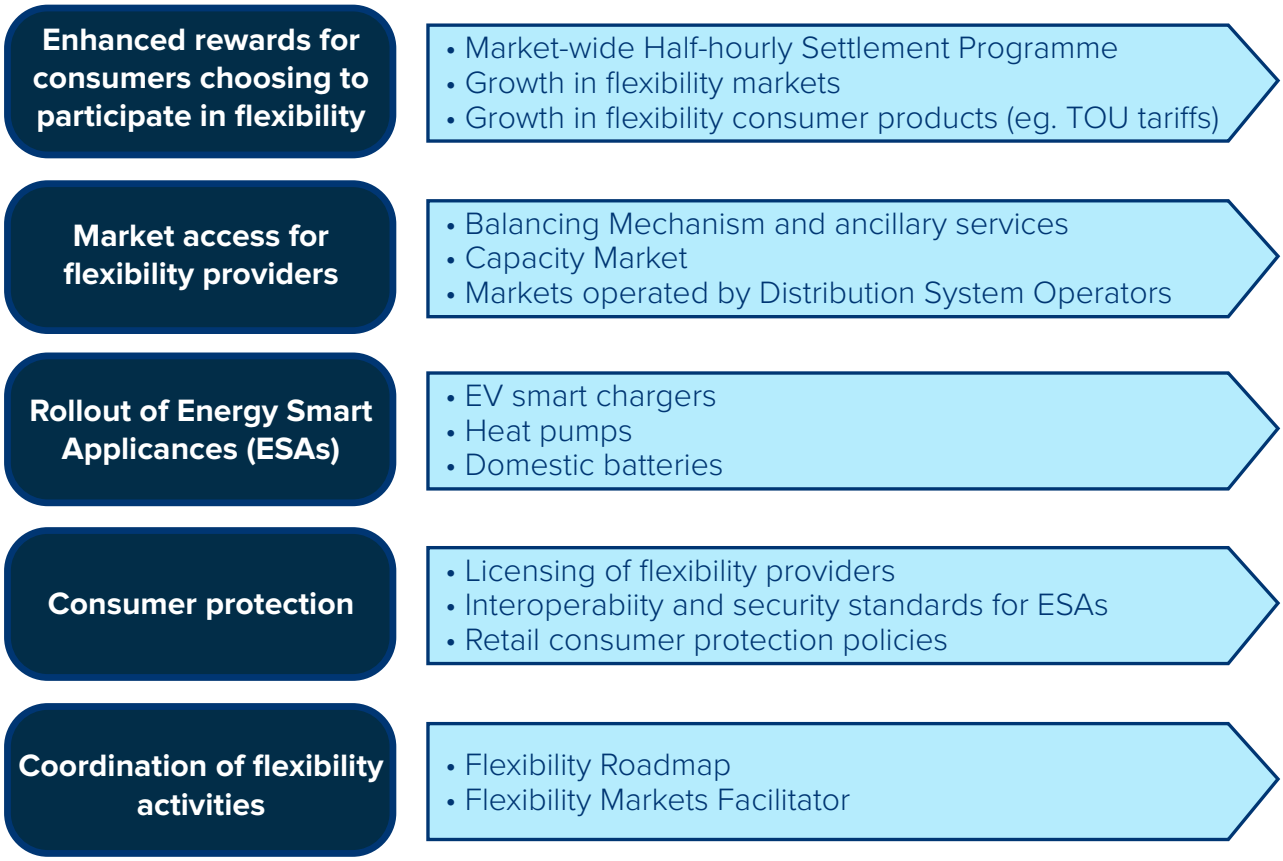
Figure 13: Consumer-led flexibility at peak (GW), 2023-2030



Note: Data excludes storage heaters that shift around 4 GW. NESO refers to consumer-led flexibility as demand flexibility.

Source: NESO (2024), 'Clean Power 2030'

Ensuring that all consumers have the potential benefit of this flexibility requires the delivery of a large number of different policies, projects and programmes across many different organisations, summarised at a high level in the diagram below.



While there are many common enablers for both consumer-led flexibility and battery storage, there are also specific actions necessary to further increase the scale of choice and opportunity for consumer-led flexibility and enhanced energy bill savings. Some areas requiring a step change are presented in the table overleaf, where the hurdle they present to consumer-led flexibility capacity is set out. For context, the wider government net zero programmes supporting the electrification of transport and heating will also be fundamental to the amount of consumer-led flexibility that becomes available by 2030.

Table 4: Consumer-led flexibility-specific hurdles and enablers

Area	Hurdle	Action
Market-wide half-hourly settlement	Swift introduction of market-wide half-hourly settlement is vital for incentivising all energy suppliers to reward consumers for being flexible, but the programme has faced delays.	**Ofgem** as programme sponsor will review the market-wide half-hourly settlement programme delivery model by the end of FY24/25, including to ensure that industry parties have credible plans to complete market-wide half-hourly settlement in a timely way and maximise the amount of half-hourly consumption data available.
Smart Secure Electricity Systems	Trust in consumer-led flexibility is essential to uptake, requiring interoperability of ESAs (e.g. to support choice and competition in service provision for consumer-led flexibility), effective regulation of DSRSP engagement with consumers, and safeguards against cyber-security and grid stability risks.	**DESNZ** will publish in Spring 2025 a government response to the 2024 package of Smart Secure Electricity Systems Programme consultations on ESAs interoperability, a new licensing regime for service providers for consumer-led flexibility and load controllers, and tariff data accessibility. This will be followed up with detailed consultations on draft "first phase" ESA legislation establishing minimum cyber-security requirements for appliances in scope and a smart mandate for heat pumps; draft DSRSP and load controller regulation and licence conditions; and measures to improve time of use tariff data accessibility.
Delivery Coordination for consumer-led flexibility	Successful delivery of consumer-led flexibility requires coordination across a large number of policies, projects and programmes spanning government departments, Ofgem, NESO and industry. More strategic coordination and portfolio management is required.	The Clean Power 2030 Unit will work with policy teams to review necessary organisational requirements to effectively plan and track delivery data for consumer-led flexibility across all relevant organisations, and address obstacles, on an ongoing basis.

Area	Hurdle	Action
Metering	**Smart meters** Consumers looking to participate in consumer-led flexibility need to be able to quickly obtain a smart meter.	**DESNZ** is working with Ofgem to introduce new Guaranteed Standards of Performance relating to smart metering in 2025. These may include standards relating to the timely installation and maintenance of smart meters, compensating consumers where they are not met.
	Device meters Current device metering regulation requires meters to have external displays, which adds to manufacturing costs of smart appliances.	**DBT** will publish a consultation by end 2024 to remove external display requirements for device meters from the Measuring Instrument Regulations. DBT will continue stakeholder engagement on allowing for remote display options in the Measuring Instruments Regulations, for meters used for trade, and plan to consult on options to amend the existing requirements during the first quarter of 2025.
Consumer engagement	Consumer-led flexibility is a voluntary activity, and it is crucial that consumers are well informed of what it involves and how to participate, which evidence shows is not always currently the case.	**DESNZ** will, in Summer 2025, publish a consultation on consumer engagement, including on the potential to better coordinate and amplify accurate messaging on consumer-led flexibility.
Large non-domestic consumer-led flexibility DSR	Consumer-led flexibility capacity from large non-domestic energy consumers has fallen from 1.7 GW in 2021, to 1.2 GW in 2022 and then to 0.8 GW in 2023[100].	**DESNZ, NESO** and **Ofgem** will set out specific actions for supporting an increase in large non-domestic consumer-led flexibility in a Low Carbon Flexibility Roadmap in 2025, following industry engagement.
EV smart charging	**Increasing access to EV private charging** Landlords can increase the costs of charging EVs for tenants who need to access a communal smart charger, making EV smart charging unduly expensive for some.	**Ofgem** will consider reform on the Maximum Resale Price, seek views on what needs to change to address identified issues and update the current requirements, as required, setting out progress and next steps in the 2025 Flexibility Roadmap.

[100] Figures illustrate the loss of incentive, including the Triad changes during this period, not the decline in actual DSR capacity.

Area	Hurdle	Action
	Increasing access to smart public charging. Charging of electric vehicles in public on-street locations has the potential to deliver short-duration flexibility. However, charge point operators are only just beginning to provide flexible tariffs to their customers.	**DESNZ** together with **DfT** will explore with industry options to accelerate deployment of smart charging at public charge points and set out progress and next steps in the 2025 Flexibility Roadmap.

Common enablers for consumer-led flexibility and battery storage

Some of the greatest hurdles faced by consumer-led flexibility and batteries are common to both, in particular around market access. Unlike low carbon generation and other forms of low carbon energy storage, battery and consumer-led flexibility projects are wholly dependent on forecast market revenues for investment decisions. Therefore, confidence that there will be appropriate access to, and utilisation within, relevant markets is crucial for scaling up battery storage and consumer-led flexibility for Clean Power 2030.

The table below sets out more detail on this and other common hurdles, and corresponding actions for addressing them and turning them into enablers for battery storage and consumer-led flexibility. Additional work that has the potential to improve market opportunities for consumer-led flexibility and batteries, including wider change to GB market arrangements that could send sharper price signals, is discussed in the 'Reforming our electricity markets' chapter of this action plan.

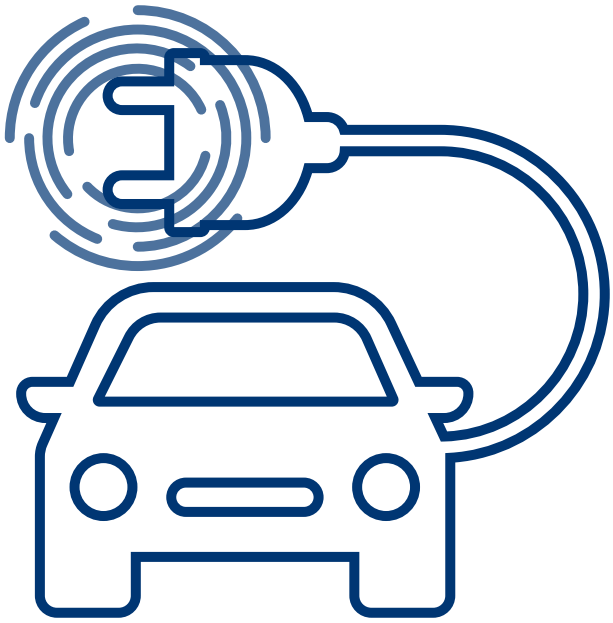


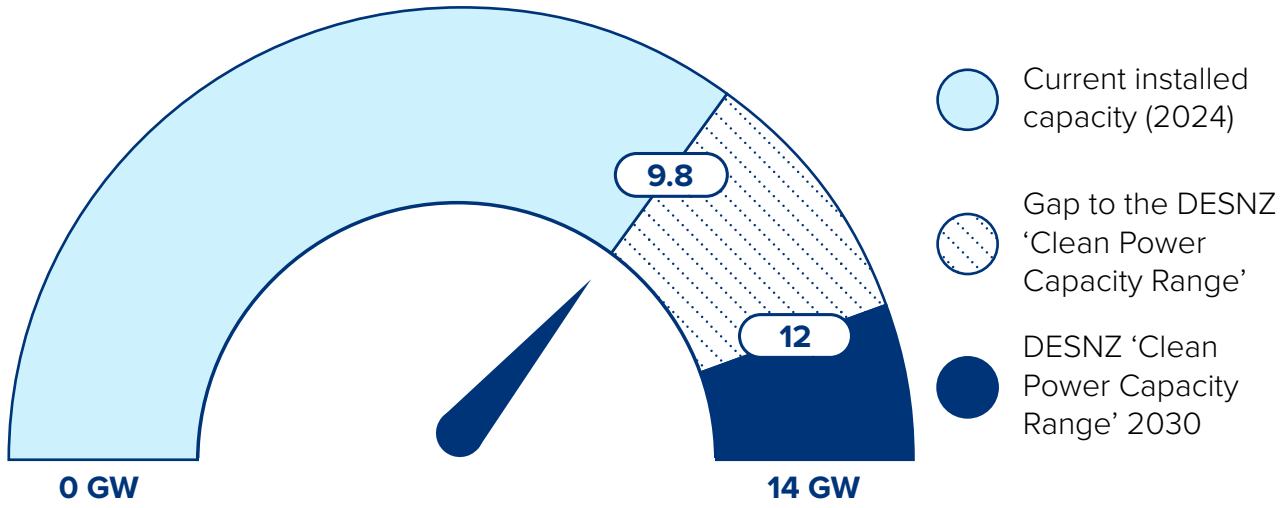
Table 5: Consumer-led flexibility and battery storage common enabler hurdles and actions

Area	Hurdle	Action
Market Access	Access to some energy markets (e.g. the Balancing Mechanism, other NESO/DSO markets and the Capacity Market) is currently challenging for some kinds of short-duration flexibility. Issues include: • Overly stringent market entry requirements for flexibility; • The System Operator's ability to use all low carbon flexible assets (such as batteries and consumer-led flexibility) effectively and incorporate them fully into the economic dispatch process has been hindered due to legacy systems, manifesting in "skip rates"; and • Barriers to the stacking of revenues by flexibility assets across different markets.	**NESO** have agreed to set out, for inclusion in the Low Carbon Flexibility Roadmap, progress on and further actions to support providing flexibility assets with appropriate and fair access to the markets it manages, including: • removing unnecessary or overly restrictive rules or participation requirements to the greatest extent possible, allowing access to more types of flexibility assets; • providing increased transparency as well as improvement to the systems NESO uses to dispatch flexibility, with evidence of reductions in flexibility asset skip rates; • further facilitating revenue stacking across different markets; and • an assessment of the potential to create additional measures to enable a wide range of flexibility providers to offer services to meet system needs (including constraint management). **DESNZ** will, ahead of the 2025 Capacity Market prequalification period in summer 2025, implement the Capacity Market policy proposals as outlined in its July 2024 and October 2024 responses to the 2023 Phase 2 Capacity Market consultation. These include permitted augmentation of storage, adjustments to Extended Performance Testing Requirements and making available 3-year Capacity Market agreements for low carbon technologies whose CAPEX is £0/kW. In addition, DESNZ plans to publish shortly a Consultation and Call for Evidence to invite stakeholder views on how to better reflect the diversity of consumer-led flexibility technologies and their treatment and handling within the Capacity Market.

Area	Hurdle	Action
Flexibility Roadmap	Great Britain lacks an up-to-date framework for prioritising and managing the delivery of ongoing actions across government, NESO, Ofgem and industry. This will be crucial for maximising the potential of flexibility for Clean Power 2030 and net zero by 2050.	**DESNZ** will publish with **Ofgem** and **NESO** a joint Low Carbon Flexibility Roadmap in 2025. The Flexibility Roadmap will set out clear short and long-duration flexibility milestones and measures required for both clean power in 2030 and net zero by 2050, building on those within this Action Plan. The Roadmap will also provide a framework for planning and tracking the delivery of these key flexibility measures. As part of this, DESNZ, working with Ofgem and NESO where appropriate, will review current measures to assess where further changes or new policies are needed to support Clean Power 2030 and net zero by 2050.
Digital-isation	There is insufficient visibility of – or sharing of data on – distributed energy including local generation and flexible assets on the grid, hampering the integration of these assets and potential for their utilisation within flexibility markets.	**DESNZ** and **Ofgem** will work with **NESO** to set out measures in the Low Carbon Flexibility Roadmap in 2025 to enable greater visibility of distributed energy assets to unlock further flexibility and assist with network planning.
Innovation support	Further innovation is needed to accelerate the deployment of short-duration flexibility for 2030, for example to reduce the costs of bidirectional chargers for vehicle-to-grid and develop consumer-led flexibility interoperability standards.	Further innovation across **DESNZ** will ensure the flexibility innovation needed to facilitate clean power 2030 and net zero.

Electricity interconnection

Current installed capacity compared to the DESNZ 'Clean Power Capacity Range' in 2030 (GW)



Source: Table 1

Electricity interconnectors connect the transmission systems of two countries, enabling us to import and export electricity. At the end of 2023, Great Britain had 9.8 GW of interconnector capacity across 9 interconnectors, with a further 2 interconnectors (1.9 GW of capacity) in construction[101]. Based on both government and NESO modelling of clean power trajectories, we expect 12-14 GW of interconnector capacity by 2030 to deliver clean power. Interconnectors can bring a wide range of system and consumer benefits. Electricity interconnectors support security of supply by enabling access to more diverse generation over a wider geographic area. They also provide system flexibility by helping the system rapidly respond to changes in supply and demand. This means that, when we generate more electricity than we need, a strong interconnector system will allow us to export the excess electricity, thus contributing towards the clean energy superpower role of the United Kingdom.

Finally, interconnectors contribute to European-wide decarbonisation, as they can allow for more efficient use of intermittent renewables between connected countries.

The table overleaf sets out the key hurdles to maximising the growth of electricity interconnection by 2030. There may be additional, project specific hurdles that DESNZ will work with developers to action, as appropriate. Additionally, the Supply Chain and Workforce section of this document details how the UK will use our established manufacturing capacity to support the delivery of Clean Power 2030.

[101] Ofgem (2024), *'Interconnectors'* (viewed in December 2024).

Table 6: Electricity interconnection hurdles and actions

Area	Hurdle	Action
Grid connections and planning	The grid connection and planning processes mean that interconnectors awarded cap and floor agreements by Ofgem in the third cap and floor window / Offshore Hybrid Asset pilot a) might have been awarded a connection agreement for later than 2030, or b) might not be operational by 2030.	**NESO** and **Ofgem** will ensure that the grid connection reforms support the interconnection capacity required to meet the 2030 clean power capacity ranges, and **MHCLG** will consider how planning reforms can support this capacity for the 2030 clean power capacity ranges.
HVDC supply chains	The supply chains for HVDC cables are tight and present risks to interconnector projects with cap and floor agreements from the third cap and floor window / Offshore Hybrid Asset pilot not being operational by 2030.	**DESNZ** is exploring a range of options to mitigate supply chain challenges including measures to develop the domestic supply chain.

Next steps

The implementation of the actions in this chapter should make a strong impact in helping to achieve the benefits for consumers made possible by clean power in 2030, particularly by rapidly improving market access and utilisation for battery storage, increasing opportunities for consumer-led flexibility, implementing market-wide half-hourly settlement, and significantly reducing grid connection and planning timelines for grid-scale batteries and interconnectors.

The government will continue to work with Ofgem, NESO and industry to review the need for further actions and we will include these new actions within the Low Carbon Flexibility Roadmap that we will publish in 2025. Success will involve evidence that investments and operational assets are ramping up short-duration flexibility capacity in line with the capacity ranges for Clean Power 2030 that are set out in this Action Plan. The Clean Power 2030 Unit will be closely monitoring this.

Delivery of this short-duration capacity for clean power in 2030 will also significantly help with meeting carbon budget and net zero requirements[102], enabling the power sector to accommodate the significant increase in future electricity demand that will result from the electrification of other sectors such as transport, heat and some parts of industry.

[102] BEIS (2021), *'Smart Systems and Flexibility Plan'* (viewed in December 2024).

Long-duration flexibility

Summary

Long-duration flexible technologies can add significant value to the system and can provide a secure supply of electricity during extended periods of low renewables output. There are a number of innovative low carbon technologies such as power carbon capture, usage and storage (CCUS), hydrogen to power (H2P) and forms of long-duration electricity storage (LDES), capable of replicating the role of unabated gas. We estimate between 40-50 GW[103] of dispatchable and long-duration flexible capacity could be needed by 2030. Whilst we will continue to rely on unabated gas to ensure security of supply, we will drive the deployment of these low carbon technologies, cementing our position as a world leader at the cutting edge of the clean energy revolution.

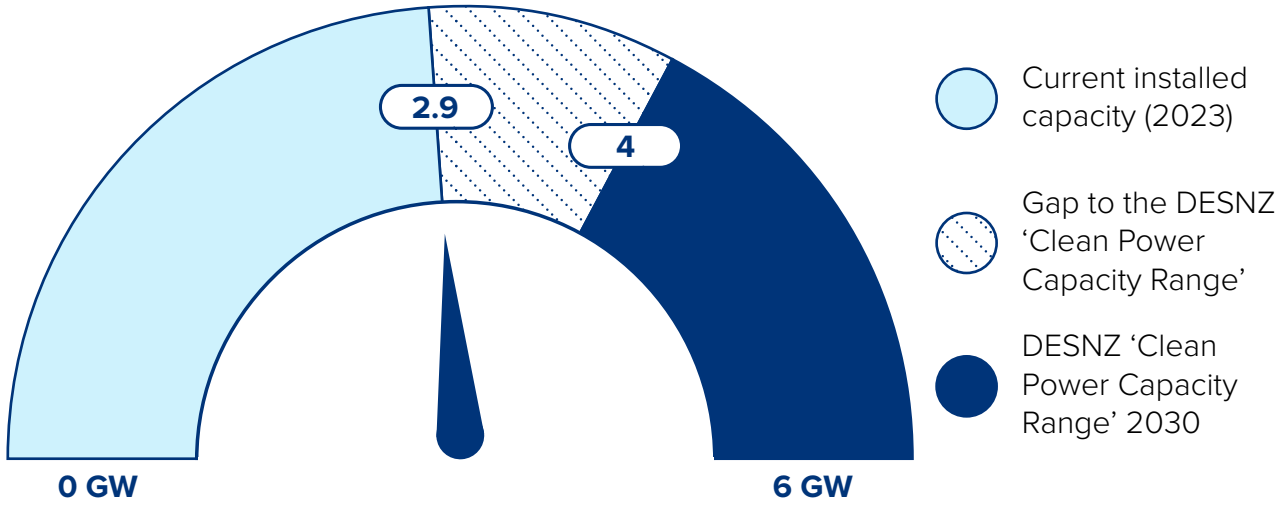
The following interventions will support the deployment of long-duration flexible technologies in driving towards Clean Power 2030:

[103] The sum of low carbon dispatchable power, unabated gas, and LDES capacities in Table 1, rounded to the nearest 5 GW. Dispatchable technologies are ones which combust fuel to produce electricity and, by varying the rate at which fuel is burned, can respond to meet the needs of the grid with varying levels of flexibility.

- **We have announced a groundbreaking deal with Net Zero Teesside**, our first power CCUS project – delivering secure, low carbon power from 2028.
- **We are developing a hydrogen to power business model**[104] to de-risk investment and bring forward hydrogen to power capacity at an accelerated rate. We intend to provide further market engagement on the design of the business model in Spring 2025.
- **Ofgem will introduce the cap and floor scheme** to support investment in long-duration electricity storage, aiming to open the scheme to applications in Q2 2025.

Long-duration electricity storage

Current installed capacity compared to the DESNZ 'Clean Power Capacity Range' in 2030 (GW)

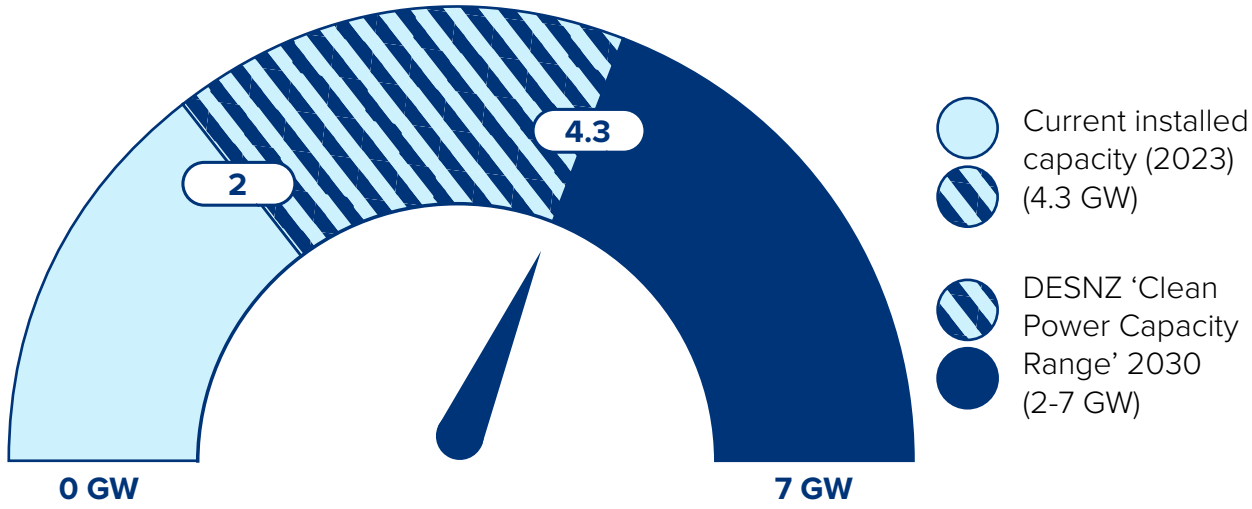


Source: Table 1

[104] DESNZ (2024), '*Hydrogen to power: market intervention need and design*' (viewed in December 2024).

Low Carbon Dispatchable Power

Current installed capacity compared to the DESNZ 'Clean Power Capacity Range' in 2030 (GW)



Source: Table 1

Note: Low carbon dispatchable power includes biomass, power BECCS, gas CCUS and hydrogen to power. Dispatchable technologies are ones which combust fuel to produce electricity and, by varying the rate at which fuel is burned, can respond to meet the needs of the grid with varying levels of flexibility.

The challenge

Long-duration flexible technologies can adjust their output quickly to match supply with demand and can provide a reliable source of electricity for managing daily and seasonal demand peaks and longer periods of low renewable output (such as 'Dunkelflaute' conditions). Today, most of that flexibility is provided by around 35 GW of unabated gas and around 3 GW of pumped storage hydro[105], currently the only mature technologies capable of providing this flexibility.

Between 40-50 GW[106] of dispatchable long-duration flexible capacity could be needed by 2030. Whilst we expect the majority of this capacity will come from unabated gas, it will be running less frequently as we support the deployment of low carbon alternatives and approach 2030. In this chapter we focus on driving forward the delivery of the low carbon long-duration technologies, such as power CCUS, H2P and LDES, that are closest to maturity and could play a key role in a 2030 system. Biomass and BECCS are covered in more detail in the Renewable and nuclear project delivery chapter.

Deploying new low carbon long-duration flexible technologies can add significant value to the system as they can replicate the role of unabated gas currently plays, minimise system costs and reduce delivery pressures on other technologies, such as offshore wind. NESO have noted in their report that even relatively small levels of operational capacity materially reduce the overall challenge of the rest of the programme.

[105] DESNZ (2024), *'DUKES'* (viewed in December 2024).
[106] The sum of low carbon dispatchable power, unabated gas, and LDES capacities in Table 1, rounded to the nearest 5 GW. Dispatchable technologies are ones which combust fuel to produce electricity and, by varying the rate at which fuel is burned, can respond to meet the needs of the grid with varying levels of flexibility.

Power CCUS and hydrogen to power plants in Great Britain present a great opportunity for low carbon long-duration flexibility. We will also need to scale up the deployment of pumped hydro storage and drive forward innovation in more nascent LDES technologies.

Government is committed to the transition away from unabated gas whilst maintaining security of supply.

Taking action

Power carbon capture, usage and storage

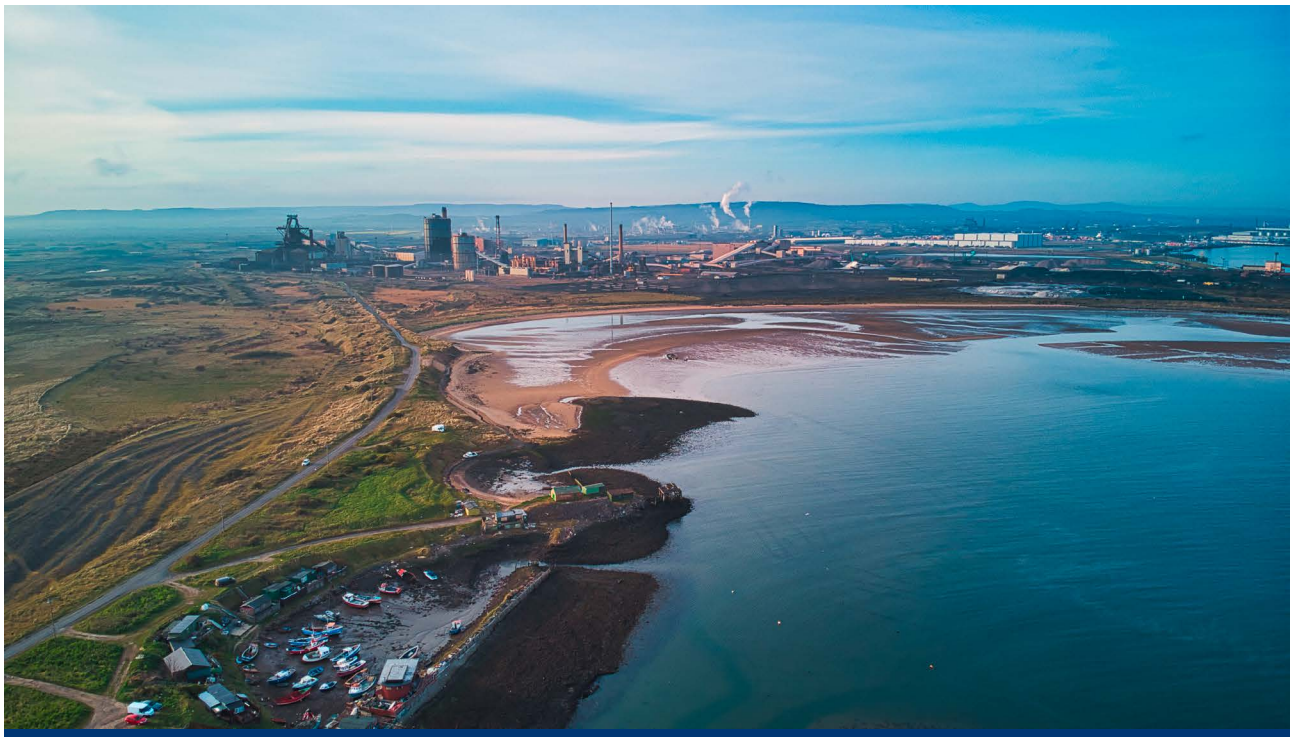
Power CCUS, which is natural gas fuelled generation equipped with carbon capture technology, can provide non-weather-dependent, dispatchable low carbon generation that will support a renewables-based 2030 system. The Power CCUS business model, known as the Dispatchable Power Agreement (DPA), has been designed to ensure that Power CCUS plays a valuable mid-merit role, dispatching behind renewables, but ahead of unabated gas generation. The DPA will enable both new build projects and the retrofit of existing plants which will be key to enabling the transition away from unabated gas.

NESO have suggested that we could need to deploy up to 2.7GW of power CCUS and H2P by 2030 – see Table 1[107]. The importance of power CCUS beyond 2030 is also highlighted by the Climate Change Committee in their Carbon Budget 6 report where they model that power CCUS would provide 30TWh of generation a year by 2035 as part of the balanced pathway scenario[108].

As well as supporting the clean power mission, CCUS more broadly is vital to decarbonising a range of industrial sectors and the deployment of negative emission projects. It will enable a just transition for industrial regions by decarbonising in a way that drives growth in the UK, with CCUS projected to support up to 50,000 jobs as the sector matures in the 2030s and adds £5 billion of value annually by 2050[109]. Carbon capture is a safe technology, and geological CO_2 storage is a proven technology that has been in operation globally for decades. In the UK we have the technical expertise and a geographical and geological advantage with a shallow seabed and 78 billion tonnes of theoretical CO_2 storage capacity distributed across the UK continental shelf[110].

Additionally, the proximity of emission centres to the geological storage sites provides the right opportunity for these industrial clusters to decarbonise through the CCUS cluster approach that we have established. This approach involves the strategic selection of industrial clusters to maximise the number of capture projects and is designed to fairly distribute cost and enhance the cost efficiency of transport and storage infrastructure, benefiting a larger number of capture projects. The deployment of CCUS in the UK will pioneer technical advancements and a world-leading regulatory framework to help Britain benefit from the opportunities of first mover advantage.

[107] NESO (2024), *'Clean Power 2030'* (viewed in December 2024).
[108] CCC (2020), *'The Sixth Carbon Budget'* (viewed in December 2024).
[109] DESNZ (2019), *'Energy Innovation Needs Assessments'* (viewed in December 2024).
[110] Energy Technologies Institute (ETI) (2016), *'Strategic UK CCS Storage Appraisal'* (viewed in December 2024).



Net Zero Teesside

The world's first at scale gas power plant with carbon capture.

Groundbreaking deals announced on 10th December 2024 mean construction of the UK's new carbon capture industry will start in 2025.

Contracts were signed with Net Zero Teesside, the world's first at scale gas power plant with carbon capture, supplying up to one million homes with low carbon, secure power from 2028.

Combined with Northern Endurance Partnership (NEP), the supporting CO2 Transport and Storage project, the East Coast Cluster will capture and store carbon emissions from the region. This investment will directly support an average of 2,000 jobs in the North-East, marking the latest milestone in the government's mission to reignite its industrial heartlands, tackle the climate crisis and turbocharge growth for decades to come. It follows the government's £21.7 billion funding commitment to ensuring the UK's vision for CCUS becomes a reality in the UK.

By signing the first Dispatchable Power Agreement (DPA) with industry, the government is proving that this world-leading CCUS business model – developed over years in collaboration with stakeholders – is delivering real results by attracting investment and getting this game-changing technology off the ground. The DPA has been specifically designed to support projects like Net Zero Teesside to dispatch low carbon power ahead of unabated gas but not displace renewables.

The DPA showcases the UK's ability to create innovative solutions to address the challenges of achieving net zero and this milestone is a testament to the collaborative efforts of industry and government, reflecting our shared vision of a decarbonised power sector. This is a landmark step forward in our plan for Clean Power 2030.

HyNet and beyond

In addition to Net Zero Teesside in the East Coast Cluster, there is a strong pipeline of potential Power CCUS projects in development across the UK which can deploy and play a key role in a decarbonised power system[111]. In north-west England and north Wales, government is working with industry to deliver the HyNet Cluster, which aims to store up to 4.5 million tonnes of CO_2 per year by 2030[112]. The HyNet CO_2 Transport and Storage (T&S) network will enable the safe onward transport of CO_2 from CCUS projects to permanent undersea storage. There is a power CCUS project which, among other CCUS projects, is aiming to connect to HyNet by 2030.

In addition to the East Coast Cluster and HyNet Cluster, the UK has an exciting pipeline of further CCUS clusters at a mature stage of development. These include Acorn in north east Scotland and Viking in the Humber which contain power CCUS projects at the heart of their plans.

Upstream emissions

We are clear that future emissions from the production of natural gas will need to reduce in the UK and across the world. Domestically, DESNZ is working with industry to decarbonise upstream emissions of natural gas production. The North Sea Transition Authority (NSTA) estimates that between 2018 and 2023, operators have reduced flaring by 49% and overall emissions from domestic upstream oil and gas production have decreased by approximately 28%. Through the North Sea Transition Deal, industry is committed to extend the overall emissions reduction to 50% from 2018 to 2030[113].

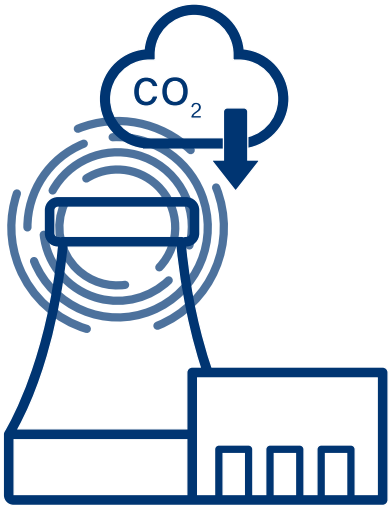
Internationally, we are also committed to the World Bank's zero routine flaring initiative which aims to eliminate the practice by 2030 for oil producing platforms. The UK is also a member of the Global Methane Pledge, to collectively reduce global methane emissions by at least 30% by 2030 compared to 2020 levels[114]. In addition, we are working with the US, EU and others to develop a framework to better measure, monitor, and report methane emissions from imported gas. We also share technical expertise and best practice internationally on reducing emissions in the energy sector.

Financing

CCUS was one of the five sectors which will benefit from the additional £5.8 billion allocated to the National Wealth Fund. This capital will be deployed by the National Wealth Fund to finance projects which are facing barriers to investment, helping to mobilise private finance into them.

CCUS for net zero

In the 2030s and as we accelerate to net zero, it is important industry and government enable the development of a self-sustaining UK CCUS sector that supports delivery of our Missions, jobs and reduces emissions, putting the UK at the forefront of global CCUS.



[111] Subject to meeting necessary planning and other regulatory approvals.
[112] Eni (2024), '*HyNet North West Project*' (viewed in December 2024).
[113] North Sea Transition Authority (2024), '*Emissions Monitoring Report 2024*' (viewed in December 2024).
[114] Global Methane Pledge (2024), '*Global Methane Pledge*' (viewed in November 2024).

Hydrogen to Power

Hydrogen to Power can play a key role in our electricity system at a range of scales and is the primary low carbon technology capable of providing low carbon inter-seasonal storage, whilst providing a decarbonisation pathway for unabated gas. Our analysis indicates H2P is economic at lower load factors (below 30%), enabling it to be cost effective in a clean power system where flexible load factors are expected to fall as renewable generation increases[115]. H2P faces two primary deployment barriers – increased investment risk and cost from being a first of a kind technology, and exposure to cross-chain risks from reliance on a nascent hydrogen value chain. There is a critical dependence on access to enabling grid-scale hydrogen infrastructure, such as new build transport and storage facilities, which typically have long lead-in times. Ensuring the deployment of hydrogen transport and storage infrastructure, alongside supporting H2P plants, will be critical in enabling delivery of H2P to deploy whilst also providing the infrastructure to support industrial decarbonisation through hydrogen.

Hydrogen to power business model

To accelerate deployment of H2P, government is implementing a H2P business model (H2PBM) to de-risk investment and mitigate our identified deployment barriers, as committed in the government's December 2024 response to the consultation on 'H2P need for and design of a market intervention'. We will deliver a H2PBM based on a Dispatchable Power Agreement style mechanism. To progress development of the H2PBM, we intend to publish a market engagement document in Spring 2025 outlining further detail on the proposed design of the H2PBM. We are establishing an H2P expert working group to support our policy development.

Hydrogen storage

Hydrogen storage will play a vital role in the hydrogen economy and the wider energy system. Storage is key for managing within day network balancing and providing security of supply to hydrogen off takers. Large-scale deployment of H2P will require access to geological hydrogen storage via hydrogen pipelines, to enable delivery of H2P plants.

Developers face barriers to investment including high costs, long lead-times, and uncertainty around how quickly demand for transport and storage will increase. This is why we are committed to designing, in 2025, new business models for hydrogen transport and storage infrastructure to address these barriers and unlock private investment. Public and private investment in transport and storage infrastructure will in turn unlock further private investment in the wider hydrogen economy, by helping to increase the geographical availability, reliability and cost-effectiveness of hydrogen supply.

The Energy Act 2023 provides the legislative framework that will underpin the delivery of the hydrogen transport and storage business models. We are currently progressing the design of the commercial models and the process for awarding them at pace.

Hydrogen production

Hydrogen production capacity is vital to increase the supply of the fuel for H2P plants and support is being provided through the Hydrogen Production Business Model. This provides hydrogen production projects with a route to market and we are already making progress, with the October announcement of £21.7 billion of available funding to

[115] DESNZ (2023), '*The Need for Government Intervention to Support Hydrogen to Power*' (viewed in December 2024).

launch the first CCUS projects including CCUS-enabled hydrogen[116].

Eleven electrolytic hydrogen production projects were selected for contract award in the first Hydrogen Allocation Round (HAR1), and we expect these projects to be operational by 2026. We intend to publish a shortlist of HAR2 projects in due course and we are currently developing our approach to future HARs, including HAR3, and we will invite feedback through a market engagement exercise in due course.

We intend to publish the next edition of the Hydrogen Strategy Update to the Market shortly.

Financing

Hydrogen was one of the five sectors which will benefit from the additional £5.8 billion allocated to the National Wealth Fund. This capital will be deployed by the National Wealth Fund to finance projects which are facing barriers to investment, helping to mobilise private finance into them.

Long-duration electricity storage

Long-duration electricity storage (LDES) is a key enabler to a secure, cost-effective and low carbon energy system. LDES can help to decarbonise the system by supplying electricity continuously from several hours to up to several days without recharge, replacing flexibility from unabated gas and helping to alleviate constraints on the grid. It includes pumped storage hydro, a long-established and mature technology, and other more recently developed technologies such as liquid air energy storage. As well as providing electricity during protracted periods of low wind/sun, LDES technologies also provide a range of essential grid services such as inertia, voltage support, short circuit and demand response.

There is currently 3 GW of pumped storage hydro capacity connected to the grid[117], but long build times combined with revenue uncertainty have inhibited investment in LDES development over the last 40 years[118]. This has been the greatest challenge to LDES development, which this government has now addressed through announcing our decision to introduce a cap and floor investment support scheme with Ofgem acting as regulator and investment support scheme delivery body[119].

The Clean Power Capacity Range in Table 1 suggests that we could need 4-6 GW of LDES in total by 2030[120]. The actions below will help bring forward more LDES onto the system.

[116] DESNZ (2024), *'Government reignites industrial heartlands 10 days out from the International Investment Summit'* (viewed in November 2024).
[117] LDES in Table 1.
[118] DESNZ (2024), *'Long-duration Electricity Storage Policy Framework Consultation'* (viewed in November 2024).
[119] DESNZ (2024), *'Consultation outcome: Long-duration electricity storage: proposals to enable investment'* (viewed in December 2024).
[120] NESO (2024), *'Clean Power 2030'* (viewed in December 2024).

Cap and floor scheme

Following government's decision in October 2024 to introduce a cap and floor investment support scheme for LDES:

- Ofgem will publish an open letter on specific aspects of the scheme where it would like further stakeholder input and will provide further information around cap and floor scheme implementation timings.
- In Q1 2025, DESNZ and Ofgem will publish a Technical Decision Document to provide clarity on outstanding areas of the cap and floor scheme design
- Ofgem expects to open the first cap and floor allocation round in Q2 2025 following publication of the Technical Decision Document
- NESO have agreed to provide advice on the range of LDES capacity that Ofgem should seek to provide cap and floor schemes for in the first allocation round, and support Ofgem in assessing projects that apply

Financing

Building on the two investments the National Wealth Fund has already made in LDES companies, it will continue to engage with LDES projects at Technology Readiness Level 7 and above – including those preparing to apply for the cap and floor – exploring financing solutions where there are barriers to private investment.

Capacity Market

The Capacity Market is the primary mechanism to secure capacity and ensure security of electricity supply in Great Britain. The scheme provides participants with revenue (£/MW), allocated through competitive auctions. This revenue is provided in exchange for the capacity being available at times of system stress. LDES projects, where meeting qualifying criteria, are eligible to and currently participate in the Capacity Market.

DESNZ will, ahead of the 2025 Capacity Market pre-qualification period in summer 2025, implement the Capacity Market policy proposals as outlined in its July 2024 and October 2024 responses to the 2023 Phase 2 Capacity Market consultation. Changes include increasing the build period extension available to support projects qualifying for the Capacity Market long stop mechanism. This will allow generators requesting an extension (at the point of application), to have up to 6 years in a T-4 Capacity Market agreement to come online (via a 24-month extension). We expect this specific change to be in place ahead of the auctions in early 2026. This will be an addition to the existing 12-month extension option.

Innovation

Innovation can make an important contribution to the deployment of LDES. More nascent technologies, such as liquid air energy storage, offering greater locational flexibility than pumped storage hydro, have quicker build times, and help to diversify the LDES technology portfolio. Approximately £100m of innovation funding has been provided over the last decade to support the advancement of many novel LDES technologies[121]. The current Net Zero Innovation Portfolio has funded novel technologies such as liquid air and flow battery energy storage, advancing them to demonstrator stage and catalysing investment in them, which has enabled these innovations to be viable options for low carbon flexible capacity by 2030 and beyond. Further innovation will ensure that

[121] Approximate cumulative innovation funding for LDES provided by the Department since 2014 from innovation funding programmes, including the Energy Innovation Programme and the Net Zero Innovation Portfolio.

a range of novel technologies develop and deploy at pace and scale.

Planning and grid connections

Government, Ofgem, NESO, and network companies can ensure grid connection reforms and acceleration of grid infrastructure delivery timelines that result in sufficient capacity (in line with 2030 clean power capacity ranges) of LDES projects connecting by 2030, including those that co-locate with renewables projects. We will work with the Ministry of Housing Communities and Local Government to consider how LDES, and its importance to clean power in 2030 and net zero, could be referenced in future planning reform.

In Scotland, responsibility for planning and consenting is devolved to the Scottish Government. Through their Fourth National Planning Framework (NPF4), the Scottish Government has placed climate and nature at the centre of their planning system and made clear their support for all forms of renewable, low-carbon and zero emission technologies, including transmission and distribution infrastructure. Potential impacts on communities and nature, including cumulative impacts, are important considerations in the decision-making process.

Unabated gas

As clean power substantially reduces the amount of electricity generated by gas-fired plants, unabated gas will change its role in the system. Under a clean power system, it will play a back-up role at specific times throughout the transition to clean power. This means retaining sufficient unabated gas capacity until well beyond 2030, when it can be safely replaced by low carbon technologies that can provide the amount of long-duration flexibility necessary to keep the system balanced at all times. We currently rely on ~35 GW of unabated gas on the system to provide long-duration flexible capacity[122]. This firm capacity is crucial for electricity security, and will be required as strategic back-up to respond to certain periods of high demand, even as we aim to reduce fossil generation (i.e. gas running hours) overall.

Existing assets

Retaining the existing gas fleet where possible is likely to be the most cost-effective means of meeting the capacity we need for gas to fulfil its strategic function in 2030. Current fleet intelligence suggests most existing gas assets will remain online until 2030, but we are also consulting on measures to make it easier for gas assets to stay in the Capacity Market and for plants to access multi-year Capacity Market agreements, encouraging investment in life extension of older plants.

Decarbonisation readiness

To provide the clarity investors need to make long-term decisions, we are introducing decarbonisation readiness requirements. This will ensure that new or substantially refurbishing combustion power plants in England, which submit their environmental permit application from 28th February 2026, must have a credible plan to decarbonise either through converting to hydrogen firing or through retrofitting carbon capture. Requiring developers to demonstrate the viability of their decarbonisation plan will ensure that the developers of new or substantially refurbishing combustion power plants have considered how they will access low carbon hydrogen or CO_2 storage in the future, and that land necessary to enable that decarbonisation has been set aside. This will support providing visibility to investors over which sites are well placed to decarbonise in future.

[122] NESO (2024), *'Clean Power 2030'* (viewed in December 2024).

Moreover, to help ensure that capacity coming forward before the implementation date consider their decarbonisation plans, we are placing an obligation on substantially refurbishing or new combustion power plants in England, participating in the 2026 Capacity Market auction to declare that they will comply with the Decarbonisation Readiness requirements.

We are complementing this with measures intended to enable gas assets tied into long term Capacity Market agreements to exit without penalty and transfer to the power CCUS Dispatchable Power Agreement, enabling conversion to low carbon through retrofitting carbon capture equipment. We are exploring additional routes for gas assets in the Capacity Market to decarbonise including the feasibility of gas assets exiting long term agreements to enable conversion to H2P through H2PBM support.

As low carbon flexible technologies become more established, unabated gas will increasingly move to a reserve role on the system, essentially called upon as a last resort to meet peak demand, and demand during long periods of low supply from variable sources. Maintaining this reserve generating capacity is important for reaching clean power by 2030. As set out in the market reform chapter, we are taking steps to reform the Capacity Market to ensure there is sufficient unabated gas capacity on the system to maintain security of electricity supply as it moves into this reserve role.

The reforms we are announcing to existing market frameworks are the best way to ensure that the necessary strategic reserve capacity of unabated gas generation remains on the system. The government's view is that a novel out-of-the-market mechanism to manage that reserve may have a role in the long-term phase-out of unabated gas capacity once its volume in the system has significantly reduced and long-duration low carbon flexible technologies have been deployed at scale.

Next steps

The actions outlined in this section will be critical to delivering a strong pipeline of low carbon long-duration flexible technologies and driving forward innovative and nascent technologies that can play an important role in delivering clean power. It also makes clear the important role that unabated gas will continue to play in a new back-up role to provide security of supply into the 2030s and beyond, whilst giving clarity for investors on the future routes to decarbonisation for these assets.

Supply chains and workforce

Summary

Lowering barriers to investment into resilient supply chains and workforce development is vital to ensuring we meet the demand for Clean Power 2030 and to capturing the benefits of this change for our economy. This is an opportunity to support UK growth by building domestic supply chains, growing the skilled workforce and spreading good jobs across the country. Government will support industry to secure the supply chains and skilled workforce they need by:

Giving developers greater route-to-market certainty so that they can plan and secure necessary supply chains and workforce, sooner.

Rapidly convening a new supply chains and workforce industry forum for key Clean Power 2030 sectors, including trade unions, to develop a deep understanding of system-level supply chain and workforce planning needs for Clean Power 2030 delivery, exploring bold solutions and devising targeted collective actions to ensure they are met.

Maximising domestic opportunities for clean energy supply chains through cross-economy work such as the UK's Industrial Strategy in Spring 2025, and clean power specific policy actions.

Exploring where international collaboration can support supply chains, including via trade agreements and international co-operation. The government is determined to work with other countries to diversify international supply chains.

Driving an increase in capacity of our domestic clean energy workforce to match the scale of the deployment challenge through our investment into clean energy sectors, and accelerating wider reforms led by the Office for Clean Energy Jobs, the Department for Education, and Skills England alongside targeted clean power offers, working closely with the devolved governments, industry, and trade unions.

Boosting awareness of clean energy job opportunities by publishing data on future clean energy workforce and skills needs, to ensure a common understanding of trends and challenges to inform action.

The challenge

Supply Chains

To deliver Clean Power 2030 we need secure, sustainable, competitive and reliable supply chains to provide the components and materials it requires. The UK will need to source more components by both powering up our domestic manufacturing and ensuring access and competitiveness in international markets. As we achieve this, we are committed to unlocking the growth benefits that come with scaling up deployment and manufacturing of clean energy technologies. Our ambition is to see a sustained increase in supply chain activity both up to 2030 and continuing out to 2050.

Domestically, the UK has established manufacturing capacity in some of the key technologies needed to deliver Clean Power 2030. We have strengths in offshore wind engineering services, cables, electrolysers and electrical equipment, as well as parts of the wind turbine generator and monopiles. We also have suppliers with expertise in both high-voltage alternating current and high-voltage direct current (HVDC) electrical systems and are aiming to build capacity in HVDC cables. The upcoming Industrial Strategy will look to attract investment in growth-driving sectors including clean energy industries, and work is being carried out to determine the key subsectors on which it will focus. More broadly, we are a world-leading investment location, with a strong pipeline of potential projects that could strengthen our base further, although we will always need to also buy inputs and finished components from the international market.

We have been working with industry to make an initial assessment of the industry procurement challenges that may be faced for Clean Power 2030, building on previous evidence produced in collaboration with Baringa and the Industrial Growth Plan[123,124]. This work has identified constraints across several key sectors, with supply chains close to full manufacturing capacity, long lead times for key components, and reliance on single international sources in places. Alongside these constraints, there are several cross-sectoral challenges associated with procuring components and delivering the resilient supply chains we need for Clean Power 2030:

- **Investment confidence for buying components and investing in domestic manufacturing.** Developers need greater certainty in the clean power deployment pathways and associated order books to secure supply chain components as early as possible, especially those with long lead times. In turn, this will give greater confidence to the supply chain to make investment decisions committing to basing or increasing future manufacturing capacity in the UK. We also know that UK supply chain companies need early, strategic engagement from developers to help develop and refine their product and service offerings to market needs.
- **International buying power.** There is growing global competition for clean energy supply chains, with competition for key components across different countries and sectors, which can result in prices being driven up. The UK will always be reliant on international supply chains to some extent: alongside stronger domestic supply chains, it is essential that UK developers have reliable access to and are able to compete in international markets for materials or components.
- **Logistical constraints.** On a sector-by-sector basis, there are specific issues that prevent or delay transport and deployment of supply chain components – most prominently in transmission networks, offshore and onshore wind, where ports, vessels, and abnormal load issues are acute.

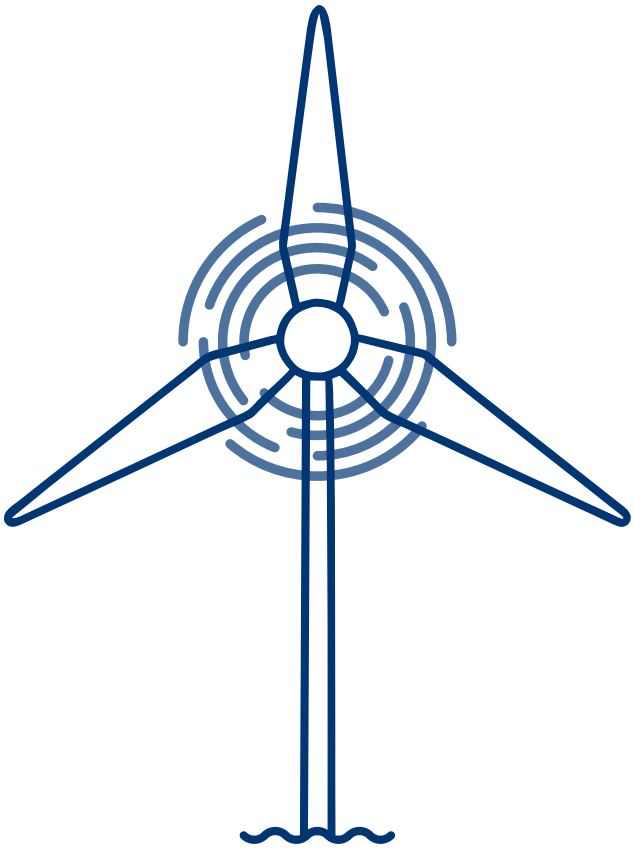
Workforce

The wider transition to net zero is expected to support hundreds of thousands of jobs, with Clean Power 2030 playing a key part in stimulating a wealth of new jobs and economic opportunities across the country[125]. These jobs will cross a range of skill levels and occupations, including technical engineers at levels 4–7 (and particularly 6+ including roles in civil, mechanical, electrical and design), along with electrical, welding, and mechanical trades at levels 2–7, and managerial roles including project and delivery managers at levels 4–7[126]. Many of these occupations are already in high demand across other sectors such as house building, construction, and wider manufacturing, and there also is a relatively high degree of transferable skills and knowledge between many carbon-intensive sectors and clean energy sectors, so wider coordination will be vital[127]. The 'Assessment of the Clean Energy Skills Challenge' evidence annex sets out further evidence on key clean energy occupations, gathered through a range of sources.

[123] Baringa (2024), *'UK renewables deployment supply chain readiness study'* (viewed in December 2024).
[124] RenewableUK, Offshore Wind Industry Council, TCE, & The Crown Estate Scotland (2024), *'Offshore Wind Industrial Growth Plan'* (viewed in December 2024).
[125] CCC (2023), *'A Net Zero Workforce'* (viewed in November 2024).
[126] UK Government, *'What qualification levels mean'* (viewed in December 2024).
[127] Experimental job advert analysis shown in figure 14 suggests there is relatively high transferability of skills from many carbon-intensive sectors to clean energy sectors, suggesting workers in carbon-intensive sectors are likely to have many of the skills needed across the Clean Power workforce. The challenge will be in enabling the reskilling of these workers, quickly.

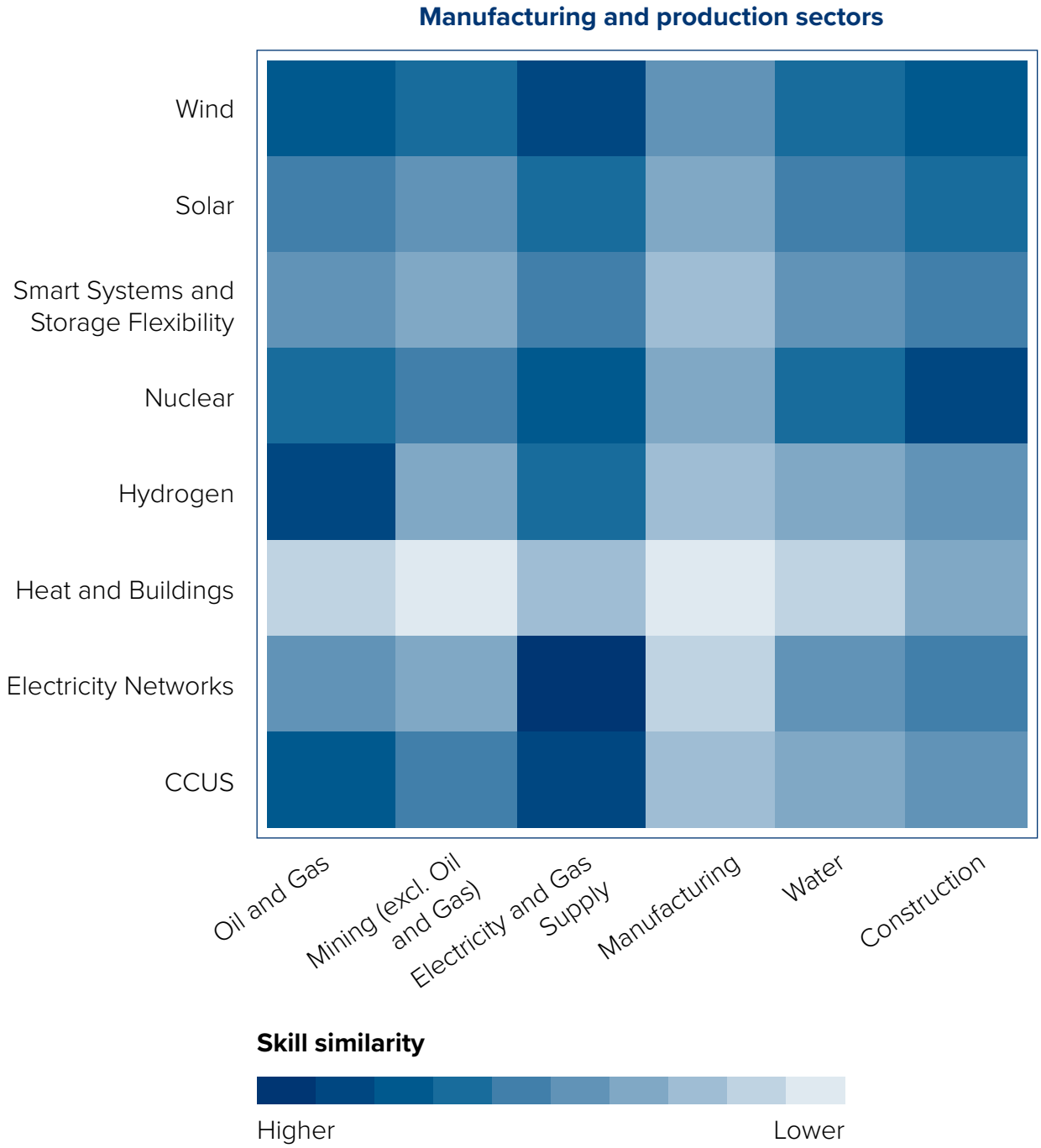
The challenge of finding employees with the right skills to take on these roles is already significant and expected to remain so. Through industry engagement, we have identified several key barriers to securing the Clean Power 2030 workforce:

- **Delivering future skills needs:** There are a number of gaps and key occupations that need to be better targeted in the post-16 skills system. Exacerbating the challenge is the high proportion of small and medium sized enterprises in clean energy sectors, some of whom have struggled to engage with the existing skills system. The UK also has an ageing workforce, and many individuals with the skills we need have left the workforce or are retiring soon.
- **Reskilling and transferability:** Most of the workforce we need for 2030 is already employed, so retraining, upskilling, and increasing the transferability of workers between sectors is essential.
- **Awareness, perceptions and accessibility of clean power jobs:** Lack of awareness of green sector jobs is exacerbating role shortages and putting future skills supply at risk. The Learning and Work Institute reported that 87% of 16–24-year-olds did not know what 'green skills' were when asked[128], reducing uptake of skills and training provision. In addition, we are not fully utilising the talent and ambitions of our workforce, for example, only 16.5% of the engineering workforce is female[129] and only 7% of the offshore wind workforce are from non-white backgrounds[130].
- **Regional pressures:** Several clean energy sectors, like offshore wind and carbon capture, are heavily clustered in specific regions of the UK. With limited data on skills needs, local skills providers are struggling to identify and tailor skills requirements around the rapidly evolving needs of their local areas. They can also find it challenging to respond to these needs given constraints on the teaching workforce and on the availability of facilities and equipment that support clean energy skills development.



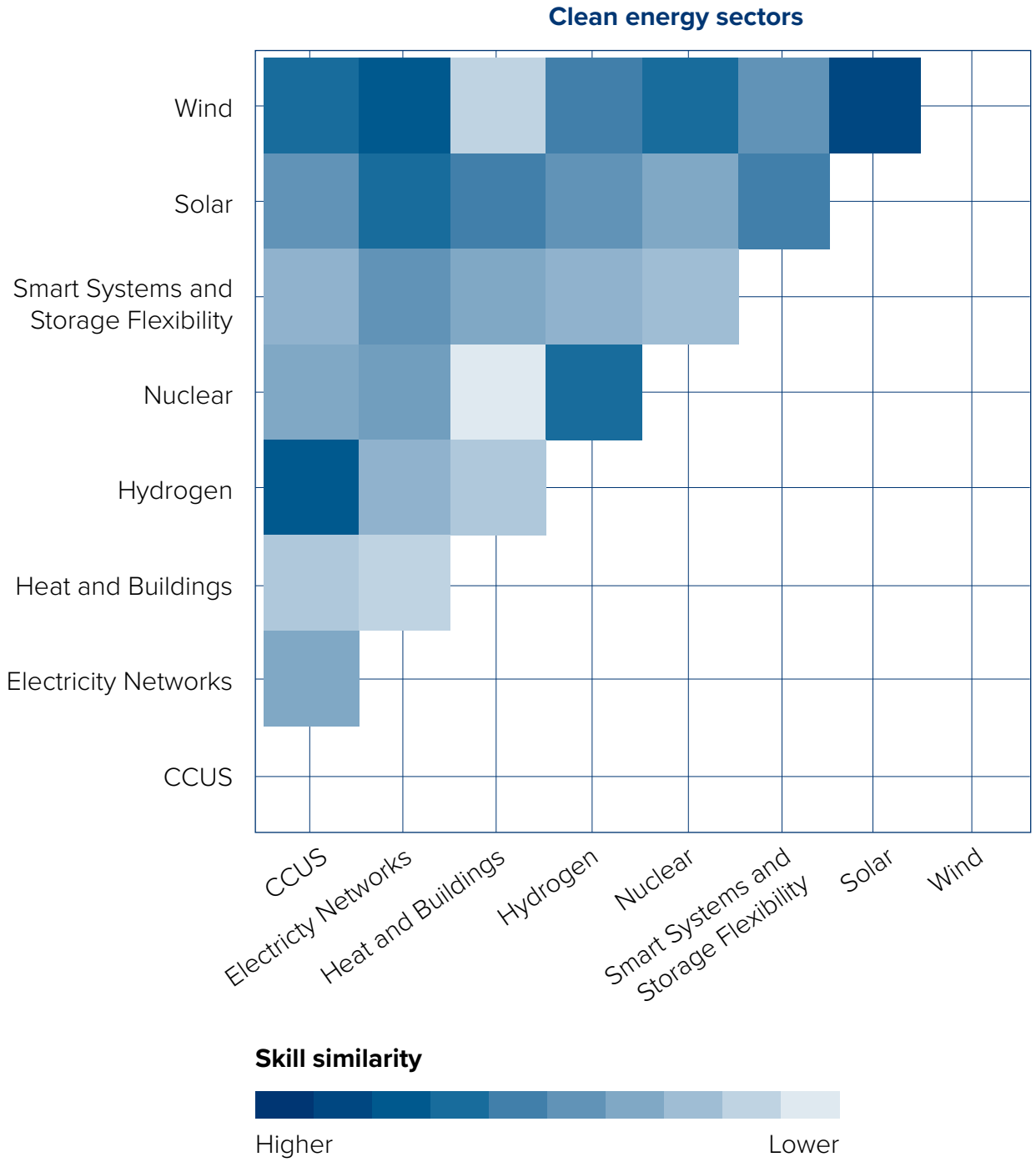
[128] Learning and Work Institute (2023), *'Skills for a net-zero economy: Insights from employers and young people'* (viewed in November 2024).
[129] EngineeringUK (2022), *'Women in Engineering: Trends in women in the engineering workforce between 2010 and 2021'* - Based on ONS Labour Force Survey data (viewed in December 2024).
[130] Offshore Wind Industry Council (2023), *'Offshore Wind Skills Intelligence Report'* – Based on job record data provided by employers (viewed in December 2024).

Figure 14: Similarity of skills demanded by online job adverts across several carbon-intensive and clean energy sectors



Note: 'Similarity' refers to cosine similarity, calculated using skills and their prominence across SIC groupings and clean energy sectors. The following traditional sectors are considered: Construction (Section F), Water (Section E), Electricity and Gas Supply (Section D), Manufacturing (Section C), Mining excl. Oil and Gas (SIC 05, 07, 08, 099), Oil and Gas (SIC 06, 091). There may be a small proportion of job adverts which fall into both groups being compared.

Source: DESNZ experimental analysis of Lightcast online job advertisement data (2024). The Clean Energy Job Adverts Analysis: Charts and Methodology document provides more detail on this analysis.



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Source: DESNZ experimental analysis of Lightcast online job advertisement data (2024). The Clean Energy Job Adverts Analysis: Charts and Methodology document provides more detail on this analysis.

Taking action

We will take action to address these barriers, through broad UK government industrial policy, English skills reforms and through targeted Clean Power 2030 initiatives. Similar approaches are being taken across the devolved governments, such as those outlined in the Scottish Green Industrial Strategy,[131] the Welsh Economic Mission[132] and the Northern Ireland Executive's Path to Net Zero Energy[133]. We want to give developers of clean power infrastructure the best chance of securing the supply chains and workforce they need to deliver Clean Power 2030, and we are committed to delivering Clean Power by 2030 in such a way that retains value for money and balances cost considerations with delivery.

This starts with giving developers greater clarity and certainty over their routes to market, to enable them to plan and mobilise the supply chains and workforce they need to deliver new generation. This will help give forward sight to supply chain companies to prepare and have capacity to supply clean power infrastructure projects. We have aimed to do this elsewhere in this plan, particularly in sections covering market reform, Contracts for Difference reform for upcoming allocation rounds, proposed changes to planning and consenting, and connections queue changes. For network companies, greater flexibility to secure supplier capacity earlier and for the longer term will be given primarily through the launch of Ofgem's Advanced Procurement Mechanism[134].

The Clean Power 2030 Unit, in collaboration with the Office for Clean Energy Jobs, will convene key stakeholders from Clean Power 2030 sectors in a new industry forum in early 2025. This will be a collaborative vehicle for proactive supply chain and workforce planning. Further information on this forum is included in the government's approach to delivering Clean Power 2030 chapter as a case study for how we will drive delivery through a new, mission-focused approach.

Alongside the work of the forum to develop collective actions for Clean Power 2030 delivery, UK government has a further role in:

- **Maximising domestic opportunities for clean energy supply chains** through cross-economy work such as the UK's Industrial Strategy in Spring 2025, and clean power specific policy actions.
- **Exploring where international collaboration can support supply chains,** including via trade agreements and international co-operation. The government is determined to work with other countries to diversify international supply chains.
- **Driving an increase in capacity of our domestic clean energy workforce to match the scale of the deployment challenge** through our investment into clean energy sectors, such as the Clean Industry Bonus and Great British Energy, and accelerating wider reforms led by the Office for Clean Energy Jobs, the Department for Education, and Skills England alongside targeted clean power offers, working closely with the devolved governments, industry and trade unions.

[131] Scottish Government (2024), *'Green Industrial Strategy'* (viewed in December 2024).
[132] Welsh Government (2023), *'Economic mission: priorities for a stronger economy'* (viewed in December 2024).
[133] Northern Irish Executive (2021) *'Path to Net Zero Energy'* (viewed in December 2024)
[134] Ofgem (2024), *'Electricity Transmission Advanced Procurement Mechanism Consultation'* (viewed in December 2024).

- **Boosting awareness of clean energy job opportunities by publishing data on future clean energy workforce and skills needs**, to ensure a common understanding of trends and challenges to inform action.

Maximising domestic opportunities for clean energy supply chains

A range of work is already underway in government to support cross-economy development of domestic supply chains. **In spring 2025, we will publish an Industrial Strategy including a clean energy sector plan**. Government's approach to stimulating investment and activity in growth-driving sectors will be set out in this upcoming Industrial Strategy, which we will continue to actively shape to maximise its benefits for clean power industries. The strategy will outline government's next steps to securing growth opportunities in these industries, and a clear approach to enabling sectors to overcome barriers to growth and investment, including in supply chains. A new **supply chains taskforce** will assess where supply chains critical to the UK's economic security and resilience are vulnerable – focussing in the first instance on supporting the development and delivery of the Industrial Strategy.

In addition, we are taking action to focus investment into boosting our supply chain capacity and create pathways for efficient procurement processes:

- **Delivering the new Contracts for Difference (CfD) Clean Industry Bonus**. This initiative allows clean energy developers in fixed and floating offshore wind to access additional CfD revenue for investments in manufacturing in our coastal and energy communities and cleaner, more sustainable supply chains.
- **Consulting on targeted reforms to the CfD mechanism for upcoming allocation rounds**, including improving transparency and predictability in the timing and scale of future CfD allocation rounds, which in turn can support increased investment in clean power supply chains. Further detail on these reforms is included in the Renewable and Nuclear Project Delivery chapter.
- **Delivering the Floating Offshore Wind Manufacturing Investment Scheme** (FLOWMIS) which was set up to provide grant funding to support the development of port facilities for large-scale floating offshore wind deployment. The Port of Cromarty Firth and Port Talbot have been placed on the FLOWMIS primary list, meaning they have been taken forward for detailed due diligence, subsidy control assessment and negotiation of grant terms. Further detail on the role of floating offshore wind is included in the Renewable and Nuclear Project Delivery chapter.
- **Mobilising government investment into the clean power sector** via the National Wealth Fund and Great British Energy. At least £5.8 billion of the National Wealth Fund's capital will focus on five other sectors relevant to clean power: green hydrogen, carbon capture, ports, gigafactories and green steel. £8.3 billion over the course of this Parliament has also been committed to the newly created Great British Energy, which will work in lockstep with the National Wealth Fund. It will work to support the growth of clean power supply chains across the UK, ensuring the benefits of these are widely distributed.
- **Supporting Ofgem's development of the Electricity Networks Advanced Procurement Mechanism** to be launched in early 2025 with the aims of providing greater flexibility for Transmission Owners to secure supplier capacity and to bulk procure multiple factory slots across a portfolio of projects ahead of need.

Exploring where international collaboration can support supply chains

We recognise that, though it is crucial to build domestic capacity, some of our supply chain needs will be met by the global rather than the domestic market. Where this is necessary, we want to give developers the best possible opportunity to secure what they need. We will do this through:

- **Collaborating with international partners** through international initiatives such as the Global Clean Power Alliance and other bilateral and multilateral initiatives, to diversify and strengthen supply chains. This has the potential to support new sources for critical clean power components, address bottlenecks and reduce costs.
- **Exploring international solutions to ensure the UK is able to secure the critical goods it needs** for the energy transition and explore international trade frameworks and institutions that can support the transition to net zero.

Driving the increase in capacity of our domestic clean energy workforce

Wider reform of the skills and employment system are underway across government to shape the domestic workforce and support the delivery of Clean Power by 2030. The skills and expertise of workers from the oil and gas will be central to the success of our Clean Energy Mission. There is a huge opportunity for re-skilling and transferability of skills of the oil and gas workforce across the economy. As skills policy is devolved, we will commit to continue our ongoing dialogue and collaboration with our counterparts in the devolved governments to ensure a coordinated and joined-up approach.

The Scottish Government published the Green Industrial Strategy in September 2024[135]. This outlines that the availability of high quality, appropriately skilled and ambitious people is critical to the willingness of a business to start, scale and invest. Significant work is progressing to reform the Scottish education and skills system so that it is more responsive to economic needs and ambitions. The Scottish Government will continue to invest in that system and the infrastructure that supports it, including for example, schools, colleges, universities, apprenticeships and our Innovation Centres, to enable the transition to net zero as well as broader ambitions.

The Welsh Government has published the Stronger, Fairer, Greener Wales: Net Zero Skill Action Plan[136], to provide practical steps towards understanding where and how skills needs will change over time and indicate how the Welsh Government will support this transition. Other planned Welsh initiatives include the publication of Clean Energy Sectors Skills Roadmaps, an Energy Sector Deal, supporting the Heat Strategy for Wales to advance decarbonisation, developing a new renewable energy apprenticeship framework and fostering industry collaboration to enhance supply chain opportunities.

The Northern Ireland Executive is also looking to influence and shape developments in green skills and has facilitated an industry-led Green Skills Action Plan. The Green Skills Action Plan initially focusses on the following three areas: large-scale energy production; infrastructure; and domestic low carbon technologies and energy efficiency to ensure that courses and apprenticeships are in place to provide the skills needed for the energy transition.

[135] Scottish Government (2024), *'Green Industrial Strategy'* (viewed in December 2024).
[136] Welsh Government (2023), *'Stronger, Fairer, Greener Wales: Net Zero Skill Action Plan'* (viewed in December 2024).

Ongoing UK government work includes:

- **Setting up The Office for Clean Energy Jobs,** which has been created to focus on ensuring we have the skilled workforce in core energy and net zero sectors critical to meeting Clean Power 2030. It will focus on supporting regions transitioning from carbon-intensive industries to clean energy sectors, ensuring clean energy jobs are high quality, with fair pay, favourable terms and good working conditions, and increasing diversity in the clean energy workforce. It will engage across the energy sector, trade unions and industry to deliver on this.

- **Designing a pilot scheme to support regional skills interventions** that will help transition the UK workforce from carbon-intensive sectors to clean energy sectors. This will be achieved by identifying and addressing skills gaps and challenges through targeted interventions trials on a regional basis. Interventions could include local skills and workforce mapping, career transition advisors, funding for direct training provisions.

- **Setting up Skills England to provide an authoritative assessment of national and regional skills needs**; work with Combined Authorities to ensure these are met; align a comprehensive suite of apprenticeships, training and technical qualifications with skills gaps; and advise on a new growth and skills offer. DESNZ will work with DfE and Skills England, together with the devolved governments, on early reform priorities to ensure that policy implementation begins as soon as possible to have the greatest impact on Clean Power 2030. The government will also evolve the apprenticeships offer into a more flexible growth and skills offer, delivering greater flexibility for learners and employers, aligned to the Industrial Strategy, creating routes into good, skilled jobs in growing industries such as clean energy. DESNZ will work with DfE, Skills England, and the sector to inform the offer. DESNZ will also work with DfE on transforming further education colleges into specialist Technical Excellence Colleges and on ways to enhance the further education workforce in clean energy and related sectors. The Curriculum and Assessment Review closed its call for evidence recently, and many clean energy industry bodies provided information.

- **Taking forward the 'Get Britain Working' White Paper.** This sets out plans for reforms to employment support to tackle economic inactivity, such as the Youth Guarantee, a new jobs and careers service to support more people into work and help them get on in work, and locally led Get Britain Working Plans for areas across England. DESNZ, DWP and DfE will work together to develop proposals for how the specific reforms mentioned within the White Paper will be implemented to support delivery of the workforce needed for Clean Power 2030.

In addition to this cross-economy work, we are taking the following clean power specific action to secure the 2030 workforce demand:

- **Exploring targeted skill interventions to reskill and upskill workers across the economy**, including identifying the regions that will be most impacted by the transition to clean energy. As of October 2024, DESNZ has come onboard as a strategic partner of the Skills Passport project. The passport is an industry led initiative overseen by Renewable UK and Offshore Energy UK and supported by the UK and Scottish Governments which will align standards, recognise transferable skills and qualifications and map out career pathways for suitable roles. This new digital tool for workers is set to be piloted by January 2025.

- **Developing ways to support access to training schemes in key clean power sectors needed for 2030**. Government is developing several new economic and investment policies which will crowd investment into the sector and create future potential opportunities to channel funding into skills provisions and training.

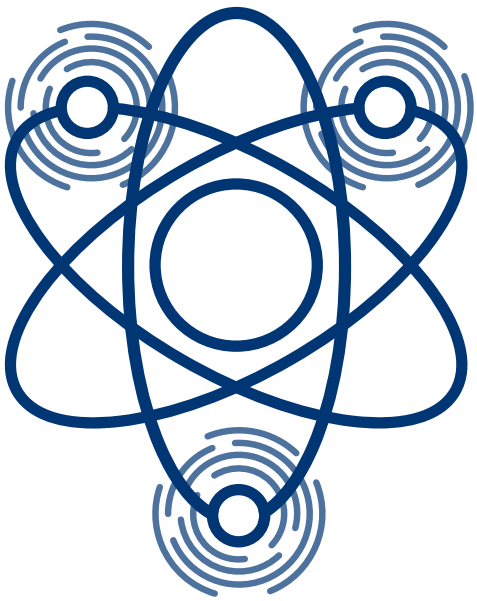
Boosting awareness of clean energy job opportunities

Ensuring an improved uptake of clean energy upskilling and reskilling offers will be essential, we will do this by establishing a common understanding of the barriers and collaborating with industry to overcome them. We will do this by:

- **Publishing the 'Assessment of the Clean Energy Skills Challenge' evidence annex alongside this Action Plan**, comprising data gathered across government, industry and company leaders, academics and further education representatives. This evidence is based on previous 2035 targets. However, the key near-term occupation shortages and workforce challenges sectors are expecting to face are anticipated to be largely similar. This evidence will be used as a basis for government, industry, and other key partners to better understand the 2030 workforce requirements and support targeted skills planning with confidence.
- **Exploring public awareness campaign options**, working between government and industry to see how we can coordinate messaging promoting the opportunities from clean energy jobs, help employees and employers navigate the skills landscape, and improve diversity in the clean energy workforce.

Next steps

- The first meeting of the new collaborative forum will take place in early 2025, convening key partners across private and public sectors to work collaboratively on supply chain and workforce planning.
- Our new, modern, Industrial Strategy 'Invest 2035', including a sector plan for clean energy industries, will be published in Spring 2025, setting out the government's approach to growth opportunities in clean energy industries across both supply chains and skills.
- We will deliver an updated carbon budget delivery plan in due course to the end of Carbon Budget 6 in 2037 with full detail of policy packages for all the sectors. This will provide a long-term line of sight, outlining the policies and proposals needed to deliver carbon budgets 4-6 and the Nationally Determined Contributions in 2030 and 2035 on a pathway to net zero.
- Government is developing a new Trade Strategy which will support the energy transition in alignment with Clean Power 2030, and ensure resilient global supply chains.



Taking us to 2030: Our approach to delivery

Delivery of large-scale transitions is nothing new for the energy sector, but the challenge of achieving clean power by 2030 is substantial. The Clean Power 2030 Action Plan defines the UK government's role in the clean energy transition. Government will work with industry to unlock barriers and will take an innovative approach. Additionally, it is important that government looks at a clean power system beyond 2030, where demand is expected to increase.

Leveraging the UK's industrial expertise

Clean Power 2030 needs a large amount of infrastructure to be delivered in just a few years, almost all of which will be delvered by private companies – including making key components, designing and developing projects, installing infrastructure, operating power generation plants, and financing new ventures.

All these companies are key to successful delivery of Clean Power 2030, and the UK is fortunate in having many people with a great deal of practical experience and knowledge in all these areas. The Clean Power 2030 Unit draws together a mix of skills from within the Civil Service and industry expertise, ensuring the right insight and expertise is available to support delivery.

The Clean Power 2030 Unit itself is underpinned by an advisory commission made up of 8 leading figures from across industry and academia who provide insight and advice on all aspects of its work.

The Clean Power 2030 Unit is also committed to working closely with those involved in practical delivery. The engineering, commercial, market, regulatory and policy landscape is complex, and we will need deep skills in all these areas combined with an ability to engage all parties to cut through issues quickly, together with creating and sustaining a mindset of collaborative endeavour across the industry.

To create the Action Plan, experts from government and the clean power sector explored policy approaches and assessed their deliverability. We believe the actions in this plan define the necessary policy landscape for successful delivery of Clean Power 2030, with a clear statement of intent and potential route to Clean Power 2030. However, we recognise that this is just the start, and the coming years will see a complex programme of activity, relying on the work of a wide range of businesses, many parts of government at central, regional and local level, the third sector, and individuals. We are committed to working hand-in-hand with industry, to provide both direction and support to deliver our common goal. The work of the Vaccines Task Force during the pandemic demonstrated what can be achieved when tight focus, strong direction, and full collaboration come together.

Tracking and supporting delivery of the system as a whole

A key role of the Clean Power 2030 Unit is to build and maintain a comprehensive view of the power infrastructure that is currently in various stages of development and delivery, and of the wider enablers across the electricity system, to understand what is likely to be delivered by when, where challenges may be emerging, and early warning signs for these, and what actions can be taken to keep key investments on track.

The Unit will take a whole-system approach, tracking power generation, transmission and distribution infrastructure, and with a particularly close focus on the development of flexible power production and consumption and smart demand, as well as the parallel evolution of the heat and transport sectors, and how the system contributes to our overall emissions. The Unit will also track vital wider enablers across the length and breadth of this Action Plan, to effectively identify whether the mission is on track.

Where emerging problems are identified, the Unit will work with government sector experts to investigate what can be done in more detail, develop actions that can be taken, and drive their implementation. The Advisory Commission will have a key role in advising both on emerging issues, and on the priorities for action.

Taking a data driven approach

We commissioned NESO to provide advice on the potential pathways to achieve clean power by 2030. This suggested Clean Power 2030 is achievable, with insights on the pathways to delivery.

The Unit will bring together data and insights from across government and the clean energy sector, to track the delivery of clean power infrastructure and metrics for vital wider enablers, with analytical and data science expertise embedded within the Unit. This capability will provide decision-makers with up-to-date insight on progress across the infrastructure projects critical to 2030 and will inform actions taken to promote effective delivery and address emerging issues. The Unit will work to promote collaboration on collecting and using these data across government and our delivery partners where appropriate.

This work will also involve managing dependencies and ensuring that our future power system works as a coherent whole.

The Clean Power 2030 Unit will continue to develop this data capability in the New Year. We currently envisage an expert team across all necessary fields, supported by strong data flows and backed by the Mission Board, the Secretary of State, and ultimately the Prime Minister, all within a structured engineering program delivery environment.

This is a once-in-a-generation opportunity to deliver clean power – and we are committed to operating a robust system of evaluation and innovation to drive continuous improvement throughout the system.

An industry forum for system-level supply chain and workforce planning

With global competition for resources for clean energy technologies we know that developers face challenges in securing both the materials and skills they need. Our approach to delivering Clean Power 2030 presents a unique opportunity for government and industry to come together to more proactively plan and coordinate supply chain and workforce delivery. We will have clearer line-of-sight of what needs to be built and by when, so are uniquely placed to work in lockstep with industry to help them manage and navigate supply chain and workforce constraints.

In addition to the policies and actions discussed in the Supply Chains and Workforce chapter, we see a core role for the Clean Power 2030 Unit in bringing together key industry players to think radically about the challenges facing our supply chains and workforce. This group will meet for the first time in early 2025 and will look to quickly move to agreeing specific policy actions that can be taken to address shared risks in this area.

To do this we will establish a new forum, convened by the Clean Power 2030 Unit in close collaboration with the Office of Clean Energy Jobs, which brings together key partners, across private and public sectors, including trade unions, in infrastructure delivery. Drawing on past government experience of working innovatively with industry, this forum will quickly form a view of the Clean Power 2030 system-level supply chain and workforce needs and then devise targeted collective actions to ensure these needs are met.

We will engage with industry in the development of this forum, exploring what role it should take to be most impactful. This could be a more active role for government in supporting workforce planning across key sectors for 2030 or enabling greater collaboration and sharing of insight across industry. The new forum will join up work already being done across the Offshore Wind Industry Council, the Onshore Wind Taskforce and the Solar Taskforce. The new collaborative forum will look to complement the work of these groups to drive forward bespoke actions for 2030. This group will meet for the first time in early 2025 and will look to quickly move to agreeing specific actions that can be taken to address shared risks in this area.

The key role of the Devolved Governments

The Devolved Governments will play an important part in meeting the targets for Clean Power 2030. The governments have significant devolved powers in areas around energy and will need to be a part of the UK wide initiatives to ensure effective implementation of Clean Power 2030 policies. Not least, we will need their support in streamlining the planning and consenting processes to facilitate faster development of clean power projects.

The development of clean power infrastructure will create jobs for local areas, and we will need support to ensure that the skills development is in place to fill these roles. The UK government has been working closely with the devolved governments to ensure there is a consensus and understanding with what will be needed to achieve Clean Power by 2030.

Wales

The Welsh Senedd was the first government to declare a climate emergency. Welsh Government has set a target for Wales to host sufficient renewable capacity to meet its own needs from 2035 and to keep pace as we move away from fossil fuels and demand for clean electricity increases.

Welsh Government welcomes the Clean Power Plan, which is necessary if Wales is to achieve its ambitions for a prosperous low carbon future. This plan will be important in accelerating the start of what must be a long term pathway for the next thirty years. We need future certainty to secure long term investment in the nation's energy infrastructure, and in the skilled workforce we need to build it.

Whilst we recognise the importance of large scale generation and transmission networks, our Future Energy Networks for Wales work also recognises the role of smarter and more local energy use. Wales is taking a proactive approach to planning for the new energy system, supporting local authorities to develop plans that show how transport, heating and industry will change as we use cleaner fuels and more efficient processes. Our Ynni Cymru programme is supporting a range of projects that look to meet energy needs locally, keeping value local and reducing the need for large scale change. We look forward to contributing evidence from this innovative programme, to how we collectively achieve the future energy system at least cost and least impact for people.

Scotland

The Scottish Government is committed to working closely with the UK government on shared ambitions to decarbonise energy generation and drive progress towards net zero. Close collaboration is vital to ensuring coherent delivery of the Action Plan across Great Britain, and devolved areas – such as Scotland's terrestrial and offshore planning and consenting systems – will play a key role.

Scotland's significant renewable energy potential, strong pipeline of projects, and growing supply chain will be essential to achieving a secure, affordable and clean power system across Great Britain. The Scottish Government's objective is to ensure this brings significant wider benefits – such as boosting economic growth, supply chains and green jobs; delivering renewable energy with tangible benefits to communities; and reducing costs for consumers.

Scotland has already made significant progress towards a clean, fair and secure energy system. Scotland is a net exporter of electricity to the rest of Great Britain, and in 2022, more than 70% of electricity generated in Scotland was from renewable sources. Scotland's renewable energy capacity continues to grow, with a strong pipeline of future projects that will play

a key role in decarbonising the power system across the UK.

The Scottish Government is already taking action to build on this progress and accelerate deployment of clean energy – this includes measures to improve the planning and consenting regime for energy infrastructure; delivering the Green Industrial Strategy; investing in the offshore wind supply chain in Scotland; and actions to achieve the Scottish Government's existing 2030 ambitions for onshore and offshore wind.

The Scottish Government will continue to work with the UK government to maintain investor confidence and boost renewables deployment, whilst also securing clear benefits for consumers and communities throughout the transition.

Northern Ireland

The Clean Energy Superpower Mission will benefit UK taxpayers, which includes Northern Ireland. Energy policy is largely devolved to the Northern Ireland Executive, and they are producing their own plan to decarbonise the power sector. Taking a holistic four nations approach will increase the benefit for the entire UK. Clean Power 2030, whilst a target for Great Britain, is on the pathway to reach net zero by 2050, which as enshrined in law, includes Northern Ireland.

Role of power sector actors

The delivery of Clean Power 2030 will rely heavily on the collaboration and input from a huge range of public and private sector organisations. Government will work in close collaboration with these groups to deliver Clean Power 2030. Whilst the list of organisations essential to our successful delivery is long, particularly key groups include:

The role of industry

Private sector input is essential, bringing the expertise and investment required to achieve the ambitious Clean Power 2030 target. This plan outlines the policy actions being taken by the government, but the industry will play the core role in the delivery of the Clean Power 2030 target, from securing the initial investment and undertaking early project design, through to building and operating Clean Power 2030 assets. The government has engaged with the industry while developing the action plan and will continue to do so as progress is made towards the 2030 target.

The role of Ofgem

Ofgem is Great Britain's independent energy regulator, whose primary responsibility is to protect energy consumers, especially the most vulnerable, while at the same time working with government, industry and consumer groups to deliver a net zero economy at the lowest cost to consumers and drive economic growth. Ofgem works closely with the Clean Power 2030 Unit, the National Energy System Operator, consumer groups and across government, to support its aim of delivering a clean power energy system by 2030 and a net zero economy by 2050. Its governing body is the Gas and Electricity Markets Authority, which comprises non-executive and executive members, and a non-executive chair. Members are appointed by the Secretary of State of the Department for Energy Security and Net Zero. Ofgem's Senior Executive Committee is chaired by Ofgem's Chief Executive Officer and is responsible for our overall performance; it is made up of the CEO and seven Director Generals and Directors from across Ofgem.

Ofgem works on behalf of energy consumers to ensure that households and businesses across Britain can rely on a safe, affordable and environmentally sustainable energy supply. The UK has one of the most ambitious climate change goals in the world

and at the heart of this is our transition from a high carbon traditional energy system to one that is fully decarbonised. Ofgem has a key role in this transition, making sure that customers' interests are looked after along the way. As a Non-Ministerial Department and independent regulator, Ofgem uses the duties and powers set out for it by Parliament to:

- Ensure fair prices so consumers pay a reasonable price for their energy and are protected from unfair costs.
- Drive up standards by ensuring energy suppliers abide by the rules and treat customers properly.
- Keep down costs by fostering innovation and attracting investment so consumers can make greener choices through new products and services.
- Grow our energy resilience by helping to deliver a future energy system that is not reliant on global energy imports so consumers have access to stable, affordable, and secure supplies of energy.
- Deliver government schemes for renewable energy, energy efficiency and to protect the poorest energy customers.

The role of the National Energy System Operator (NESO)

NESO was established in October 2024 as a publicly owned system operator, with new responsibilities in strategically planning the whole energy system and giving advice to government and Ofgem. NESO's advice to government on achieving clean power by 2030 has been a key input in shaping this plan. NESO will be a key partner in delivering clean power, working closely with government Ofgem and industry.

As a first step, NESO is consulting on the reform of connections processes, which includes aligning those processes with government's clean power plan and with future iterations of the Strategic Spatial Energy Plan. This will enable the generation capacity required to meet clean power to efficiently connect to the system and provide longer term clarity for industry.

As the System Operator, NESO will be working to ensure that its own operations, processes and systems are prepared for the drive to clean power. This will include developing an implementation and putting in place its ongoing industry engagement plan.

NESO will work with Ofgem to continue to push forward energy code reform and help to identify the direction of future code changes for clean power provided through the Strategic Direction Statement and assess how code change can be more effective and responsive to changing system or market needs. In November, NESO launched a consultation on its business plan which sets out how NESO will work to implement clean power by 2030[137].

The role of DNOs

DNOs are responsible for the infrastructure that delivers electricity from the national transmission network to consumers. This includes the maintenance and operation of towers, transformers, cables, and meters. They are key players in the energy transition, given their intrinsic responsibilities to enable the distribution of renewable energy.

[137] NESO (2024), *'Have your say on our first business plan as NESO'* (viewed in December 2024).

The role of Transmission Operators

The three Transmission Operators are responsible for owning and maintaining the high voltage electricity network ensuring high voltage electricity can reach one of the fourteen Distribution Networks Operators across GB. They are key players in ensuring the energy system is suitably maintained and equipped to transport renewable energy across the country.

The role of public finance institutions

The UK's public finance institutions are empowered to deliver a range of financing tools to support government policy goals in line with their government set mandates.

They play a key role in providing finance to clean power sectors and technologies, supporting them to commercial maturity and scale. This includes support for earlier stage innovation (UK Research and Innovation), smaller businesses vital to commercialisation of green technologies (British Business Bank), and first-of-a-kind commercial deployment, or later stage scaling-up and growth stages for businesses and technologies (National Wealth Fund and UK Export Finance).

The National Wealth Fund will build on the UK Infrastructure Bank's (UKIB) leadership and investment expertise with an expanded suite of financial instruments (such as performance guarantees), additional capital, a broader mandate, additional resource to conduct more proactive development, a commitment to trialling new blended finance solutions with government departments, and a greater regional focus. It will continue to invest in UKIB's previous priority sector of clean energy (including renewable generation, nuclear, flexibility, storage, grid, retrofit, heat networks and clean energy supply chains) for projects which have a financing gap, helping to mobilise private capital into them. At least £5.8 billion of the Fund's capital will focus on five other sectors relevant to clean power: green hydrogen, carbon capture, ports, gigafactories and green steel.

The public finance institutions are actively involved in financing clean power 2030, including battery storage facilities, renewable energy generation, and electricity network infrastructure and supply chains.

APPENDIX 3 – 1

Making a positive difference for energy consumers

All Electricity Licensees 4/9/25

Licence Type	Company Name	Company No.
ELECTRICITY DISTRIBUTION	EASTERN POWER NETWORKS PLC	02366906
ELECTRICITY DISTRIBUTION	ELECTRICITY NORTH WEST LTD.	02366949
ELECTRICITY DISTRIBUTION	LONDON POWER NETWORKS PLC	03929195
ELECTRICITY DISTRIBUTION	NATIONAL GRID ELECTRICITY DISTRIBUTION (EAST MIDLANDS) PLC	02366923
ELECTRICITY DISTRIBUTION	NATIONAL GRID ELECTRICITY DISTRIBUTION (SOUTH WALES) PLC	02366985
ELECTRICITY DISTRIBUTION	NATIONAL GRID ELECTRICITY DISTRIBUTION (SOUTH WEST) PLC	02366894
ELECTRICITY DISTRIBUTION	NATIONAL GRID ELECTRICITY DISTRIBUTION (WEST MIDLANDS) PLC	03600574
ELECTRICITY DISTRIBUTION	NORTHERN POWERGRID (NORTHEAST) PLC	02906593
ELECTRICITY DISTRIBUTION	NORTHERN POWERGRID (YORKSHIRE) PLC	04112320
ELECTRICITY DISTRIBUTION	SCOTTISH HYDRO ELECTRIC POWER DISTRIBUTION PLC	SC213460
ELECTRICITY DISTRIBUTION	SOUTH EASTERN POWER NETWORKS PLC	03043097
ELECTRICITY DISTRIBUTION	SOUTHERN ELECTRIC POWER DISTRIBUTION PLC	04094290
ELECTRICITY DISTRIBUTION	SP DISTRIBUTION PLC	SC189125
ELECTRICITY DISTRIBUTION	SP MANWEB PLC	02366937
ELECTRICITY DISTRIBUTION (INDEPENDENT)	ADVANCED ELECTRICITY NETWORKS LTD.	14657793
ELECTRICITY DISTRIBUTION (INDEPENDENT)	AGR NETWORKS LTD.	15784562
ELECTRICITY DISTRIBUTION (INDEPENDENT)	AIDIEN LTD.	14616578
ELECTRICITY DISTRIBUTION (INDEPENDENT)	AURORA UTILITIES LTD.	14668032
ELECTRICITY DISTRIBUTION (INDEPENDENT)	E.ON UK NETWORK ASSETS LTD.	03810087
ELECTRICITY DISTRIBUTION (INDEPENDENT)	ECLIPSE POWER NETWORKS LTD.	09633506
ELECTRICITY DISTRIBUTION (INDEPENDENT)	ENERGY ASSETS NETWORKS LTD.	10068882
ELECTRICITY DISTRIBUTION (INDEPENDENT)	ESP ELECTRICITY LTD.	04718806
ELECTRICITY DISTRIBUTION (INDEPENDENT)	FULCRUM ELECTRICITY ASSETS LTD.	08019627
ELECTRICITY DISTRIBUTION (INDEPENDENT)	GREEN GENERATION ENERGY NETWORKS CYMRU LTD.	13060815
ELECTRICITY DISTRIBUTION (INDEPENDENT)	HARLAXTON ENERGY NETWORKS LTD.	07330883
ELECTRICITY DISTRIBUTION (INDEPENDENT)	INDEPENDENT DISTRIBUTION CONNECTION SPECALISTS LTD.	13901266
ELECTRICITY DISTRIBUTION (INDEPENDENT)	INDEPENDENT POWER NETWORKS LTD.	04935008
ELECTRICITY DISTRIBUTION (INDEPENDENT)	INDIGO POWER LTD.	12159646
ELECTRICITY DISTRIBUTION (INDEPENDENT)	LAST MILE ELECTRICITY LTD.	SC234694
ELECTRICITY DISTRIBUTION (INDEPENDENT)	LEEP ELECTRICITY NETWORKS LTD.	06684589
ELECTRICITY DISTRIBUTION (INDEPENDENT)	MUA ELECTRICITY LTD.	10622250
ELECTRICITY DISTRIBUTION (INDEPENDENT)	OPTIMAL POWER NETWORKS LTD.	11024024
ELECTRICITY DISTRIBUTION (INDEPENDENT)	STARK INFRA-ELECTRICITY LTD.	11437601
ELECTRICITY DISTRIBUTION (INDEPENDENT)	THE ELECTRICITY NETWORK COMPANY LTD.	05581824
ELECTRICITY DISTRIBUTION (INDEPENDENT)	UK POWER DISTRIBUTION LTD.	06339585
ELECTRICITY DISTRIBUTION (INDEPENDENT)	UTILITY ASSETS LTD.	07255054
ELECTRICITY DISTRIBUTION (INDEPENDENT)	VATTENFALL NETWORKS LTD.	02731769
ELECTRICITY DISTRIBUTION (INDEPENDENT)	VITAL ENERGI POWER NETWORKS LTD.	15302039
ELECTRICITY GENERATION		
ELECTRICITY GENERATION	COUNT WESTGASS AS	916555806

Note: List of all licencees are not Formal Public Register documents and should not be relied upon.
For any queries, please contact licensing@ofgem.gov.uk

ofgem
Making a positive difference for energy consumers

All Electricity Licensees 4/9/25

ELECTRICITY GENERATION	HARE CRAIG WINDFARM LLP	OC429444
ELECTRICITY GENERATION	ABBEY POWER GENERATION LTD.	07426533
ELECTRICITY GENERATION	ABBOTSHAUGH ENERGY STORAGE LTD.	13587232
ELECTRICITY GENERATION	ABERDEEN OFFSHORE WIND FARM LTD.	SC278869
ELECTRICITY GENERATION	ABERGELLI FARM BESS LTD.	14418338
ELECTRICITY GENERATION	ABERGELLI POWER LTD.	08190497
ELECTRICITY GENERATION	ABERTHAW ENERGY LTD.	13334556
ELECTRICITY GENERATION	ACORN PEACH ENERGY LTD.	10117252
ELECTRICITY GENERATION	ADV 003 LTD.	12316717
ELECTRICITY GENERATION	AES BARRY LTD.	03135522
ELECTRICITY GENERATION	AIK2A SUSTAINABLE ENERGY LTD	SC488512
ELECTRICITY GENERATION	AIKENGALL II COMMUNITY WIND COMPANY LTD.	SC457920
ELECTRICITY GENERATION	ALCEMI STORAGE DEVELOPMENTS 4 LTD.	12376965
ELECTRICITY GENERATION	ALDUSTRIA (LAUNCESTON) LTD.	14292356
ELECTRICITY GENERATION	ALMHOLME BESS LTD.	14552794
ELECTRICITY GENERATION	ALUDRA BESS LTD.	13042704
ELECTRICITY GENERATION	AMALGAMETED SMART METERING LTD.	09299892
ELECTRICITY GENERATION	AMEGNI RENEWABLES LTD.	05754766
ELECTRICITY GENERATION	ARBROATH LTD.	12142520
ELECTRICITY GENERATION	ARENKO CLEANTECH LTD.	08831289
ELECTRICITY GENERATION	ARISE RENEWABLE ENERGY UK LTD.	13569939
ELECTRICITY GENERATION	ARL 001 LTD.	11114460
ELECTRICITY GENERATION	ARL 009 LTD.	11113979
ELECTRICITY GENERATION	ARL 027 LTD.	11518098
ELECTRICITY GENERATION	ARTFIELD FOREST WIND FARM LTD.	11756439
ELECTRICITY GENERATION	ASHFORD POWER LTD.	09116903
ELECTRICITY GENERATION	AURORA SOLAR FARM LTD.	12013818
ELECTRICITY GENERATION	AVE 002 LTD.	11592591
ELECTRICITY GENERATION	AWEL Y MOR OFFSHORE WIND FARM LTD.	12270928
ELECTRICITY GENERATION	BALBOUGIE ENERGY CENTRE II LIMITED	13484500
ELECTRICITY GENERATION	BALWEN LTD.	12896619
ELECTRICITY GENERATION	BANBURY POWER LTD.	10697338
ELECTRICITY GENERATION	BARKING POWER LTD.	02354681
ELECTRICITY GENERATION	BARR HALL FARM BESS LTD.	15333192
ELECTRICITY GENERATION	BARTLEY POWER LTD.	09343016
ELECTRICITY GENERATION	BASILDON BESS LTD.	12704442
ELECTRICITY GENERATION	BASILDON POWER LTD.	09144975
ELECTRICITY GENERATION	BATTERY BOX LTD.	14102358
ELECTRICITY GENERATION	BEACON FEN ENERGY PARK LTD	13347752
ELECTRICITY GENERATION	BEATRICE OFFSHORE WINDFARM LTD.	SC350248
ELECTRICITY GENERATION	BEAUFORT POWER LTD.	09111808
ELECTRICITY GENERATION	BEAW FIELD SHETLAND LTD.	07551084

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ELECTRICITY GENERATION	BENBRACK WIND FARM LTD.	12971043
ELECTRICITY GENERATION	BENTHEAD SOLAR LTD.	SC708803
ELECTRICITY GENERATION	BERWICK BANK A LTD.	07294493
ELECTRICITY GENERATION	Berwick Bank B LTD.	13884182
ELECTRICITY GENERATION	BERWICK BANK C LTD.	07294599
ELECTRICITY GENERATION	Berwick Bank Wind Farm LTD.	SC721781
ELECTRICITY GENERATION	BESS AYLESFORD LTD.	10215659
ELECTRICITY GENERATION	BESS CLAREDOWN LTD.	10051317
ELECTRICITY GENERATION	BESS HILL FARM LTD.	10671841
ELECTRICITY GENERATION	BESS K BARN LTD.	10672925
ELECTRICITY GENERATION	BESS LEYS LTD.	10675669
ELECTRICITY GENERATION	BESS POPLARS LTD.	10675674
ELECTRICITY GENERATION	BESS WILLOWS LTD.	10675649
ELECTRICITY GENERATION	BHLARAIDH EXTENSION WIND FARM LTD.	SC798136
ELECTRICITY GENERATION	BICKER DROVE LTD.	15674780
ELECTRICITY GENERATION	BIOGAS TECHNOLOGY LTD.	02323287
ELECTRICITY GENERATION	BIRCH SOLAR PARK LTD.	13348332
ELECTRICITY GENERATION	Blackdyke BESS LTD.	14315142
ELECTRICITY GENERATION	BLACKPARK ENERGY STORAGE LTD.	SC595139
ELECTRICITY GENERATION	BLARY HILL ENERGY LTD.	09507308
ELECTRICITY GENERATION	BLUE GEM WIND LTD.	11116383
ELECTRICITY GENERATION	BODELWYDDAN SOLAR & ENERGY STORAGE LTD.	13307064
ELECTRICITY GENERATION	BOLSHAN RENEWABLES LTD.	SC503349
ELECTRICITY GENERATION	BOOM BACUP STORAGE LTD.	11734930
ELECTRICITY GENERATION	BOTEIN BESS LTD.	13042603
ELECTRICITY GENERATION	BOTLEY ENERGY RESERVE LTD.	11707461
ELECTRICITY GENERATION	BRADWELL POWER GENERATION COMPANY LTD.	09941394
ELECTRICITY GENERATION	BRAINTREE ELECTRIC FORECOURT LTD.	10268643
ELECTRICITY GENERATION	BRAMFORD GREEN LTD.	12516896
ELECTRICITY GENERATION	BRAMLEY BATTERY STORAGE LTD.	13278153
ELECTRICITY GENERATION	BREACH FARM ENERGY STORAGE LTD.	11646096
ELECTRICITY GENERATION	BRECON POWER LTD.	09113303
ELECTRICITY GENERATION	BREESEA LTD.	07883217
ELECTRICITY GENERATION	BRITS ENERGY LTD.	11125466
ELECTRICITY GENERATION	BRK 002 LTD.	11335406
ELECTRICITY GENERATION	BROXBURN ENERGY STORAGE LTD.	12129867
ELECTRICITY GENERATION	BRYN BLAEN WIND FARM LTD.	07638774
ELECTRICITY GENERATION	BUCHAN OFFSHORE WIND LTD.	SC719636
ELECTRICITY GENERATION	BURBO EXTENSION LTD.	07307131
ELECTRICITY GENERATION	BURY POWER LIMITED	09517811)
ELECTRICITY GENERATION	C & S Energy LTD.	13272189

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ELECTRICITY GENERATION	C.GEN KILLINGHOLME LTD.	06422434
ELECTRICITY GENERATION	CADOXTON RESERVE POWER LIMITED	09127592
ELECTRICITY GENERATION	CADZOW ENERGY STORAGE LTD.	13625053
ELECTRICITY GENERATION	CALEDONIA OFFSHORE WIND FARM LTD.	13844888
ELECTRICITY GENERATION	CAMBLESFORTH SOLAR FARM LTD.	12166396
ELECTRICITY GENERATION	CAPBAL (BRANC0) LTD.	13910927
ELECTRICITY GENERATION	CAPBAL (FORFAR) LTD.	13909630
ELECTRICITY GENERATION	CAPELLA BESS LTD.	13115768
ELECTRICITY GENERATION	CAR DUIBH WIND FARM LTD.	12820057
ELECTRICITY GENERATION	CARE POWER (BURWELL 1) LTD.	11110483
ELECTRICITY GENERATION	CARNEDD WEN WIND FARM LTD.	05712858
ELECTRICITY GENERATION	CARRINGTON POWER LTD.	04706728
ELECTRICITY GENERATION	CARRINGTON STORAGE LTD.	06711448
ELECTRICITY GENERATION	CARROG STORAGE FACILITY LTD.	14197726
ELECTRICITY GENERATION	CATHKIN ENERGY STORAGE LTD.	13341612
ELECTRICITY GENERATION	CELTPOWER LTD.	02656561
ELECTRICITY GENERATION	CHICKERELL STORAGE LTD.	11505358
ELECTRICITY GENERATION	CILFYNYDD GRID SERVICES LTD.	13396965
ELECTRICITY GENERATION	Cirencester Solar Farm LTD.	08984078
ELECTRICITY GENERATION	CLAYFORDS ENERGY STORAGE LTD.	SC595136
ELECTRICITY GENERATION	CLAYHILL SOLAR LTD.	08662024
ELECTRICITY GENERATION	CLEATOR BATTERY STORAGE LTD.	10266915
ELECTRICITY GENERATION	CLEVE HILL SOLAR PARK LTD.	08904850
ELECTRICITY GENERATION	CLYDE WINDFARM (SCOTLAND) LTD.	SC281105
ELECTRICITY GENERATION	CLYNE POWER LIMITED	09128547
ELECTRICITY GENERATION	CODDINGTON 10 RENEWABLES LTD.	14914945
ELECTRICITY GENERATION	COGLE MOSS RENEWABLES LLP	SO304944
ELECTRICITY GENERATION	COIRE GLAS HYDRO PUMPED STORAGE LTD.	SC561128
ELECTRICITY GENERATION	CONRAD (ALCOA) LTD.	12952320
ELECTRICITY GENERATION	CONRAD (AMPTHILL) LTD.	10969105
ELECTRICITY GENERATION	CONRAD (ARNCOTT) LTD.	11595908
ELECTRICITY GENERATION	CONRAD (BARTON HILL) LTD.	12953302
ELECTRICITY GENERATION	CONRAD (BASINGSTOKE) LTD.	12500002
ELECTRICITY GENERATION	CONRAD (BENFLEET) LTD.	10208257
ELECTRICITY GENERATION	CONRAD (BILLERICAY) LTD.	13047443
ELECTRICITY GENERATION	CONRAD (BILSHAM) LTD.	14370535
ELECTRICITY GENERATION	CONRAD (BILSTON) LTD.	11601560
ELECTRICITY GENERATION	CONRAD (BISHOPSTOKE) LTD.	14032717
ELECTRICITY GENERATION	CONRAD (BISPHAM) LTD.	10487882
ELECTRICITY GENERATION	CONRAD (BLACKPOOL) LTD.	12611339
ELECTRICITY GENERATION	CONRAD (BLETCHLEY) LTD.	09624279
ELECTRICITY GENERATION	CONRAD (BRIDGWATER) LTD.	13815308

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ELECTRICITY GENERATION	CONRAD (CAERNARFON) LTD.	10969635
ELECTRICITY GENERATION	CONRAD (CALNE) LTD.	10969552
ELECTRICITY GENERATION	CONRAD (CASTLE BROMWICH) LTD.	13033963
ELECTRICITY GENERATION	CONRAD (CHATTERLEY) LTD.	10322690
ELECTRICITY GENERATION	CONRAD (CLEVELEYS) LTD.	10758757
ELECTRICITY GENERATION	CONRAD (CREWKERNE) LTD.	13324533
ELECTRICITY GENERATION	CONRAD (DOWLAIS) LTD.	12953413
ELECTRICITY GENERATION	CONRAD (DOWN BARN FARM) LTD.	12953312
ELECTRICITY GENERATION	CONRAD (DROVE) LTD.	12950332
ELECTRICITY GENERATION	CONRAD (EYE) LTD.	14405221
ELECTRICITY GENERATION	CONRAD (FLEETWOOD) LTD.	09917671
ELECTRICITY GENERATION	CONRAD (FLINT) LTD.	10969724
ELECTRICITY GENERATION	CONRAD (FLITWICK) LTD.	12886567
ELECTRICITY GENERATION	CONRAD (GOOSE HOUSE LANE) LTD.	12953330
ELECTRICITY GENERATION	CONRAD (GRAIN) LTD.	13048107
ELECTRICITY GENERATION	CONRAD (HALESWORTH0 LTD.	13324544
ELECTRICITY GENERATION	CONRAD (HAWARDEN) LTD.	10969100
ELECTRICITY GENERATION	CONRAD (HEYBRIDGE) LTD.	10211413
ELECTRICITY GENERATION	CONRAD (LANGAGE) LTD.	10969369
ELECTRICITY GENERATION	CONRAD (LESTER WAY) LTD.	12950273
ELECTRICITY GENERATION	CONRAD (LETCHWORTH) LTD.	12949830
ELECTRICITY GENERATION	CONRAD (LILLYHALL) LTD.	SC493107
ELECTRICITY GENERATION	CONRAD (LOWER DUNTON) LTD.	12575155
ELECTRICITY GENERATION	CONRAD (LOWESTOFT) LTD.	13033979
ELECTRICITY GENERATION	CONRAD (LYTHAM) LTD.	10758742
ELECTRICITY GENERATION	CONRAD (MATCHING) LTD.	10969076
ELECTRICITY GENERATION	CONRAD (MELKSHAM) LTD.	10969483
ELECTRICITY GENERATION	CONRAD (MIDDLETON JUNCTION) LTD.	10969392
ELECTRICITY GENERATION	CONRAD (MIDDLEWICH) LTD.	11596046
ELECTRICITY GENERATION	CONRAD (MIDSOMER) LTD.	12697908
ELECTRICITY GENERATION	CONRAD (MINEHEAD) LTD.	12932711
ELECTRICITY GENERATION	CONRAD (MOORFIELD) LTD.	12953347
ELECTRICITY GENERATION	CONRAD (NESTON) LTD.	13368404
ELECTRICITY GENERATION	CONRAD (NEWARK) LTD.	12886616
ELECTRICITY GENERATION	CONRAD (OLDBURY) LTD.	12761865
ELECTRICITY GENERATION	CONRAD (PLYMOUTH ROCK) LTD.	12950994
ELECTRICITY GENERATION	CONRAD (PLYMOUTH) LTD.	10969085
ELECTRICITY GENERATION	CONRAD (PURFLEET) LTD.	10211293
ELECTRICITY GENERATION	CONRAD (PUTNOE) LTD.	09917668
ELECTRICITY GENERATION	CONRAD (RAKE LANE) LTD.	12949373
ELECTRICITY GENERATION	CONRAD (REDBOURN) LTD.	09644964
ELECTRICITY GENERATION	CONRAD (REDFIELD) LTD.	12950381

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ELECTRICITY GENERATION	CONRAD (ROCHESTER) LTD.	10906721
ELECTRICITY GENERATION	CONRAD (RUNCORN) LTD.	10969291
ELECTRICITY GENERATION	CONRAD (SANDON) LTD.	14618613
ELECTRICITY GENERATION	CONRAD (SANDYCROFT) LTD.	10969652
ELECTRICITY GENERATION	CONRAD (SITTINGBOURNE) LTD.	10186598
ELECTRICITY GENERATION	CONRAD (STEVENAGE A) LTD.	09913251
ELECTRICITY GENERATION	CONRAD (STEVENAGE B) LTD.	09917688
ELECTRICITY GENERATION	CONRAD (SUDMEADOW) LTD.	12953365
ELECTRICITY GENERATION	CONRAD (SUNDON) LTD.	12575279
ELECTRICITY GENERATION	CONRAD (SWINDON) LTD.	10923676
ELECTRICITY GENERATION	CONRAD (TORQUAY) LTD.	13207993
ELECTRICITY GENERATION	CONRAD (TRAFALGAR PARK) LTD.	12953387
ELECTRICITY GENERATION	CONRAD (WALPOLE) LTD.	14405214
ELECTRICITY GENERATION	CONRAD (WATCHET) LTD.	14618573
ELECTRICITY GENERATION	CONRAD (WATER LANE) LTD.	12949908
ELECTRICITY GENERATION	CONRAD (WINCHESTER) LTD.	10923638
ELECTRICITY GENERATION	CONRAD (WITHAM) LTD.	13048239
ELECTRICITY GENERATION	CONRAD (WOOTON) LTD.	12932748
ELECTRICITY GENERATION	CONRAD (WREXHAM) LTD.	10969619
ELECTRICITY GENERATION	CONRAD (YAXLEY) LTD.	13048150
ELECTRICITY GENERATION	Conrad (Yeovil) LTD.	10969530
ELECTRICITY GENERATION	CORBY POWER LTD.	02329494
ELECTRICITY GENERATION	CORRIEGARTH WIND ENERGY LTD.	SC486712
ELECTRICITY GENERATION	CORRINGHAM POWER LTD.	14686701
ELECTRICITY GENERATION	CORYTON ENERGY COMPANY LTD.	FC020597
ELECTRICITY GENERATION	COTTAM SOLAR PROJECT LTD.	12711231
ELECTRICITY GENERATION	COUPAR LTD.	11966683
ELECTRICITY GENERATION	COUR WIND FARM (SCOTLAND) LTD.	SC493307
ELECTRICITY GENERATION	COWLEY BALDON GREEN LTD.	12517381
ELECTRICITY GENERATION	COYLTON ENERGY LTD.	14096780
ELECTRICITY GENERATION	CRAIG WATCH WIND FARM LTD.	12792263
ELECTRICITY GENERATION	CREYKE BECK POWER LTD.	10342799
ELECTRICITY GENERATION	CREYKE BECK STORAGE LTD.	10342976
ELECTRICITY GENERATION	CRYSTAL RIG LL LTD.	SC257737
ELECTRICITY GENERATION	CULVERY POWER LIMITED	09130861
ELECTRICITY GENERATION	CUMBERHEAD WEST WIND FARM LTD.	SC535501
ELECTRICITY GENERATION	CUSTODIAN ENERGY LTD.	11618221
ELECTRICITY GENERATION	CUXTON ENERGY STORAGE LTD	13048364
ELECTRICITY GENERATION	CYNON POWER LIMITED	08604620
ELECTRICITY GENERATION	DAFEN RESERVE POWER LIMITED	08836682
ELECTRICITY GENERATION	DAMSONGREEN ENERGYFARM LTD.	15426313

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ELECTRICITY GENERATION	DANSKE COMMODITIES A/S	CVR NR 28113951
ELECTRICITY GENERATION	DEESIDE POWER (UK) LTD.	08887001
ELECTRICITY GENERATION	DOGGERBANK OFFSHORE WIND FARM PROJECT 1 PROJCO LTD.	07791991
ELECTRICITY GENERATION	DOGGERBANK OFFSHORE WIND FARM PROJECT 2 PROJCO LTD.	07914510
ELECTRICITY GENERATION	DOGGERBANK OFFSHORE WIND FARM PROJECT 3 PROJCO LTD.	07791977
ELECTRICITY GENERATION	DOGGERBANK OFFSHORE WIND FARM PROJECT 4 PROJCO LTD.	13587611
ELECTRICITY GENERATION	DONCASTER POWER (10 MW) LTD.	11377507
ELECTRICITY GENERATION	DORENELL WINDFARM LTD.	05628395
ELECTRICITY GENERATION	DOUGLAS WEST EXTENSION LTD.	SC587662
ELECTRICITY GENERATION	Drax Cruachan Expansion LTD.	06657393
ELECTRICITY GENERATION	DRAX POWER LTD.	04883589
ELECTRICITY GENERATION	DRAX PUMPED STORAGE LTD.	06657336
ELECTRICITY GENERATION	DRAX RIVER HYDRO LTD.	05956747
ELECTRICITY GENERATION	DRAYTON MANOR FARMS LTD.	08890131
ELECTRICITY GENERATION	DUDGEON EXTENSION LTD.	12148301
ELECTRICITY GENERATION	DUDGEON OFFSHORE WIND LTD.	04418909
ELECTRICITY GENERATION	DULATER HILL WIND PARK LTD.	06439166
ELECTRICITY GENERATION	DUNFERMLINE SOLAR LTD.	12683727
ELECTRICITY GENERATION	DUNMAGLASS WIND FARM LTD.	SC607482
ELECTRICITY GENERATION	DURHAM RP LTD.	11632552
ELECTRICITY GENERATION	E.ON UK BATTERY STORAGE SYSTEMS LTD.	15242893
ELECTRICITY GENERATION	EARBA LTD.	14386618
ELECTRICITY GENERATION	EAST ANGLIA ONE LTD.	07366753
ELECTRICITY GENERATION	EAST ANGLIA ONE NORTH LTD.	11121800
ELECTRICITY GENERATION	EAST ANGLIA THREE LTD.	08141208
ELECTRICITY GENERATION	EAST ANGLIA TWO LTD.	11121842
ELECTRICITY GENERATION	EAST CLAYDON STORAGE LTD.	14305328
ELECTRICITY GENERATION	EAST PYE SOLAR LTD.	14684189
ELECTRICITY GENERATION	East Yorkshire Solar Farm LTD.	14103404
ELECTRICITY GENERATION	ECCLES ENERGY CENTRE LTD.	SC766863
ELECTRICITY GENERATION	Ecotricity (Alveston Storage) LTD.	11631831
ELECTRICITY GENERATION	EDF DEVELOPMENT COMPANY LTD.	06222043
ELECTRICITY GENERATION	EDF ENERGY (THERMAL GENERATION) LTD.	04267569
ELECTRICITY GENERATION	EDF ENERGY NUCLEAR GENERATION LTD.	03076445
ELECTRICITY GENERATION	EDF ENERGY RENEWABLES LTD.	06456689
ELECTRICITY GENERATION	EELPOWER (OPCO6) LTD.	10909865
ELECTRICITY GENERATION	EGGBOROUGH POWER LTD.	03782700
ELECTRICITY GENERATION	Elements Green Renewables SPV001 LTD.	14274390
ELECTRICITY GENERATION	ELEMENTS GREEN STAYTHORPE BESS LTD.	13666008
ELECTRICITY GENERATION	ENDERBY BATTERY STORAGE LTD.	12147583
ELECTRICITY GENERATION	ENDERBY BESS LTD.	14552718
ELECTRICITY GENERATION	ENDERBY STORAGE LTD.	10915635

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ELECTRICITY GENERATION	ENERGYFARM ALLT DOMHAIN LTD.	16095293
ELECTRICITY GENERATION	ENERGYFARM NARACHAN LTD.	15086889
ELECTRICITY GENERATION	ENERGYFARM UK FELL LLP	OC429449
ELECTRICITY GENERATION	Energyfarm UK Margree LLP	OC436123
ELECTRICITY GENERATION	ENERGYFARM UK PINES BURN LLP	OC428008
ELECTRICITY GENERATION	ENERSYST LTD.	08894952
ELECTRICITY GENERATION	ENGIE POWER LTD.	04236804
ELECTRICITY GENERATION	ENGIE UK LTD	02366963
ELECTRICITY GENERATION	ENGIE UK MARKETS LTD.	02462479
ELECTRICITY GENERATION	EP LANGAGE LTD.	03462783
ELECTRICITY GENERATION	EP LYNEMOUTH POWER LTD.	07866585
ELECTRICITY GENERATION	EP SHB LTD.	02571241
ELECTRICITY GENERATION	EP UK POWER DEVELOPMENT II LTD.	15767674
ELECTRICITY GENERATION	EQUINICITY LTD.	11374646
ELECTRICITY GENERATION	EQUINOR BLANDFORD ROAD LTD.	11777091
ELECTRICITY GENERATION	EQUINOR WELKIN MILL LTD.	11140788
ELECTRICITY GENERATION	ESB SOLAR (NORTHERN IRELAND) LTD.	NI631677
ELECTRICITY GENERATION	ESSO PETROLEUM COMPANY LTD.	00026538
ELECTRICITY GENERATION	EUSTON SOLAR FARM LTD.	11838528
ELECTRICITY GENERATION	EXERGY SOLUTIONS LTD.	13532972
ELECTRICITY GENERATION	EXETER RP LTD.	9874992
ELECTRICITY GENERATION	EXETER STORAGE LTD.	13869756
ELECTRICITY GENERATION	FALLAGO RIG WINDFARM LTD.	SC226523
ELECTRICITY GENERATION	FANNY HOUSE FARM BESS LTD.	14331043
ELECTRICITY GENERATION	FAREHAM ENERGY RESERVE 2 LTD.	12286433
ELECTRICITY GENERATION	FAREHAM ENERGY RESERVE LTD.	11707543
ELECTRICITY GENERATION	FAW SIDE COMMUNITY WIND COMPANY LTD.	SC637983
ELECTRICITY GENERATION	FEARNA PSH LTD.	14819538
ELECTRICITY GENERATION	FEEDER GRID STORAGE LTD.	11822023
ELECTRICITY GENERATION	FENWICK SOLAR PROJECT LTD.	13705886
ELECTRICITY GENERATION	FERN BROOK SOLAR FARM LTD.	13094454
ELECTRICITY GENERATION	FERRYMUIR ENERGY STORAGE LTD.	11194667
ELECTRICITY GENERATION	FIELD AUCHTERAW LTD.	SC621663
ELECTRICITY GENERATION	FIELD DRUM FARM LTD.	sc721836
ELECTRICITY GENERATION	FIELD FYRISH LTD	15804621
ELECTRICITY GENERATION	FIELD GERRARDS CROSS LTD.	09718112
ELECTRICITY GENERATION	FIELD HARTMOOR LTD.	13995703
ELECTRICITY GENERATION	FIELD HOLMSTON LTD.	SC731010
ELECTRICITY GENERATION	FIELD KEITH LTD.	13124496
ELECTRICITY GENERATION	FIELD LONG STRATTON LTD	15932330
ELECTRICITY GENERATION	FIELD NETHERTON LTD	16406712

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ELECTRICITY GENERATION	FIELD NEWPORT LTD.	13394092
ELECTRICITY GENERATION	FIELD OLDHAM LTD.	10896544
ELECTRICITY GENERATION	FIELD RIGIFA LTD	15430694
ELECTRICITY GENERATION	FIELD WHITEBIRK LTD.	10701975
ELECTRICITY GENERATION	FIRST HYDRO COMPANY	02444277
ELECTRICITY GENERATION	FIVE ESTUARIES OFFSHORE WINDFARM LTD.	12292474
ELECTRICITY GENERATION	FLEXIBLEGRIDPOWER3 LTD.	10684284
ELECTRICITY GENERATION	FLEXION ENERGY SPV 1 LTD.	14073343
ELECTRICITY GENERATION	FLEXION ENERGY SPV 2 LTD.	14073230
ELECTRICITY GENERATION	Flexion Energy SPV 3 LTD.	15004457
ELECTRICITY GENERATION	FP LUX SCURF DYKE SOLAR LTD.	11761629
ELECTRICITY GENERATION	FREASDAIL ENERGY LTD.	09605716
ELECTRICITY GENERATION	FRODSHAM SOLAR LTD.	14432433
ELECTRICITY GENERATION	FS WEST GOURDIE LTD.	12356268
ELECTRICITY GENERATION	GALLOPER WIND FARM LTD.	07320597
ELECTRICITY GENERATION	GATE BURTON ENERGY PARK LTD.	12660764
ELECTRICITY GENERATION	GATEWAY ENERGY CENTRE LTD.	07146501
ELECTRICITY GENERATION	GATWICK ELECTRIC FORECOURT LTD.	12449543
ELECTRICITY GENERATION	GB DEVELOPERS LTD.	04480584
ELECTRICITY GENERATION	GBSL DORKING LTD.	10264578
ELECTRICITY GENERATION	GCP GENERATION LTD.	10507519
ELECTRICITY GENERATION	GFP TRADING LTD.	09490010
ELECTRICITY GENERATION	GLASSENBURY BATTERY STORAGE LTD.	10266822
ELECTRICITY GENERATION	GLEN EARRACH ENERGY LTD.	SC777268
ELECTRICITY GENERATION	GLENDEVON ENERGY STORAGE LTD.	13146302
ELECTRICITY GENERATION	GLENMUCKLOCH PUMPED STORAGE HYDRO LTD.	SC522520
ELECTRICITY GENERATION	GNNR LTD.	SC526159
ELECTRICITY GENERATION	GRANGEMOUTH CHP LTD.	SC178243
ELECTRICITY GENERATION	GREATER GABBARD OFFSHORE WINDS LTD.	04985731
ELECTRICITY GENERATION	GREEN BLADES ENGINEERING LTD.	10238063
ELECTRICITY GENERATION	GREEN HILL ENERGY LTD.	06952903
ELECTRICITY GENERATION	GREEN HILL SOLAR FARM LTD.	13362769
ELECTRICITY GENERATION	GREEN VOLT OFFSHORE WINDFARM LTD.	SC698787
ELECTRICITY GENERATION	GREENGRIDPOWER1 LTD.	12831353
ELECTRICITY GENERATION	GREENSPAN CONTRACTORS LTD.	SC407267
ELECTRICITY GENERATION	GREENSPAN ELECTRIC BALQUHINDACHY LTD.	SC357454
ELECTRICITY GENERATION	GREENSPAN ELECTRIC CAIRNMORE LTD.	SC357453
ELECTRICITY GENERATION	GREENSPAN ELECTRIC ST. FERGUS LTD.	SC366660
ELECTRICITY GENERATION	GREENSPAN NIFTY FIFTY LTD.	SC534267
ELECTRICITY GENERATION	GRENDON STORAGE LTD.	10917324
ELECTRICITY GENERATION	GRESLEY POWER LTD.	11894362

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ELECTRICITY GENERATION	GREYS HALL POWER LTD.	10290270
ELECTRICITY GENERATION	GRIDBEYOND LTD.	08211691
ELECTRICITY GENERATION	GRIDRESERVE LTD.	10647696
ELECTRICITY GENERATION	GRIDSOURCE (WOBURN RD) LTD.	12542044
ELECTRICITY GENERATION	GRIFFIN WIND FARM LTD.	SC245113
ELECTRICITY GENERATION	GS10 ENERGY STORAGE LTD.	12643653
ELECTRICITY GENERATION	GT R4 LTD.	13281221
ELECTRICITY GENERATION	GWYNT Y MOR OFFSHORE WIND FARM LTD.	03697015
ELECTRICITY GENERATION	HAGSHAW HILL REPOWERING LTD.	SC603085
ELECTRICITY GENERATION	Hallen Energy LTD	12397434
ELECTRICITY GENERATION	HAMBLE POWER LTD.	09342479
ELECTRICITY GENERATION	HARBOURNE POWER LIMITED	09130292
ELECTRICITY GENERATION	HARMONY HB LTD.	10683540
ELECTRICITY GENERATION	HASLAND GREEN LTD.	08622176
ELECTRICITY GENERATION	HC ESS2 LTD.	10610190
ELECTRICITY GENERATION	HC ESS3 LTD.	10707961
ELECTRICITY GENERATION	HC ESS4 LTD.	10846400
ELECTRICITY GENERATION	HC ESS6 LTD.	11436110
ELECTRICITY GENERATION	HC ESS7 LTD.	11463005
ELECTRICITY GENERATION	HD143OCK LTD.	12023540
ELECTRICITY GENERATION	HD144WHI LTD.	12023571
ELECTRICITY GENERATION	HD639LEG LTD.	11824675
ELECTRICITY GENERATION	HD777FRY LTD.	12023701
ELECTRICITY GENERATION	HD888CAP LTD.	11802123
ELECTRICITY GENERATION	HEIT HP LTD.	13500409
ELECTRICITY GENERATION	HEIT PW LTD.	10776494
ELECTRICITY GENERATION	HEIT PW2 LTD.	11558969
ELECTRICITY GENERATION	HEIT RH LTD.	13244588
ELECTRICITY GENERATION	HEIT WG LTD	13500099
ELECTRICITY GENERATION	HELE MANOR LTD.	10132256
ELECTRICITY GENERATION	HENDY WIND FARM LTD.	07638660
ELECTRICITY GENERATION	HIRWAUN POWER LTD.	08190283
ELECTRICITY GENERATION	HOLDITCH POWER LTD.	12570831
ELECTRICITY GENERATION	HORIZON NUCLEAR POWER WYLFA LTD.	06811987
ELECTRICITY GENERATION	HORNSEA 1 LTD.	07640868
ELECTRICITY GENERATION	HULL RESERVE POWER LIMITED	07882287
ELECTRICITY GENERATION	HULLEY ROAD ENERGY STORAGE LTD.	09427305
ELECTRICITY GENERATION	IGP SOLAR 16 LTD.	13211590
ELECTRICITY GENERATION	ILKESTON POWER LTD.	9806343
ELECTRICITY GENERATION	IMMINGHAM POWER LIMITED	10618661
ELECTRICITY GENERATION	INCH CAPE OFFSHORE LTD.	SC373173

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ELECTRICITY GENERATION	INDIAN QUEENS POWER LTD.	02928100
ELECTRICITY GENERATION	INFINIS ENERGY STORAGE LTD.	06514229
ELECTRICITY GENERATION	INTERVATE LTD.	06489093
ELECTRICITY GENERATION	IRE 001 LTD.	13198803
ELECTRICITY GENERATION	IRON ACTON GREEN LTD.	12517505
ELECTRICITY GENERATION	IRWELL POWER LIMITED	10116738
ELECTRICITY GENERATION	ITCHEN POWER LTD.	09146100
ELECTRICITY GENERATION	KEADBY DEVELOPMENTS LTD.	02691516
ELECTRICITY GENERATION	KEADBY GENERATION LTD.	02729513
ELECTRICITY GENERATION	KEEKLE POWER LTD.	09393206
ELECTRICITY GENERATION	KEITH STORAGE SOLUTIONS LTD.	11248767
ELECTRICITY GENERATION	KENNOXHEAD WIND FARM LTD.	12602263
ELECTRICITY GENERATION	KILMARNOCK ENERGY CENTRE LTD.	SC766862
ELECTRICITY GENERATION	KILN POWER LIMITED	09966818
ELECTRICITY GENERATION	KILNSIDE ENERGY PARK LTD.	15040612
ELECTRICITY GENERATION	KINCARDINE OFFSHORE WINDFARM LTD.	SC475345
ELECTRICITY GENERATION	KINGSWAY SOLAR FARM LTD.	14891095
ELECTRICITY GENERATION	KNOCKCRONAL WIND FARM LTD.	11964184
ELECTRICITY GENERATION	KNOTTINGLEY POWER LTD.	05902446
ELECTRICITY GENERATION	KXP IMMINGHAM LTD.	13100042
ELECTRICITY GENERATION	LAKESIDE ENERGY STORAGE LTD.	10942509
ELECTRICITY GENERATION	LARIGAN POWER LIMITED	09130849
ELECTRICITY GENERATION	LARPORT ENERGY STORAGE LTD.	10051203
ELECTRICITY GENERATION	LASCAR BATTERY STORAGE LTD.	10967468
ELECTRICITY GENERATION	LAVANT POWER LTD.	09342736
ELECTRICITY GENERATION	LEARIELAW ENERGY STORAGE LTD.	SC639604
ELECTRICITY GENERATION	LEGACY GREEN ENERGY LTD.	13299031
ELECTRICITY GENERATION	LEODA SOLAR FARM LTD.	16075568
ELECTRICITY GENERATION	LIGHT VALLEY SOLAR LTD.	13290180
ELECTRICITY GENERATION	LIGHTSOURCE 204 LTD.	08943830
ELECTRICITY GENERATION	LIGHTSOURCE SPV 192 LTD.	08938959
ELECTRICITY GENERATION	LIME DOWN SOLAR PARK LTD.	13211532
ELECTRICITY GENERATION	LIME KILNS ENERGY CENTRE LTD.	11417697
ELECTRICITY GENERATION	LIMEKILN EXTENSION LTD.	10988722
ELECTRICITY GENERATION	LINCS WIND FARM LTD.	SC213646
ELECTRICITY GENERATION	LISTER DRIVE SOLUTIONS LTD.	12781976
ELECTRICITY GENERATION	LIVING POWER PLC	05946946
ELECTRICITY GENERATION	LLUEST Y GWYNT WIND FARM LTD.	11441650
ELECTRICITY GENERATION	LLYR FLOATING WIND LTD.	SC608546
ELECTRICITY GENERATION	LOCH KEMP STORAGE LTD.	10813231
ELECTRICITY GENERATION	LOCH LIATH WIND FARM LTD.	12836747

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ELECTRICITY GENERATION	LODDON POWER LTD.	09966341
ELECTRICITY GENERATION	LONDON ARRAY LTD.	04344423
ELECTRICITY GENERATION	LONGFIELD SOLAR ENERGY FARM LTD.	11618210
ELECTRICITY GENERATION	LONGHILL WIND FARM LLP	OC428018
ELECTRICITY GENERATION	LOTHIAN ELECTRIC MACHINES LTD.	SC036737
ELECTRICITY GENERATION	LOUDWATER BESS LTD.	14325107
ELECTRICITY GENERATION	LOWER MINETY ENERGY LTD.	11344556
ELECTRICITY GENERATION	MAIDENHEAD EAST POWER LTD.	11964793
ELECTRICITY GENERATION	MAIDENHEAD WEST POWER LTD.	11964885
ELECTRICITY GENERATION	MALDON BESS LTD.	13645088
ELECTRICITY GENERATION	MALLARD PASS SOLAR FARM LTD.	12575861
ELECTRICITY GENERATION	MANNINGTON ENERGY CENTRE LTD.	11433331
ELECTRICITY GENERATION	MARCHWOOD POWER LTD.	04229146
ELECTRICITY GENERATION	MARDEN POWER LTD.	09415916
ELECTRICITY GENERATION	MarramWind LTD.	SC719634
ELECTRICITY GENERATION	MEADOW SOLAR FARM LTD.	13096774
ELECTRICITY GENERATION	MEDWAY POWER LTD.	02537903
ELECTRICITY GENERATION	MELKSHAM CALNE GREEN LTD.	12517251
ELECTRICITY GENERATION	MELKSHAM EAST STORAGE LTD.	10915277
ELECTRICITY GENERATION	MELKSHAM WEST STORAGE LTD.	10915393
ELECTRICITY GENERATION	MERCIA POWER RESPONSE (ALBION CLOSE) LTD.	10276812
ELECTRICITY GENERATION	MERCIA POWER RESPONSE (ASHER LANE 2) LTD.	10217188
ELECTRICITY GENERATION	MERCIA POWER RESPONSE (BRADLEY BALK LANE) LTD.	12282170
ELECTRICITY GENERATION	MERCIA POWER RESPONSE (CHESTERFIELD ROAD) LTD.	10217080
ELECTRICITY GENERATION	MERCIA POWER RESPONSE (COMMON LANE) LTD.	10276850
ELECTRICITY GENERATION	MERCIA POWER RESPONSE (COMMON SIDE LANE) LTD.	12282261
ELECTRICITY GENERATION	MERCIA POWER RESPONSE (CUCKOO ROAD) LTD.	10276822
ELECTRICITY GENERATION	MERCIA POWER RESPONSE (FORDBRIDGE LANE) LTD.	12576953
ELECTRICITY GENERATION	MERCIA POWER RESPONSE (FULWOOD ROAD) LTD.	11495004
ELECTRICITY GENERATION	MERCIA POWER RESPONSE (GEDDINGTON ROAD) LTD.	11857803
ELECTRICITY GENERATION	MERCIA POWER RESPONSE (GRAPHITE WAY) LTD.	10279538
ELECTRICITY GENERATION	MERCIA POWER RESPONSE (HALLAM WAY) LTD.	12395582
ELECTRICITY GENERATION	MERCIA POWER RESPONSE (HATTON) LTD.	12742143
ELECTRICITY GENERATION	MERCIA POWER RESPONSE (HIGH VIEW ROAD) LTD.	13522111
ELECTRICITY GENERATION	MERCIA POWER RESPONSE (MANNERS AVENUE 2) LTD.	10276831
ELECTRICITY GENERATION	MERCIA POWER RESPONSE (NOTTINGHAM ROAD) LTD.	10217239
ELECTRICITY GENERATION	MERCIA POWER RESPONSE (OUTGANG LANE) LTD.	10276869
ELECTRICITY GENERATION	MERCIA POWER RESPONSE (PONTEFRACT ROAD) LTD.	10217285
ELECTRICITY GENERATION	MERCIA POWER RESPONSE (PRIVATE ROAD NO.5) LTD.	10217008
ELECTRICITY GENERATION	MERCIA POWER RESPONSE (RIBY STREET) LTD.	12577743
ELECTRICITY GENERATION	MERCIA POWER RESPONSE (SANDY LANE) LTD.	10269414
ELECTRICITY GENERATION	MERCIA POWER RESPONSE (SOOKHOLME ROAD) LTD.	12282385

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ELECTRICITY GENERATION	MERCIA POWER RESPONSE (THE WOOD YARD) LTD.	10276847
ELECTRICITY GENERATION	MERCIA POWER RESPONSE (WELLINGTON ROAD) LTD.	11969489
ELECTRICITY GENERATION	MERCIA POWER RESPONSE (WHITTINGTON ROAD) LTD.	10217287
ELECTRICITY GENERATION	MERCIA POWER RESPONSE (WOOLASTON ROAD) LTD.	12591814
ELECTRICITY GENERATION	MERIDIAN SOLAR FARM LTD.	14887675
ELECTRICITY GENERATION	MEYGEN LTD.	SC347501
ELECTRICITY GENERATION	MGT TEESSIDE LTD.	06574235
ELECTRICITY GENERATION	MIDDLETON ENERGY STORAGE LTD.	13524329
ELECTRICITY GENERATION	MILLBROOK POWER LTD.	08920458
ELECTRICITY GENERATION	MINETY BATTERY STORAGE LTD.	10967566
ELECTRICITY GENERATION	MINETY SOUTH STORAGE 2 LTD.	10915188
ELECTRICITY GENERATION	MINETY SOUTH STORAGE LTD.	10915101
ELECTRICITY GENERATION	MINNYGAP ENERGY LTD.	09644754
ELECTRICITY GENERATION	MONA OFFSHORE WIND LTD.	13497266
ELECTRICITY GENERATION	MORAY OFFSHORE WINDFARM (EAST) LTD.	07101438
ELECTRICITY GENERATION	MORAY OFFSHORE WINDFARM (WEST) LTD.	10515140
ELECTRICITY GENERATION	MORECAMBE OFFSHORE WINDFARM LTD.	SC734062
ELECTRICITY GENERATION	MORECAMBE WIND LTD.	05294242
ELECTRICITY GENERATION	MORGAN CREDIT LTD.	006619V
ELECTRICITY GENERATION	MORGAN OFFSHORE WIND LTD.	13497271
ELECTRICITY GENERATION	MORVEN OFFSHORE WIND LTD.	13792251
ELECTRICITY GENERATION	Mossy Hill Shetland LTD.	07075398
ELECTRICITY GENERATION	MUIR MHÒR OFFSHORE WIND FARM LTD.	SC717262
ELECTRICITY GENERATION	NANT BACH WIND FARM LTD.	06834016
ELECTRICITY GENERATION	NATIVE RIVER LTD.	12997344
ELECTRICITY GENERATION	NAVITUS BAY DEVELOPMENT LTD.	07104972
ELECTRICITY GENERATION	NAZEING EAST POWER LTD.	11964765
ELECTRICITY GENERATION	NAZEING WEST POWER LTD.	11964864
ELECTRICITY GENERATION	NEART NA GAOITHE OFFSHORE WIND LTD.	SC356223
ELECTRICITY GENERATION	NECTON GRID SOLUTIONS LTD.	14655633
ELECTRICITY GENERATION	NEILSTON ENERGY LTD.	14098739
ELECTRICITY GENERATION	NEILSTON GRID SERVICES LTD.	12648776
ELECTRICITY GENERATION	NET ZERO TEESIDE POWER LTD.	12473751
ELECTRICITY GENERATION	NEVENDON ENERGY STORAGE LTD.	10275086
ELECTRICITY GENERATION	NEVERN POWER LTD.	09649396
ELECTRICITY GENERATION	NEXTPOWER EELPOWER CAMILLA LTD.	SC614202
ELECTRICITY GENERATION	NNB GENERATION COMPANY (HPC) LTD.	06937084
ELECTRICITY GENERATION	NORFOLK BOREAS LTD.	03722058
ELECTRICITY GENERATION	NORFOLK VANGUARD EAST LTD.	12476373
ELECTRICITY GENERATION	NORFOLK VANGUARD WEST LTD.	08141115
ELECTRICITY GENERATION	NORIKER STAUNCH LTD.	10238116
ELECTRICITY GENERATION	NORTH FALLS OFFSHORE WIND FARM LTD.	12435947

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ELECTRICITY GENERATION	NORTH KYLE WIND FARM LTD.	SC572042
ELECTRICITY GENERATION	NORTHERN HYDROPOWER LTD.	09396064
ELECTRICITY GENERATION	NORTHWICH POWER LTD.	09966649
ELECTRICITY GENERATION	NORTHWOLD SOLAR FARM LTD.	13271400
ELECTRICITY GENERATION	Norwich East Electric Forecourt Ltd	12037212)
ELECTRICITY GENERATION	NURSLING ENERGY TWO LTD.	11020721
ELECTRICITY GENERATION	OAKLANDS FARM SOLAR LTD.	12915335
ELECTRICITY GENERATION	OFFSHORE WIND POWER LTD.	SC605260
ELECTRICITY GENERATION	OGMORE POWER LTD.	09128094
ELECTRICITY GENERATION	OPTIMUS WIND LTD.	07883284
ELECTRICITY GENERATION	ORMONDE ENERGY LTD.	04874027
ELECTRICITY GENERATION	ORSTED ESS MERSEY LTD.	11206846
ELECTRICITY GENERATION	ORSTED HORNSEA PROJECT FOUR LTD.	08584182
ELECTRICITY GENERATION	ORSTED HORNSEA PROJECT THREE (UK) LTD.	08584210
ELECTRICITY GENERATION	ORSTED ICENI ESS (UK) LIMITED	13890904
ELECTRICITY GENERATION	Ossian Offshore Wind Farm LTD.	SC719670
ELECTRICITY GENERATION	OSSPV001 LTD.	10933403
ELECTRICITY GENERATION	OTM POWER GENERATION LTD.	15772357
ELECTRICITY GENERATION	OUSE ENERGY LTD.	13270213
ELECTRICITY GENERATION	PEAK GEN POWER 11 LTD.	09144127
ELECTRICITY GENERATION	PEAK GEN POWER 13 LTD.	09144209
ELECTRICITY GENERATION	PEAK GEN POWER 14 LTD.	09145062
ELECTRICITY GENERATION	PEAK GEN POWER 18 LTD.	09145186
ELECTRICITY GENERATION	PEAK GEN POWER 2 LTD.	08179576
ELECTRICITY GENERATION	PEAK GEN POWER 31 LTD.	12936838
ELECTRICITY GENERATION	PEAK GEN POWER 5 LTD.	08527380
ELECTRICITY GENERATION	PEAK GEN POWER 6 LTD.	08527433
ELECTRICITY GENERATION	PEAK GEN POWER LTD.	07344467
ELECTRICITY GENERATION	PELHAM STORAGE LTD.	10342347
ELECTRICITY GENERATION	PEN Y CYMOEDD WIND FARM LTD.	03494498
ELECTRICITY GENERATION	PENCLOE WIND ENERGY LTD.	SC398688
ELECTRICITY GENERATION	PENWORTHAM STORAGE LTD.	10915566
ELECTRICITY GENERATION	PHILIP DENNIS FOODSERVICE (HOLMSLEIGH) LTD.	07628116
ELECTRICITY GENERATION	PITKEVEY BATTERY STORAGE LTD.	SC668224
ELECTRICITY GENERATION	PIVOTED POWER LLP	OC420973
ELECTRICITY GENERATION	POINT ENERGY EM LTD.	SC609061
ELECTRICITY GENERATION	POWER INITIATIVES (2) LTD.	11656450
ELECTRICITY GENERATION	PRIESTGILL WIND FARM LTD.	07640919
ELECTRICITY GENERATION	PROGRESS POWER LTD.	08421833
ELECTRICITY GENERATION	Pulse Clean Energy SPV Anderson LTD.	11018103
ELECTRICITY GENERATION	Pulse Clean Energy SPV Anning LTD.	12246264
ELECTRICITY GENERATION	Pulse Clean Energy SPV Bell LTD.	14307357

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ELECTRICITY GENERATION	Pulse Clean Energy SPV Franklin LTD.	13726084
ELECTRICITY GENERATION	PULSE CLEAN ENERGY SPV JOHNSON 1 LIMITED	13277036
ELECTRICITY GENERATION	PULSE CLEAN ENERGY SPV JOHNSON 2 LIMITED	13389796
ELECTRICITY GENERATION	PULSE CLEAN ENERGY SPV JOHNSON 3 LIMITED	14359168
ELECTRICITY GENERATION	Pulse Clean Energy SPV Rubin LTD.	13169020
ELECTRICITY GENERATION	Pulse Clean Energy SPV Watt LTD.	13302073
ELECTRICITY GENERATION	PULSE CLEAN ENERGY UK LTD.	07609301
ELECTRICITY GENERATION	PYEBRIDGE POWER LTD.	13499825
ELECTRICITY GENERATION	R&S ENERGY LTD.	13518341
ELECTRICITY GENERATION	RACE BANK WIND FARM LTD.	05017828
ELECTRICITY GENERATION	RAMPION EXTENSION DEVELOPMENT LTD.	12091939
ELECTRICITY GENERATION	RAMPION OFFSHORE WIND LTD.	07199847
ELECTRICITY GENERATION	RASSAU GRID SERVICES LTD.	10211708
ELECTRICITY GENERATION	RECTORY FARM ENERGY STORAGE LTD.	13685583
ELECTRICITY GENERATION	REDLAKE POWER LTD.	09415417
ELECTRICITY GENERATION	RELIABLE GENERATION LTD.	10507680
ELECTRICITY GENERATION	RENESOLA HERCULES ENERGY 1 LTD.	13057891
ELECTRICITY GENERATION	RESERVE POWER TRADING LTD	9548349
ELECTRICITY GENERATION	RICHBOROUGH A LTD.	77919
ELECTRICITY GENERATION	RICHBOROUGH ENERGY PARK LTD.	10158720
ELECTRICITY GENERATION	RIVER NENE POWER LTD.	04262250
ELECTRICITY GENERATION	ROARING HILL ENERGY STORAGE LTD.	10272710
ELECTRICITY GENERATION	ROCKSAVAGE POWER COMPANY LTD.	FC018868
ELECTRICITY GENERATION	ROSSINGTON POWER LTD.	10313195
ELECTRICITY GENERATION	ROTHIENORMAN GRID SERVICES LTD.	12648462
ELECTRICITY GENERATION	RUGELEY POWER GENERATION LTD.	03300792
ELECTRICITY GENERATION	RUGELEY WEST POWER LTD.	11504378
ELECTRICITY GENERATION	RWE GENERATION UK PLC	03892782
ELECTRICITY GENERATION	RWE RENEWABLES UK DOGGER BANK SOUTH (EAST) LTD.	13656240
ELECTRICITY GENERATION	RWE RENEWABLES UK DOGGER BANK SOUTH (WEST) LTD.	13656525
ELECTRICITY GENERATION	RWE RENEWABLES UK HUMBER WIND LTD.	04899318
ELECTRICITY GENERATION	RWE RENEWABLES UK ONSHORE WIND LTD.	03758407
ELECTRICITY GENERATION	RWE Renewables UK Solar and Storage LTD.	14539260
ELECTRICITY GENERATION	S & C ENERGY LTD.	15167268
ELECTRICITY GENERATION	SALTEND COGENERATION COMPANY LTD.	03274929
ELECTRICITY GENERATION	SALTHOLME NORTH POWER LTD.	11504313
ELECTRICITY GENERATION	SALTHOLME SOUTH POWER LTD.	11504316
ELECTRICITY GENERATION	SAMBAR POWER LTD.	SC380227
ELECTRICITY GENERATION	SANDON BROOK SOLAR FARM LTD.	13092062
ELECTRICITY GENERATION	SANDRIDGE BATTERY STORAGE LTD.	11161170
ELECTRICITY GENERATION	SANDWELL POWER LTD.	09854164

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ELECTRICITY GENERATION	SANQUHAR II COMMUNITY WIND CO LTD.	SC449688
ELECTRICITY GENERATION	SCIRA EXTENSION LTD.	12239260
ELECTRICITY GENERATION	SCIRA OFFSHORE ENERGY LTD.	05119310
ELECTRICITY GENERATION	SCOOP HILL COMMUNITY WIND COMPANY LTD.	SC637992
ELECTRICITY GENERATION	SCOTTISHPOWER RENEWABLES (UK) LTD.	NI028425
ELECTRICITY GENERATION	SEABANK POWER LTD.	02591188
ELECTRICITY GENERATION	SEAGREEN 1A LTD.	12575047
ELECTRICITY GENERATION	SEAGREEN ALPHA WIND ENERGY LTD.	07185533
ELECTRICITY GENERATION	SEAGREEN BRAVO WIND ENERGY LTD.	07185543
ELECTRICITY GENERATION	SEAGREEN WIND ENERGY LTD.	06873902
ELECTRICITY GENERATION	SEAMER POWER LTD.	10698870
ELECTRICITY GENERATION	SELBY POWER LTD.	09415320
ELECTRICITY GENERATION	SELLAFIELD LTD.	01002607
ELECTRICITY GENERATION	SELLINDGE GRID SERVICES LTD.	12395277
ELECTRICITY GENERATION	SEMBCORP (WILTON BESS) LTD.	15151480
ELECTRICITY GENERATION	SEVERN POWER LTD.	05392552
ELECTRICITY GENERATION	SG GRI TILN BESS LTD.	09731195
ELECTRICITY GENERATION	SHEAF ENERGY LTD.	13270168
ELECTRICITY GENERATION	SHEEPWASH CLEAN ENERGY LTD.	13940316
ELECTRICITY GENERATION	SIMEC GHR KELTNEYBURN HYDRO LTD.	SC237428
ELECTRICITY GENERATION	SIMEC WIND ONE LTD.	10060100
ELECTRICITY GENERATION	SIZEWELL C LTD.	09284825
ELECTRICITY GENERATION	SIZING JOHN LIMITED	12997545
ELECTRICITY GENERATION	SL SOLAR SERVICES LTD.	08679764
ELECTRICITY GENERATION	SLICKLY WIND FARM LTD.	11248508
ELECTRICITY GENERATION	SMS ENERGY SERVICES LTD.	03197379
ELECTRICITY GENERATION	SOFIA OFFSHORE WIND FARM LTD.	07791964
ELECTRICITY GENERATION	SOLARFIVE LTD.	12602740
ELECTRICITY GENERATION	SONNINGMAY WIND LTD.	10722635
ELECTRICITY GENERATION	SOUNDMARK WIND LTD.	10721881
ELECTRICITY GENERATION	SOUTH KYLE WIND FARM LTD.	SC617500
ELECTRICITY GENERATION	SOUTH SHIELDS ENERGY STORAGE LTD.	10272711
ELECTRICITY GENERATION	SPALDING ENERGY COMPANY LTD.	FC019668
ELECTRICITY GENERATION	SPALDING ENERGY EXPANSION LTD.	06790895
ELECTRICITY GENERATION	SPALDING ENERGY PARK LTD.	11217625
ELECTRICITY GENERATION	SPECTRUMRESERVE4 LTD.	10726547
ELECTRICITY GENERATION	SPECTRUMRESERVE5 LTD.	10726784
ELECTRICITY GENERATION	SPENNYMOOR GRID SOLUTIONS LTD.	14655746
ELECTRICITY GENERATION	SPEP LTD.	07251691
ELECTRICITY GENERATION	SPIORAD NA MARA LTD.	SC717716
ELECTRICITY GENERATION	SSDC OPIUM POWER LTD.	11342833

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ELECTRICITY GENERATION	SSE BATTERY MONK FRYSTON LTD.	13212047
ELECTRICITY GENERATION	SSE BATTERY SALISBURY LTD.	11449338
ELECTRICITY GENERATION	SSE EGGBOROUGH LTD.	14939853
ELECTRICITY GENERATION	SSE FERRYBRIDGE BATTERY LTD.	14411214
ELECTRICITY GENERATION	SSE FIDDLERS FERRY BATTERY LTD.	14418916
ELECTRICITY GENERATION	SSE GENERATION LTD.	02310571
ELECTRICITY GENERATION	SSE RENEWABLES SOLAR & BATTERY HOLDINGS LTD.	13561962
ELECTRICITY GENERATION	SSE RENEWABLES WIND FARMS (UK) LTD.	SC654502
ELECTRICITY GENERATION	SSE STAYTHORPE POWER LTD.	14043534
ELECTRICITY GENERATION	SSE THERMAL GENERATION (SCOTLAND) LTD.	SC664055
ELECTRICITY GENERATION	SSEPG (OPERATIONS) LTD.	02764438
ELECTRICITY GENERATION	ST ASAPH POWER LTD.	09649240
ELECTRICITY GENERATION	STAIRFOOT GENERATION LTD.	11629881
ELECTRICITY GENERATION	STARGOOSE CLEAN ENERGY LTD.	12186594
ELECTRICITY GENERATION	STAT-FLEX 3 LTD.	11505233
ELECTRICITY GENERATION	STATKRAFT HIGHLANDS PSH LIMITED	SC581757
ELECTRICITY GENERATION	STEEPLE SOLAR FARM LTD.	13889253
ELECTRICITY GENERATION	STENSON LANE BESS LTD.	15333950
ELECTRICITY GENERATION	STONY ENERGY STORAGE LTD.	10272709
ELECTRICITY GENERATION	STRATHY WIND FARM LTD.	SC663103
ELECTRICITY GENERATION	STROMAR OFFSHORE WIND FARM LTD.	SC716924
ELECTRICITY GENERATION	STRONELAIRG WIND FARM LTD.	SC607491
ELECTRICITY GENERATION	SUNDON GREEN LTD.	12726010
ELECTRICITY GENERATION	SUNDON STORAGE LTD.	15795973
ELECTRICITY GENERATION	SUNNICA LTD.	08826077
ELECTRICITY GENERATION	SUSI EELPOWER DUNSINANE LTD.	12356110
ELECTRICITY GENERATION	SUSI EELPOWER FORDTOWN LTD.	SC595142
ELECTRICITY GENERATION	SUSI EELPOWER HALESWORTH LTD.	13177650
ELECTRICITY GENERATION	SUSI EELPOWER LEVERTON LTD.	10644563
ELECTRICITY GENERATION	SUSI EELPOWER ROCK FARM LTD.	10051244
ELECTRICITY GENERATION	SUSI EELPOWER WINCHESTER LTD.	10970075
ELECTRICITY GENERATION	SUTTON BRIDGE POWER GENERATION	02586357
ELECTRICITY GENERATION	SW MANNINGTON LTD.	12268599
ELECTRICITY GENERATION	SWANGATE ENERGY STORAGE LTD.	12644984
ELECTRICITY GENERATION	Swansea Grid Solutions LTD.	12371459
ELECTRICITY GENERATION	SWB SKELMERSDALE LTD.	10266224
ELECTRICITY GENERATION	SWB ST HELENS LTD.	11142400
ELECTRICITY GENERATION	SYMBIO ENERGY LTD.	07999360
ELECTRICITY GENERATION	SYNPOWER ENERGY GENERATION LTD.	10988437
ELECTRICITY GENERATION	TESLA MOTORS LTD.	04384008
ELECTRICITY GENERATION	TETRAGEN HOLDINGS LTD.	07930565
ELECTRICITY GENERATION	TETSWORTH NORTH POWER LTD.	11504348

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ELECTRICITY GENERATION	TETSWORTH SOUTH POWER LTD.	11504339
ELECTRICITY GENERATION	TGC EMERALD LTD.	09647923
ELECTRICITY GENERATION	THANET OFFSHORE WIND LTD.	04512200
ELECTRICITY GENERATION	THE DROVES SOLAR FARM LTD.	14684480
ELECTRICITY GENERATION	THE NUCLEAR DECOMMISSIONING AUTHORITY	none
ELECTRICITY GENERATION	Thistle Wind Partners Cluaran Deas Ear LTD.	13847868
ELECTRICITY GENERATION	Thistle Wind Partners Cluaran Ear-Thuath LTD.	13847599
ELECTRICITY GENERATION	THORPE MARSH ENERGY PARK LTD.	12242673
ELECTRICITY GENERATION	THORPE MARSH GREEN ENERGY HUB LTD.	14403918
ELECTRICITY GENERATION	THORPE MARSH POWER LTD.	06637894
ELECTRICITY GENERATION	THRIVE RENEWABLES (WICKEN) LTD.	12190404
ELECTRICITY GENERATION	THURROCK FLEXIBLE GENERATION LTD.	10917470
ELECTRICITY GENERATION	THURROCK POWER LTD.	14888040
ELECTRICITY GENERATION	THURROCK STORAGE LTD.	14893544
ELECTRICITY GENERATION	THURSO GRID SERVICES LTD.	12393509
ELECTRICITY GENERATION	TI PROJECTCO 1 LTD.	14410303
ELECTRICITY GENERATION	TI PROJECTCO 2 LTD.	14410318
ELECTRICITY GENERATION	TI PROJECTCO 3 LTD.	14410414
ELECTRICITY GENERATION	TILLINGHAM POWER LTD.	09130931
ELECTRICITY GENERATION	TINZ PROGRAMME 1 PROJECTCO 1 LTD.	13078692
ELECTRICITY GENERATION	TINZ PROGRAMME 1 PROJECTCO 2 LTD.	13078723
ELECTRICITY GENERATION	TINZ PROGRAMME 1 PROJECTCO 3 LTD.	13078880
ELECTRICITY GENERATION	TOLLGATE ENERGY STORAGE LTD.	13048014
ELECTRICITY GENERATION	TRENT BESS II LTD.	14548773
ELECTRICITY GENERATION	TRITON KNOLL OFFSHORE WIND FARM LTD.	03696654
ELECTRICITY GENERATION	TURNCOLE WIND FARM LTD.	09069277
ELECTRICITY GENERATION	TYNEMOUTH ENERGY STORAGE LTD.	07873618
ELECTRICITY GENERATION	UK BATTERY STORAGE LTD.	10870671
ELECTRICITY GENERATION	UK CAPACITY RESERVE LTD.	09152381
ELECTRICITY GENERATION	UK ENERGY STORAGE SERVICES LTD.	10001405
ELECTRICITY GENERATION	UK POWER RESERVE (TRUMFLEET) LTD.	07004203
ELECTRICITY GENERATION	UK POWER RESERVE LTD.	07385282
ELECTRICITY GENERATION	ULZIESIDE WIND ENERGY LTD.	SC386880
ELECTRICITY GENERATION	UNIPER UK LTD.	02796628
ELECTRICITY GENERATION	URBAN RESERVE (ASSETCO 2) LTD.	14421977
ELECTRICITY GENERATION	URBAN RESERVE (ASSETCO) LTD.	11323479
ELECTRICITY GENERATION	URBAN RESERVE STORAGE LTD.	13068772
ELECTRICITY GENERATION	VATTENFALL WIND POWER LTD.	06205750
ELECTRICITY GENERATION	VIKING ENERGY WIND FARM LLP	SO305400
ELECTRICITY GENERATION	VPI IMMINGHAM B LTD.	10630563
ELECTRICITY GENERATION	VPI IMMINGHAM ENERGY PARK A LTD.	11153063
ELECTRICITY GENERATION	VPI IMMINGHAM LLP	OC300980

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ELECTRICITY GENERATION	VPI POWER LTD.	SC189124
ELECTRICITY GENERATION	W4B RENEWABLE ENERGY LTD.	06479668
ELECTRICITY GENERATION	WALNEY (UK) OFFSHORE WINDFARMS LTD.	05246622
ELECTRICITY GENERATION	WALNEY EXTENSION LTD.	07306956
ELECTRICITY GENERATION	WALPOLE GREEN LTD.	12517507
ELECTRICITY GENERATION	WARLEY GREEN LTD.	12725706
ELECTRICITY GENERATION	WARRINGTON POWER LTD.	10309446
ELECTRICITY GENERATION	Warrington Renewables (Hull) LTD.	10270778
ELECTRICITY GENERATION	Warrington Renewables (York) LTD.	10270743
ELECTRICITY GENERATION	WEDNESBURY POWER LTD.	09120513
ELECTRICITY GENERATION	WEST BURTON B LTD.	13027787
ELECTRICITY GENERATION	WEST BURTON C LTD.	13956629
ELECTRICITY GENERATION	WEST BURTON SOLAR PROJECT LTD.	13049324
ELECTRICITY GENERATION	WEST DIDSBURY STORAGE LTD.	10915557
ELECTRICITY GENERATION	WEST GARTY RENEWABLES LLP	SO304934
ELECTRICITY GENERATION	WEST MIDLANDS GRID STORAGE TWO LTD.	10637338
ELECTRICITY GENERATION	WESTERMOST ROUGH LTD.	06232914
ELECTRICITY GENERATION	WESTFIELD SM LTD.	9305317
ELECTRICITY GENERATION	WESTWOOD POWER LTD.	10208400
ELECTRICITY GENERATION	WHADDON FARM SOLAR PARK LTD.	13190271
ELECTRICITY GENERATION	WHARF POWER LTD.	09752795
ELECTRICITY GENERATION	WHARFSIDE POWER LTD.	14686535
ELECTRICITY GENERATION	WHEATEN HILL BESS LTD.	14197901
ELECTRICITY GENERATION	WHITE CROSS OFFSHORE WINDFARM LTD.	SC734076
ELECTRICITY GENERATION	WHITESTONE NET ZERO LTD.	15826972
ELECTRICITY GENERATION	WHITETOWER ENERGY LTD.	03479694
ELECTRICITY GENERATION	WILLINGTON POWER LTD.	10125876
ELECTRICITY GENERATION	WILLOWIND LINFAIRN LTD.	SC383229
ELECTRICITY GENERATION	WOLVERHAMPTON POWER LTD.	09120557
ELECTRICITY GENERATION	YORKSHIRE HYDROPOWER LTD.	09076541
ELECTRICITY GENERATION	ZENIC ENERGY LTD.	11050823
ELECTRICITY GENERATION	ZENOBE BLACKHILLOCK LTD.	12246552
ELECTRICITY GENERATION	ZENOBE BRINDLEY LTD.	12246501
ELECTRICITY GENERATION	ZENOBE CAPENHURST LTD.	12246481
ELECTRICITY GENERATION	ZENOBE ECCLES LTD.	12249742
ELECTRICITY GENERATION	ZENOBE KILMARNOCK SOUTH LTD.	12246505
ELECTRICITY GENERATION	ZENOBE WISHAW LTD.	10726477
ELECTRICITY INTERCONNECTOR	AMINTH ENERGY LTD.	11049753
ELECTRICITY INTERCONNECTOR	AQUIND LTD.	06681477
ELECTRICITY INTERCONNECTOR	BRITNED DEVELOPMENT LTD.	04251409
ELECTRICITY INTERCONNECTOR	CHANNEL CABLE LTD.	07054941
ELECTRICITY INTERCONNECTOR	CRONOS ENERGY LTD.	10768224

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ELECTRICITY INTERCONNECTOR	EAST WEST CABLE ONE LTD.	419119
ELECTRICITY INTERCONNECTOR	EIRGRID INTERCONNECTOR DESIGNATED ACTIVITY COMPANY	473045
ELECTRICITY INTERCONNECTOR	ELECLINK LTD.	07595420
ELECTRICITY INTERCONNECTOR	FAB LINK LTD.	54637
ELECTRICITY INTERCONNECTOR	GETLINK PROJECTS 2 LTD.	15001715
ELECTRICITY INTERCONNECTOR	GREENLINK INTERCONNECTOR LTD.	0536954
ELECTRICITY INTERCONNECTOR	GRIDLINK INTERCONNECTOR LTD.	10181689
ELECTRICITY INTERCONNECTOR	MaresConnect LTD.	605488
ELECTRICITY INTERCONNECTOR	MOYLE INTERCONNECTOR LTD.	NI036562
ELECTRICITY INTERCONNECTOR	NATIONAL GRID IFA 2 LTD.	09129992
ELECTRICITY INTERCONNECTOR	NATIONAL GRID INTERCONNECTORS LTD.	03385525
ELECTRICITY INTERCONNECTOR	National Grid Lion Link LTD.	14722364
ELECTRICITY INTERCONNECTOR	National Grid Nautilus LTD.	14721275
ELECTRICITY INTERCONNECTOR	NATIONAL GRID NORTH SEA LINK LTD.	08082344
ELECTRICITY INTERCONNECTOR	NATIONAL GRID VIKING LTD.	09075537
ELECTRICITY INTERCONNECTOR	NEMO LINK LTD.	08169409
ELECTRICITY INTERCONNECTOR	NEUCONNECT BRITAIN LTD.	11138769
ELECTRICITY INTERCONNECTOR	NORTHCONNECT LTD.	SC633953
ELECTRICITY INTERCONNECTOR	NU-LINK INTERCONNECTOR UK LTD.	14373045
ELECTRICITY INTERCONNECTOR	TARCHON ENERGY LTD.	11040231
ELECTRICITY INTERCONNECTOR	TI LIRIC LTD.	12300898
ELECTRICITY SUPPLY (DOMESTIC & NON-DOM)	ARTO.ENERGY LTD.	09263398
ELECTRICITY SUPPLY (DOMESTIC & NON-DOM)	AXPO UK LTD.	06600942
ELECTRICITY SUPPLY (DOMESTIC & NON-DOM)	BRITISH GAS TRADING LTD.	03078711
ELECTRICITY SUPPLY (DOMESTIC & NON-DOM)	BROOK GREEN TRADING LTD.	09523064
ELECTRICITY SUPPLY (DOMESTIC & NON-DOM)	BRYT ENERGY LTD.	10167351
ELECTRICITY SUPPLY (DOMESTIC & NON-DOM)	CONSTELLATION GENERATION LTD.	09198137
ELECTRICITY SUPPLY (DOMESTIC & NON-DOM)	CO-OPERATIVE ENERGY LTD.	06993470
ELECTRICITY SUPPLY (DOMESTIC & NON-DOM)	CORONA ENERGY RETAIL 4 LTD.	02798334
ELECTRICITY SUPPLY (DOMESTIC & NON-DOM)	D-ENERGI TRADING LTD.	10769307
ELECTRICITY SUPPLY (DOMESTIC & NON-DOM)	DGP ENERGY LTD.	09933244
ELECTRICITY SUPPLY (DOMESTIC & NON-DOM)	DIGITAL POWER ENERGY SUPPLY UK LTD.	11042157
ELECTRICITY SUPPLY (DOMESTIC & NON-DOM)	DRAX ENERGY SOLUTIONS LTD.	05893966
ELECTRICITY SUPPLY (DOMESTIC & NON-DOM)	E (GAS AND ELECTRICITY) LTD.	08520118
ELECTRICITY SUPPLY (DOMESTIC & NON-DOM)	E.ON ENERGY SOLUTIONS LTD.	03407430
ELECTRICITY SUPPLY (DOMESTIC & NON-DOM)	E.ON NEXT ENERGY LTD.	03782443

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ELECTRICITY SUPPLY (DOMESTIC & NON-DOM)	ECOTRICITY LTD.	03043412
ELECTRICITY SUPPLY (DOMESTIC & NON-DOM)	EDF ENERGY CUSTOMERS LTD.	02228297
ELECTRICITY SUPPLY (DOMESTIC & NON-DOM)	ELECTRICITY PLUS SUPPLY LTD.	05199936
ELECTRICITY SUPPLY (DOMESTIC & NON-DOM)	ELECTROROUTE ENERGY LTD.	10364177
ELECTRICITY SUPPLY (DOMESTIC & NON-DOM)	ENECO ENERGY TRADE BV	30167836
ELECTRICITY SUPPLY (DOMESTIC & NON-DOM)	ENGIE POWER LTD.	04236804
ELECTRICITY SUPPLY (DOMESTIC & NON-DOM)	EVOLVE ENERGY SUPPLY LTD.	09523024
ELECTRICITY SUPPLY (DOMESTIC & NON-DOM)	FOXGLOVE ENERGY SUPPLY LTD.	09689035
ELECTRICITY SUPPLY (DOMESTIC & NON-DOM)	FUSE ENERGY SUPPLY LTD.	08469701
ELECTRICITY SUPPLY (DOMESTIC & NON-DOM)	GOOD ENERGY LTD.	03899612
ELECTRICITY SUPPLY (DOMESTIC & NON-DOM)	GREEN ENERGY (UK) LTD.	04194006
ELECTRICITY SUPPLY (DOMESTIC & NON-DOM)	HARTREE PARTNERS SUPPLY (UK) LTD.	09283816
ELECTRICITY SUPPLY (DOMESTIC & NON-DOM)	HIGHLAND ELECTRICITY LTD.	12665145
ELECTRICITY SUPPLY (DOMESTIC & NON-DOM)	HOME ENERGY TRADING LTD.	10364306
ELECTRICITY SUPPLY (DOMESTIC & NON-DOM)	Jellyfish Energy Limited	09310083
ELECTRICITY SUPPLY (DOMESTIC & NON-DOM)	MARBLE POWER LTD.	08474535
ELECTRICITY SUPPLY (DOMESTIC & NON-DOM)	MAXEN POWER SUPPLY LTD.	10298693
ELECTRICITY SUPPLY (DOMESTIC & NON-DOM)	MVV ENVIRONMENT SERVICES LTD.	08500792
ELECTRICITY SUPPLY (DOMESTIC & NON-DOM)	NEAS ENERGY LTD.	06993636
ELECTRICITY SUPPLY (DOMESTIC & NON-DOM)	OCTOPUS ENERGY LTD.	09263424
ELECTRICITY SUPPLY (DOMESTIC & NON-DOM)	OCTOPUS ENERGY OPERATIONS 2 LTD.	05070887
ELECTRICITY SUPPLY (DOMESTIC & NON-DOM)	OCTOPUS ENERGY OPERATIONS LTD.	14415312
ELECTRICITY SUPPLY (DOMESTIC & NON-DOM)	OCTOPUS ENERGY TRADING LTD.	09263368
ELECTRICITY SUPPLY (DOMESTIC & NON-DOM)	OPUS ENERGY (CORPORATE) LTD.	05199937
ELECTRICITY SUPPLY (DOMESTIC & NON-DOM)	OPUS ENERGY LTD.	04382246
ELECTRICITY SUPPLY (DOMESTIC & NON-DOM)	OPUS ENERGY RENEWABLES LTD.	07126582
ELECTRICITY SUPPLY (DOMESTIC & NON-DOM)	OVO (S) ELECTRICITY LTD.	04094263
ELECTRICITY SUPPLY (DOMESTIC & NON-DOM)	OVO ELECTRICITY LTD.	06858121
ELECTRICITY SUPPLY (DOMESTIC & NON-DOM)	OVO ENERGY LTD.	06890795
ELECTRICITY SUPPLY (DOMESTIC & NON-DOM)	PLANET 9 ENERGY LTD.	10167383
ELECTRICITY SUPPLY (DOMESTIC & NON-DOM)	SCOTTISH POWER ENERGY RETAIL LTD.	SC190287

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ELECTRICITY SUPPLY (DOMESTIC & NON-DOM)	SHELL ENERGY UK LTD.	07489042
ELECTRICITY SUPPLY (DOMESTIC & NON-DOM)	SINQ POWER LTD.	09284085
ELECTRICITY SUPPLY (DOMESTIC & NON-DOM)	SMARTESTENERGY BUSINESS LTD.	06468946
ELECTRICITY SUPPLY (DOMESTIC & NON-DOM)	SO ENERGY TRADING LTD.	09263295
ELECTRICITY SUPPLY (DOMESTIC & NON-DOM)	SQUARE1 ENERGY LTD.	11042192
ELECTRICITY SUPPLY (DOMESTIC & NON-DOM)	SQUEAKY CLEAN ENERGY LTD.	09812682
ELECTRICITY SUPPLY (DOMESTIC & NON-DOM)	TOMATO ENERGY LTD.	09735768
ELECTRICITY SUPPLY (DOMESTIC & NON-DOM)	TOUCAN ENERGY LTD.	09688876
ELECTRICITY SUPPLY (DOMESTIC & NON-DOM)	TRU ENERGY LTD.	09735909
ELECTRICITY SUPPLY (DOMESTIC & NON-DOM)	UNIFY ENERGY LTD.	09523118
ELECTRICITY SUPPLY (DOMESTIC & NON-DOM)	UNITED GAS & POWER TRADING LTD.	09995683
ELECTRICITY SUPPLY (DOMESTIC & NON-DOM)	UTILITA ENERGY LTD.	04849181
ELECTRICITY SUPPLY (DOMESTIC & NON-DOM)	VALDA ENERGY LTD.	11212563
ELECTRICITY SUPPLY (DOMESTIC & NON-DOM)	VOLTX POWER LTD.	11042718
ELECTRICITY SUPPLY (DOMESTIC & NON-DOM)	YU ENERGY RETAIL LTD.	08246810
ELECTRICITY SUPPLY (NON-DOMESTIC)		
ELECTRICITY SUPPLY (NON-DOMESTIC)	BARBICAN POWER LTD.	08474516
ELECTRICITY SUPPLY (NON-DOMESTIC)	BGI TRADING LTD.	10971802
ELECTRICITY SUPPLY (NON-DOMESTIC)	BP GAS MARKETING LTD.	00908982
ELECTRICITY SUPPLY (NON-DOMESTIC)	CONRAD ENERGY (TRADING) LTD.	10969329
ELECTRICITY SUPPLY (NON-DOMESTIC)	COULOMB ENERGY SUPPLY LTD.	07488842
ELECTRICITY SUPPLY (NON-DOMESTIC)	CROWN GAS AND POWER 2 LTD.	11357910
ELECTRICITY SUPPLY (NON-DOMESTIC)	DYCE ENERGY LTD.	09995796
ELECTRICITY SUPPLY (NON-DOMESTIC)	E E SOLUTIONS LTD.	06748590
ELECTRICITY SUPPLY (NON-DOMESTIC)	E.ON UK PLC	02366970
ELECTRICITY SUPPLY (NON-DOMESTIC)	EDGWARE ENERGY LTD.	09256462
ELECTRICITY SUPPLY (NON-DOMESTIC)	Engelhart CTP Energy UK LTD.	11751953
ELECTRICITY SUPPLY (NON-DOMESTIC)	EPG ENERGY LTD.	06616147
ELECTRICITY SUPPLY (NON-DOMESTIC)	EQUINICITY LTD.	11374646
ELECTRICITY SUPPLY (NON-DOMESTIC)	F & S ENERGY LTD.	07524841
ELECTRICITY SUPPLY (NON-DOMESTIC)	FARRINGDON ENERGY LTD.	09256369
ELECTRICITY SUPPLY (NON-DOMESTIC)	FLEXITRICITY LTD.	SC263298
ELECTRICITY SUPPLY (NON-DOMESTIC)	HOLBORN ENERGY LTD.	08246795
ELECTRICITY SUPPLY (NON-DOMESTIC)	LIMEJUMP ENERGY LTD.	08246300
ELECTRICITY SUPPLY (NON-DOMESTIC)	NPOWER COMMERCIAL GAS LTD.	03768856
ELECTRICITY SUPPLY (NON-DOMESTIC)	POZITIVE ENERGY LTD.	09523048
ELECTRICITY SUPPLY (NON-DOMESTIC)	PX SUPPLY LTD.	10738921

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ELECTRICITY SUPPLY (NON-DOMESTIC)	RADIUS ENERGY LTD.	11211289
ELECTRICITY SUPPLY (NON-DOMESTIC)	REGENT POWER LTD.	09875997
ELECTRICITY SUPPLY (NON-DOMESTIC)	RENATIS ENERGY TRADING SRL. UK BRANCH	BR022176
ELECTRICITY SUPPLY (NON-DOMESTIC)	RUBY ELECTRICITY LTD.	06882734
ELECTRICITY SUPPLY (NON-DOMESTIC)	Sefe Energy LTD.	03904624
ELECTRICITY SUPPLY (NON-DOMESTIC)	SMART PAY ENERGY LTD.	10971782
ELECTRICITY SUPPLY (NON-DOMESTIC)	SMARTESTENERGY LTD.	03994598
ELECTRICITY SUPPLY (NON-DOMESTIC)	SSE ENERGY SUPPLY LTD.	03757502
ELECTRICITY SUPPLY (NON-DOMESTIC)	STATKRAFT MARKETS GMBH	HRB37885
ELECTRICITY SUPPLY (NON-DOMESTIC)	THE NUCLEAR DECOMMISSIONING AUTHORITY	none
ELECTRICITY SUPPLY (NON-DOMESTIC)	TOTALENERGIES GAS & POWER LTD.	02172239
ELECTRICITY SUPPLY (NON-DOMESTIC)	TRADELINK SOLUTIONS LTD.	03017466
ELECTRICITY SUPPLY (NON-DOMESTIC)	UC ENERGY LTD.	10972017
ELECTRICITY SUPPLY (NON-DOMESTIC)	UK POWER RESERVE LTD.	07385282
ELECTRICITY SUPPLY (NON-DOMESTIC)	UNITED GAS & POWER LTD.	08358816
ELECTRICITY SUPPLY (NON-DOMESTIC)	VATTENFALL ENERGY TRADING GMBH	HRB 80335
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APPENDIX 3 – 2

Office of the Chief Executive

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Newington House
237 Southwark Bridge Road
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Registered in England and Wales No: 7290590

Company:
UK Power Networks Holdings Limited
[redacted]

UK Power Networks
Delivering your electricity

[redacted]
Interim Head of European Wholesale Markets
Ofgem
10 South Colonnade
Canary Wharf
LONDON
E14 4PU

By email only to: EUExit@ofgem.gov.uk

24 December 2020

Dear [redacted]

Preparing for the end of the transition period: Statutory consultation on consequential licence modifications due to the end of the transition period

Thank you for the opportunity to comment on the above statutory consultation, dated 12 October 2020. This response should be regarded as a consolidated response on behalf of UK Power Networks' affected distribution licence holding companies: Eastern Power Networks plc; London Power Networks plc; and South Eastern Power Networks plc.

Having reviewed the draft amendments to the licence condition we are comfortable with the changes and have no comments to make.

If you have any queries on our response please contact Paul Measday in the first instance.

Yours sincerely

[redacted]
Chief Executive Officer
UK Power Networks

Copy: [redacted] Director of Customer Service, Strategy, Regulation & IS, UK Power Networks
Head of Regulation & Regulatory Finance, UK Power Networks
, Regulatory Returns & Compliance Manager, UK Power Networks

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APPENDIX 5 – 1

PLANNING AND INFRASTRUCTURE BILL 2025 – HANSARD EXTRACTS ON HILLSIDE AMENDMENTS

1. PURPOSE

1.1 This document compiles verbatim extracts from the debates on the Planning and Infrastructure Bill concerning the Hillside decision. It includes the Second Reading (25 June 2025), Committee stage (11 September 2025) and Report stage (20, 22 and 27 October 2025) discussions, with amendment numbers and column references.

1.2 Next to each debate extract set out below is a link to the exact column of the Hansard extract so the debate can be viewed in context.

1.3 All debates on the bill can be found in one place here.

2. PLANNING AND INFRASTRUCTURE BILL SECOND READING - 25 JUNE 2025

Lord Banner 19:10 (column 319-320) Hansard Extract:

I endorse the streamlining of the NSIP regime, in particular, unsurprisingly, Clause 12's streamlining of the procedure for judicial review of NSIPs to cut down on delays caused by legal challenges. That is the only recommendation of my independent review that requires primary legislation to implement. The other recommendations require changes to the civil procedure rules, which are governed by the Civil Procedure Rule Committee. I would welcome clarification from the Minister of the anticipated timescale for implementing those other changes. My recommendations were put forward as one overall package, and it would be helpful to know when the rest of that package will be delivered. I would also welcome clarification of whether the changes to the CPR will be made in relation only to infrastructure judicial reviews or to judicial and statutory reviews in planning generally. My report looked only at infrastructure, but I do see merit—as do many others—in rolling out the reforms to cover planning reviews generally.

…

In the limited time I have, I turn to the improvements to the Bill that I would most like to see. First, an express general principle of proportionality in planning would give decision-makers, applicants, consultants and the courts reassurance that less can be more. It would also put an end to the days of environmental statements being delivered in lorries and DCO-examining inspectors asking over 2,000 written questions about a single project, both of which are real examples of the current default to prolixity that only clogs up the system and causes delay and additional cost.

The second improvement concerns the basic conditions for neighbourhood plans.

Currently, neighbourhood plans do not have to conform with national policy: they must have regard to it, but, having done that, they do not need to conform with it. This presents a significant loophole in the drive for greater strategic direction. Well-resourced parish councils in the areas of greatest unaffordability can, contrary to national policy, unilaterally pull up the ladder by, for example, deeming there to be no grey belt in their area or restricting development in their area to less than is required by national policy. Mark my words, this is what will happen if the basic conditions stay as they are. A single-sentence amendment to the basic conditions would put paid to this by requiring neighbourhood plans to conform to the framework, thus putting them in their proper place within the hierarchy of plan-making.

The third improvement concerns providing a legislative solution to the difficulties presented by the Hillside judgment on the relationship between overlapping planning permissions on the same site, where later permissions are sought to modify a large multi-phase development. This is a technical point, and I cannot possibly do it justice in a short speech. I know the Minister is aware of this issue, because we have discussed it. It is a huge issue for multi-phase projects; it adds massively to their risk profile, their finance costs and their attractiveness to inward investment.

I echo the comments of noble Lord, Lord Lansley: there are a number of tools in the Levelling-up and Regeneration Act that have not yet been exercised. LURA inserted new Section 73B into the Town and Country Planning Act 1990, which went a modest way to addressing this issue by allowing for limited material amendments to planning permissions. Section 73B does not go far enough, but even that has not been commenced. I do not understand why, or why the Bill before the House could not go further and deal completely with the Hillside problems. It would make a real difference.

3. HOUSE OF LORDS COMMITTEE STAGE – 11 SEPTEMBER 2025

Lord Banner (column 1736 -1737) Hansard Extract :

Amendment 169: After Clause 52, insert the following new Clause—"Relationship between overlapping permissions

After section 73A of the Town and Country Planning Act 1990 (planning permission for development already carried out), insert—"73AA Relationship between overlapping permissions

(1) Where there is more than one planning permission which relates to some or all of the same land, the lawfulness of both past and future development carried out pursuant to one of those planning permissions shall be unaffected by the carrying out of development pursuant to another of those planning permissions, except to the extent expressly stated in any of those permissions or in any obligation under section 106 of this Act (planning obligations) related to any of those permissions.

(2) Subsection (1) applies only where one of the relevant planning permissions was granted after the day on which the Planning and Infrastructure Act 2025 is passed.

(3) In this section “planning permission” means—

(a) a planning permission under Part 3 of this Act, and

(b) a planning permission granted by article 3 (permitted development) of the Town and Country Planning (General Permitted Development) Order 2015 (S.I. 2015/596).””

Member's explanatory statement: This amendment addresses the potentially deleterious implications of the Supreme Court’s judgment in the Hillside Parks case.

My Lords, Amendment 169 seeks to mitigate the effect of the Supreme Court’s judgment in a case called Hillside. I should at the outset declare an interest, in that I was leading counsel in Hillside, albeit I am no longer retained by the party in question. It is a highly technical amendment but really important, and I will do my best for the record to summarise the problem. The Minister and I have had discussions, and I know she is aware of the issue.

Large developments—the most important ones for the growth this country needs—such as urban regeneration schemes, new settlements, large urban extensions, infrastructure and the like can take many years, and quite often decades, to build out. Over that time, it is almost inevitable that some of the details of the later phases will need, by the time they get built out, to change and adapt to evolving needs, to things that have changed in the economy or in our ways of life since the original planning permission was granted.

To put a bit of flesh on that, for example, a mixed-use urban extension might have offices in the later phases that can no longer be filled due to the post-Covid shift to working from home, which could not have been foreseen at the time the original outline permission was granted. Therefore, it may be proposed to swap out those offices, which would simply be a white elephant, for last mile logistics, as the need for that sector has increased. A hotel planned for a later phase may no longer be viable because of changing tourism patterns, but there may be a greater need for a care home instead.

A very well-known example is the largest outline permission in this country, Liverpool Waters. The planning permission for the regeneration of Liverpool Docklands was granted in 2011. The city council is on the record as indicating that would be a three-decade planning permission to build out. During the currency of that development, an opportunity was identified to relocate Everton Football Club into its amazing new stadium, which opened only a few weeks ago. Therefore, the development had to be

rejigged to accommodate the stadium.

For various reasons, applying for a new site-wide planning permission in circumstances where there has been a need to adapt and change in relation to evolving circumstances is not practical. It is too onerous in terms of the evidence base, because you need a new site-wide EIA, for example. It is too expensive for that reason, and due to the cost of planning fees for site-wide permissions and large-scale developments. Importantly, it is too slow, because everything would have to be reappraised. You would have to redo the surveys, which can take place only at certain times of the year, even in relation to those elements that are not changing, because the site-wide second permission would apply to the whole.

Therefore, a widespread practice has developed in the planning field in what is often called drop-in or stand-alone permissions, where the planning application red line is drawn not around the whole site area, but around the area it is going to change. In one of the examples I gave earlier, you would draw the line around the area earmarked for offices, not around the whole development. You would then apply to swap the particular development within that stand-alone planning permission area. The local authority would consider the planning merits of the change going on in that stand-alone area without having to re-appraise everything.

The developer would obviously have to make a good case for the change and if it did not, it would not be allowed. But if it did, and this routinely has happened, a change would be authorised. If permission was granted, the change would take effect pursuant to the stand-alone permission, so the area for the offices would become logistics in the example I gave, and the remainder of the wider development would proceed unchanged under the original site-wide permission.

The Supreme Court in the Hillside case has drastically affected this practice. The legal principle that the Supreme Court has enshrined is that if implementing a later stand-alone permission has the effect that it is now physically impossible in a material way to build out the site-wide permission in its entirety, the site-wide permission can no longer be relied on for any future development that is authorised by it but no longer built, so the residual site-wide permission is essentially lost, with very profound consequences.

There are sometimes workarounds, but they are incomplete and, even when they do exist, they can be uncertain, risky, cumbersome, slow and costly. To give a sense of the magnitude of this problem, since the Hillside judgment was given in late 2022, I estimate that I have written between 300 and 400 opinions on how to work around Hillside—so the one person who will lose out because of this amendment is me. This amendment would clear up the uncertainty and provide a clear route through.

I am not wedded to the precise drafting, if the Minister and her officials consider it could be improved. I expect the Minister will say that the Government recognise the difficulty presented by Hillside but that finding a solution to it is a complex matter which requires detailed consideration—and so it is. However, with respect, it is the job of the Government and Parliament to grapple with those complexities and come up with a workable solution, rather than kick the can down the road.

In that context, I point out that this Bill is the second piece of planning legislation to come before Parliament since the Hillside judgment was delivered by the Supreme Court, with the Levelling-up and Regeneration Act being the first. I fear that, if we do not come up with a solution to Hillside in the context of this Bill, the Government's and Parliament's credibility will diminish in the planning and development sector, because it will see us, at the second time of asking, still unable to come up with a solution for a real and widespread problem, one that is crying out for a legislative answer. I beg to move.

Lord Lansley (Column 1738 – 1739) Hansard Extract :

I am grateful to my noble friend Lord Banner for raising this issue through Amendment 169. His last point was that this is the second piece of planning legislation since the Hillside judgment in 2022. The earlier legislation was the Levelling-up and Regeneration Act 2023. My noble friend was not in your Lordships' House at the time of its consideration but he will no doubt have noted that Section 110 of the Act provides for the insertion of new Section 73B into the Town and Country Planning Act 1990, the purpose of which is to say that material variations are permitted, as long as they are not substantially different from the original permission.

What reading the legislation will not tell him is that, during the course of the debate on the Levelling-up and Regeneration Bill, I introduced an original amendment, the purpose of which was to restore the law to the Pilkington principle—in effect that overlapping permissions would be lawful, as long as the subsequent permission sought did not render the original permission no longer physically capable of being implemented. My noble friend on the Front Bench, then the Minister, may recall that the Government at the time did not accept it, but did accept that they should legislate. There is a difference between Section 110 and the Pilkington principle. There are, in practice, quite a lot of cases in which the permission that is sought does not render the original permission incapable but would substantially amend the original permission, and does not meet the narrow test of being not substantially different from the original permission.

It was not all that I was looking for but it was considerable progress in the right direction. It was important, because a judgment subsequent to Hillside, as my noble

friend will recall, said that the original planning permissions in these cases were not severable. You cannot go in, take some part of an original permission and amend it, and treat the rest of the permission as being valid. The whole permission needs to be sought all over again, which is exactly what has caused a substantial part of the problem that my noble friend has benefitted from, in the professional sense, because there are so many such permissions that would otherwise have to be sought all over again.

I agree with my noble friend that something more needs to be done. I happen not to agree with his drafting of Amendment 169. We would be better off saying of overlapping permissions that, where the later permission does not render the original permission wholly incapable of being implemented, it would remain lawful, otherwise you run the risk of inconsistent, overlapping planning permissions, which is not a place we wish to get to. It would also be entirely helpful if the amendment to be introduced would make it clear that, for the purposes of this, the original planning permission is severable — you can have a drop-in permission.

I hope my noble friend would agree with all of that. More to the point, I hope Ministers will agree that we have not solved this problem. In particular, we have not solved the problem as Section 110 of the Levelling-up and Regeneration Act, bringing in the new Section 73B, has not been brought into force. I have asked this question before and had a positive answer, and so I hope it is the Government's intention to bring Section 110 into force, and I hope that can be done soon. At the same time, I suggest that my noble friend comes back to this issue on Report and perhaps brings us an amendment capable of amending the new Section 73B to restore the Pilkington principle and enable planning permissions that would otherwise relate to the same overall red line to be severable for the purposes of a material change in planning permissions.

Barroness Scott of Bybrook (Column 1739) ***Hansard Extract :***

My Lords, I thank my noble friend Lord Banner for bringing to our attention the practical implications of the Hillside judgment within Amendment 169 today. These are complex issues, but his amendment shines a clear light on the risks to developers and local authorities alike, and the potential chilling effect on much-needed projects. It is precisely at moments like these that the Government should lean on the wisdom and experience of noble Lords who understand the realities of these issues on the ground.

We have had the benefit of meeting my noble friend Lord Banner privately to discuss these matters in detail. That conversation was extremely valuable in setting out the issues so clearly, and we are grateful for his time and expertise. We will continue to work with him to ensure that these concerns are properly addressed. I very much

hope the Minister will give a positive and constructive reply and that the concerns raised today will be fully taken into account.

Baroness Taylor of Stevenage (Column 1739 – 1741) ***Hansard Extract*** ***:***

This is a highly technical amendment. I am grateful to the noble Lord, as the noble Baroness, Lady Scott, said, for his explanations of the background to the case and for setting it in a context which made it a little easier to understand. I am grateful for the amendments around the Hillside Supreme Court judgment.

Amendments 169 and 185SB are technical but important amendments about overlapping consents. Amendment 169 seeks to address the implications of the Hillside judgment in relation to overlapping planning permissions. It seeks in particular to enable the carrying out of a development under an initial permission when an overlapping permission has been implemented, making it physically impossible for the first permission to be carried out.

Amendment 185SB, tabled by my noble friend Lord Hunt, focuses on overlapping planning permissions and development consent orders. The Government recognise that the Hillside judgment and subsequent court decisions have caused concerns across the development sector, and the noble Lord was kind enough to send me some of the articles that have been written since, setting out which problems they are causing. It has made it more challenging to use the practice of drop-in permissions to deal with changes in development proposals for plots on large-scale residential and commercial development in response to changing circumstances. There have been concerns about the implications for the implementation of development consent orders for nationally significant infrastructure projects when planning permissions have been used to deal with minor variations.

We want to ensure that large-scale developments, where they need to change, can secure the necessary consents to deal with these changes effectively and proportionately. Unfortunately, we are not persuaded that Amendment 169 is the solution to Hillside for overlapping planning permissions. It is too broad in scope, and we must be absolutely sure that it would not undermine the integrity of the planning system. The long-standing principle that Hillside endorsed—that it is unlawful to carry out a development when another permission makes it physically impossible to carry it out—is a sound one. Decisions are made on the merits of the entire development proposal, and this amendment would allow developers to pick and choose what parts of an approved development they wanted to implement when they had a choice.

Similarly, we need to consider carefully the implications of legislating to deal with overlapping planning permissions and development consent orders in general terms. While I understand the desire for certainty, there is more flexibility through a

development consent order to deal with the overlap with planning permissions.

That said, I emphasise again that, as a Government committed to ensuring that the planning system supports growth, we are keen to ensure that the right development can be consented and implemented quickly. We want to ensure that there is sufficient flexibility to deal with change to large-scale developments. Clause 11 already provides a framework for a more streamlined and proportionate process to change development consent orders, but we also want to look at how the framework can be improved for planning permissions. We would welcome further discussions with your Lordships and the wider sector on this matter. I am grateful to the noble Lord, Lord Lansley, for pointing out issues around Section 110 of the Levelling-up and Regeneration Act. I need to revisit our correspondence to refresh my mind on what we said about that, but his point about restoring the law to the Pilkington principle is noted and I am sure we will come back to this.

Lord Banner (Column 1741) ***Hansard Extract:***

It seems that there is unanimity across the Committee that the Hillside judgment generates a cause for a legislative solution. It also appears to be common ground that new Section 73B, if and when it is enacted pursuant to the Levelling-up and Regeneration Act, would not be a panacea. It may help in some cases—probably about one-third, but no more than that, so there is a need to go further.

Where we part is on the drafting and what the right-worded solution is. I am very much not wedded to the wording of my amendment; it is really there as a challenge in the hope that, collectively, we can come up with something that carries the overall consent of this House. I look forward to working with the Minister and my noble friend Lady Scott to find a form of words that will achieve the solution that we need. I beg leave to withdraw the amendment.

Amendment 169 withdrawn.

4. **REPORT STAGE – MONDAY 20 OCTOBER 2025**

Baroness Pinnock 15:35 (Column 488) ***Hansard Extract :***

Before Clause 1, insert the following new Clause—
"Purpose

The purpose of this Act is to—

(a) accelerate the delivery of new homes and critical infrastructure,

(b) improve the planning and consenting processes,

(c) support nature recovery through more effective development and restoration, and

(d) increase community acceptability of infrastructure and development."

Lord Fuller 15:35 (Column 489) Hansard Extract :

I thank the noble Baroness, Lady Pinnock, for focusing our minds at the outset on what this Bill is about.

I have read the press notices and compared them to the Bill's text—never has a Bill been more oversold by a Government.

… it proposes a system whereby the Secretary of State is to become a one-person planning committee—good luck keeping to the 12-week determination deadlines on that one. It could have ironed out Hillside or introduced a proportionality test so that at least the little boys could get on, but there is boneheaded resistance there.

5. REPORT STAGE - 22 OCTOBER 2025

Baroness Scott of Bybrook 17:30 (Column 850) Hansard Extract :

My Lords, I rise to speak to Government Amendment 64 in this group. As we have heard, this amendment would allow a development order to enable the Secretary of State to give directions restricting the refusal of planning permission in principle by a local planning authority in England. Under Section 77(5) of the Town and Country Planning Act 1990, the Secretary of State already possesses powers to intervene by calling in an application for their own determination. Therefore, I ask the Minister, what has changed? Will the existing guardrails and provisions governing the call-in process remain intact? Will the mechanisms by which call-in operates continue as they do now? How will the Secretary of State ensure that this power is not overused, thereby overriding local decision-making?

The Government should explain precisely what this amendment achieves that cannot already be done under existing law. If it represents a fundamental change to the call-in power, the Government should set that out clearly today, including the proposed changes, the safeguards and how the new power is intended to operate. If the Minister cannot provide that assurance, we will be inclined to test the opinion of the House on whether this amendment should proceed. Instead of tinkering with this power, the Government's real focus should have been elsewhere: on proportionality and addressing the implications of the Hillside judgment. Energy should be directed towards tackling the real blockages in the planning system

Amendment 64 disagreed.

Lord Banner 18:15 (Column 863) Hansard Extract :

My Lords, I speak to my Amendment 104 and the government Amendments 67 and 261, which would extend the time for commencing a planning commission which is subject to judicial review.

…

The Government's amendments, although differently worded to mine, would have essentially the same effect and would make a significant difference, as would my amendment, to mitigating the prejudice to developers whose planning permissions are subject to challenge, and indeed land promoters and landowners too, and to reducing the incentive on claimants to bring and perpetuate meritless challenges. So I support the government amendments and I do not need to press mine.

However, this amendment was not the most impactful of my package of amendments. The planning world is watching what the Government will do on Hillside; it is going to be debated next week, and I reiterate my encouragement to the Minister and her colleagues to roll out the same level of engagement and co-operation as we have had in relation to "stop the clock" for JR to the Hillside amendment, because that is the one that will really make a massive difference.

In the interests of time, I do not want to say very much about the other amendments in relation to totally without merit judicial reviews for non-NSIP judicial reviews other than this. I supported the sentiment and principle of those amendments in Committee. The difficulty I have with them on reflection is that, given that to be workable and constitutionally appropriate, the striking out of any right of appeal for totally without merit cases would need a hearing, the problem with extending it to all planning judicial reviews is that it would eat up the very limited bandwidth of the planning court. The planning court simply does not have the resources to deal with the proliferation of hearings that apply the Clause 12 procedure to all planning judicial reviews as opposed to the NSIP judicial reviews, which are much narrower. There have been only about 40 NSIP judicial reviews ever, whereas in the planning context it is a lot greater. So reluctantly, I do not think those amendments are workable at present stage, but if there were to be a new planning Bill in future, it should be looked at.

6. REPORT STAGE - 27 OCTOBER 2025

Lord Banner 17:21 (Column 1094) Hansard Extract :

I shall speak to Amendments 163A and 163B, tabled in my name. These seek to ensure that the nature restoration fund is properly aligned with the planning process and, in particular, that it is capable of supporting the larger and more complex developments. It is my view that the current drafting of Clause 66 risks preventing some of the larger, more complicated schemes from using an environmental delivery plan. These kinds of larger, more complicated developments often evolve after the development has started. We will hear more about this on Hillside, at whatever ungodly hour we get to it. For example, outline permission may be granted, but a

developer may subsequently seek to change the planning conditions attached to the permission. There may be amendments to other aspects of the development under Section 96A or otherwise. It may also be the case that larger developments need to apply for retrospective planning permission after development has commenced to regularise the development when it has been built differently to the permission.

Lord Banner 22:48 (Column 1187-1189) Hansard Extract :

Amendment 105: After Clause 52, insert the following new Clause—
"Relationship between overlapping permissions

After section 73A of the Town and Country Planning Act 1990 (planning permission for development already carried out), insert—

"73AA Relationship between overlapping permissions

(1) Where there is more than one planning permission which relates to some or all of the same land, the lawfulness of both past and future development carried out pursuant to one of those planning permissions shall be unaffected by the carrying out of development pursuant to another of those planning permissions, except to the extent expressly stated in any of those permissions or in any obligation under section 106 of this Act (planning obligations) related to any of those permissions.

(2) Subsection (1) applies only where one of the relevant planning permissions was granted after the day on which the Planning and Infrastructure Act 2025 is passed.

(3) In this section "planning permission" means—

(a) a planning permission under Part 3 of this Act, and

(b) a planning permission granted by article 3 (permitted development) of the Town and Country Planning (General Permitted Development) Order 2015 (S.I. 2015/596).""

Member's explanatory statement: This amendment addresses the potentially deleterious implications of the Supreme Court's judgment in the Hillside Parks case.

My Lords, as I said in Committee, there is a compelling and universally acknowledged need for a legislative solution to address the difficulties that large, multi-phase development projects face in the light of the Supreme Court's judgment in the Hillside Parks case. This is a technical issue of such fundamental importance that—dare I say it?—it should not be being debated at this time of the evening. The Supreme Court held in Hillside that where there were one or more overlapping permissions relating to the same site, the implementation of the later permission could jeopardise the ability to rely on the earlier permission, even when the later permission was designed and

granted on the basis that it would operate in conjunction with the earlier permission. I make no criticism of the Supreme Court's analysis of the existing legal position, but it is a deeply unsatisfactory position that is recognised as such by everybody in the development sector.

Large multi-stage developments almost always evolve during their build-out, which typically takes several years and sometimes decades. For example, in a large urban regeneration scheme the site-wide permission might envisage offices coming forward on one of the later phases, only for there to be no demand for new offices by the time we get to that phase because of a change in working patterns due, say, to Covid. Reapplying for planning permission for the whole development is impractical for a variety of reasons, such as the need to re-appraise the whole scheme—even the bits that are already built and the bits that are not proposed to be changed—new ecological surveys, new environmental assessment, reassessment of Section 106 contributions, et cetera. This is all incredibly cumbersome and can take years.

It has therefore long been industry practice for developers in this situation to make a localised application, typically called a standalone or drop-in planning permission, seeking the local planning authority's consent to change one aspect of development—for example, in the illustration that I gave, swapping out the offices for a hotel. The hotel would then come forward under the drop-in permission and the rest of the development would continue to be built out under the original site-wide permission.

The effect of the Supreme Court's judgment is to introduce very considerable risk and uncertainty in such circumstances because it can mean that implementing the drop-in on the focused area where it is intended to take effect can invalidate the site-wide permission, even though the drop-in has been granted on the basis that it would operate as an amendment to the original scheme. As I explained in Committee, this issue affects huge numbers of developments across the country. While there are sometimes workarounds, they are incomplete, risky, costly, time-consuming and cumbersome.

I know from what was said in Committee and from discussions that the Government accept the principle of a legislative solution to Hillside. It is a no-brainer. They have indicated that officials have expressed some concern with the wording of my original Amendment 105, although they have not articulated what that concern is. This is despite the amendment being drafted largely by Catherine Howard, a partner at Herbert Smith Freehills Kramer who is now the Chancellor's planning adviser. As a result, I tabled a new amendment, Amendment 113, which seeks to confer an enabling power on the Secretary of State to bring forward regulations to deal with this issue. The regulations would be subject to the affirmative procedure to avoid any concerns about lack of parliamentary scrutiny over the final form of words. It would

enshrine the principle, which everybody accepts, and leave the wording to be worked out later with parliamentary scrutiny. What is not to like about that? The two have been packaged together, so one vote will resolve the two.

There has been ongoing engagement with the Minister and her colleagues on this issue, but the Government's stance has been to say that they will work towards a future legislative solution and in the meantime bring into effect Section 73B of the Town and Country Planning Act 1990 under the last Government's Levelling-up and Regeneration Act. That is simply not good enough. Addressing Hillside is the single most pressing unresolved issue that the development sector would like to see resolved by this Bill. Speaking as somebody who works day to day in the planning and development sector, this is the amendment everybody is watching. There are people here in this Chamber tonight watching, and people watching online. This is the one that matters.

Section 73B is no panacea; it is far from that. It would allow only quite limited amendments to planning permissions. Its scope is narrow, and it would assist in no more than a third of cases currently affected by Hillside. More is needed. In saying that it will be looked at in a future legislative solution—whenever that would be—beyond Section 73B, the Government clearly accept that further legislation beyond Section 73B is required; otherwise, they would stop at that. No, we are told that it will be looked at in the future—but just not now. An enabling provision would allow for the detailed drafting to be worked up. Therefore, any concerns about the drafting of Amendment 105 do not affect the principle of these amendments.

This is the second piece of planning legislation since the Supreme Court's judgment in 2022. There was LURA in 2023, and my noble friend Lord Lansley, whose name is also on this amendment, sought to persuade the House on that occasion that a fuller amendment to deal with Hillside should be brought forward. The industry expects Parliament to step up on this second time of asking and not kick the can down the road again. The industry also expects proper consideration of this amendment. It is a late hour, and about 15% of the House is here right now. I respectfully invite the Minister to provide an assurance that we can bring this back at Third Reading as an alternative to a Division at this late hour, when many people who have a legitimate interest in this matter are not able to be here. Mañana is not an option: we need to do much better than that. Unless I have the assurance that I request, I am inclined to test the opinion of the House, despite this late hour.

Lord Wigley (Column 1189) Hansard Extract :

My Lords, I will speak very briefly on this, because the Hillside case arose in Merioneth in 1967, where I happened to be the parliamentary candidate in the 1970 election. I remember the considerable controversy there was about the application for 400

houses to be built in the vicinity of Aberdyfi, a scheme that was totally out of proportion to the nature of the community and the village there. It is not surprising that the thing did not go ahead, and it should not have gone ahead.

I assume that what the noble Lord who moved this amendment is seeking is clarity for the sake of the development industry for the future, not any revisiting of the Hillside case itself. In fact, what happened there was that some 41 houses were built, but the rest of the 400 houses were not pursued. The 41 houses that were built were built to planning specifications different to those that had been in the original case. In other words, there were all sorts of complications arising in the Hillside case.

There is also the fact that the Welsh Senedd has powers over planning and has its own rules in the 2015 legislation that it brought through, which brings another dimension in. Therefore, all I seek tonight is to know that, in moving this amendment, the intention is not to be revisiting the Aberdyfi case, which would cause an outrage, but rather to get clarity in the light of the court case, which, of course, I perfectly well understand.

Lord Carlile of Berriew (Colum 1189 -1190) ***Hansard Extract*** :

However, these amendments are not about the Hillside development; they are about a legal principle that emerged in connection with the Hillside development.

…

I must say that I am very surprised that the Government have not come forward at this stage with an amendment of their own to deal with this situation, because if they do not deal with this now, then they are looking a gift horse in the mouth in the form of, particularly, the second of these amendments, which was drafted to meet whatever objections there were—not very well explained—in relation to Amendment 105.

Hillside has to be dealt with as soon as possible because it is reducing the pace of growth, it is resulting in fewer homes, it is reducing urban quality and it is diminishing neighbourhoods. To refuse to accept these amendments or give an undertaking before the end of Report to produce their own amendment to deal with this issue seems to me to fly in the face of government policy for growth, and I do not begin to understand why. For reasons that were given just now by the noble Lord, using other and existing legislation just will not do the trick.

The Government having accepted the principle of a legislative solution to Hillside, and having been given one that is an improvement even upon Amendment 105, the original version, that the noble Lord said was drafted by the Chancellor's own planning adviser, it seems to me that this is a total no-brainer. We should not have to vote on

this. We should not be here at 11 o'clock discussing this; it should be resolved, and it could be resolved with the assent of the whole House.

Lord Lansley 23:00 (Column 1190-1191) Hansard Extract :

My Lords, I have signed my noble friend's Amendments 105 and 113, and he very kindly referred to the previous debates, before he joined your Lordships' House, on the then Levelling-up and Regeneration Bill when we looked at the issue and the consequences of Hillside and did so, I think, on the basis of amendments that I tabled at that time. The Government responded to my amendments then by bringing forward their own amendment, which is now Section 73B—Section 73 was inserted by the Planning and Compulsory Purchase Act 2004—as inserted by Section 110 of the Levelling-up and Regeneration Act 2023, which is about material variations in planning permission.

My original amendment that I tabled—back in 2022, I think—tried to resolve Hillside and say, effectively, that subsequent applications for planning permission would not invalidate an existing planning permission, even though they related to the same area of land, so long as the subsequent planning permission, if permitted, would not make the original permission physically incapable. This is done by reference to what is known as the Pilkington judgment.

My noble friend Lady Scott of Bybrook may well recall these debates, and the advice that she received was to try to tackle what I would describe as the least of the problems emerging from Hillside, which is that you arrive at a position where you have got an existing planning permission for a site of the kind my noble friend was describing and you want to vary it but not in a way which is significantly different from the existing permission. That is what Section 73B in the Levelling-up and Regeneration Act says: the local planning authority can do this so long as it is not significantly different.

As it happens, that has not been brought into force. On the basis of the helpful discussions I have had with the Minister, it is my expectation that the Government will bring Section 73B into force. If I am incorrect in that, I am sure the Minister would tell me, but I am hoping I am not incorrect about that.

As the noble Lord, Lord Carlile of Berriew, said, Amendment 105 sets out to deal with all the problems that emerged and, if I may say so, it is ambitious; I have signed it and agree with it, but it is ambitious. It is ambitious to be able to say that, if a local planning authority accepts this new permission in relation to the same area of land as an existing permission, subject to Section 106 obligations et cetera, that is all well and good; they can make that decision, and it does not invalidate the existing permission. If there are difficulties with the wording of Amendment 105, Amendment 113 is a basis

for the Government to make further regulations to deal with any of the remaining issues that might emerge from it.

I have to say it is ambitious because it goes beyond Pilkington. Technically, there is an issue, in my view, about a new permission which would make the existing permission no longer physically able to be implemented. However, Amendment 105 seems to me none the less to be right, and we should proceed with it because it deals with a later problem than the Hillside judgment, which is about whether existing planning permissions are severable in relation to a new application for planning permission.

Amendment 105 would put beyond doubt that planning permissions would be severable for this purpose, because the existing planning permission would not be invalidated by the new planning permission, which, clearly, even if it made the original one physically impossible, would do so in relation only to part of the existing permission.

When I first discussed this with Ministers some weeks back, I was told, “It’s not so urgent because they are many workarounds”. I am afraid that the workarounds are deeply costly and difficult. They are such things as breaking down a master plan into a whole series of phases, each phase having to secure planning permission in its own right, without any certainty as to later planning permissions. One needs a master plan with outline planning permission that gives one assurance and certainty about the nature of the overall development. Even if one has to make what are, in effect, material changes to that, at least one has the existing permission. My noble friend’s Amendment 105 would enable developers under those circumstances to have that degree of assurance about the sustainability of the planning permission that they have received, so I strongly support it.

Lord Hunt of Kings Heath (Column 1191) ***Hansard Extract :***

I do not think there is any doubt that the Hillside judgment will inevitably have an impact on the objectives of the Bill, which, despite the many amendments we have been debating, is about planning and infrastructure and getting the process through much more quickly than we have in the past.

Clearly, there has been a lot of discussion about a second planning Bill, and no doubt the Hillside judgment could be dealt with in it. I would have thought that, if the Government could deal with it now and in the next few weeks, and between Report and Third Reading, it would benefit the ultimate objectives of what we are seeking to do here.

Baroness Scot of Bybrook (Column 1192) ***Hansard Extract*** ***:***

> The amendments just seek to restore clarity and flexibility, ensuring that large schemes are not paralysed by legal technicalities. They would allow practical adjustments to be made, while fully preserving the principle of proper planning control. Surely that is what we want to deliver. We are not wedded to a precise drafting at this time—the Government are free to bring forward their own version—but I urge the Minister to please get on with it.
>
> Without a clear mechanism to adapt site-wide permissions, investment is stalling and will continue to stall, projects will be abandoned, as they are being abandoned now, and the planning system itself will be discredited by outcomes that make very little sense on the ground. Down on the ground is where they are building houses—there will be fewer houses built, and more houses are needed. We need to get on with it. I urge the Government to commit to a good solution in this Bill and not to push it down the road.

Baroness Taylor of Stevenage (Column 1193) ***Hansard Extract*** ***:***

> My Lords, I hesitate to step into this very knotty lawyer's wrangle, but it is necessary to do so because our common aim across the House is to sort out Hillside. We all know why we need to do that. As the noble Lord, Lord Banner, said, it is symbolic of all the issues that we are trying to get out of the way so that we can get on with the development that this country needs.
>
> I thank the noble Lord, Lord Banner, for tabling Amendment 105—a repeat of his amendment from Committee that seeks to overturn the Hillside judgment—and for his new Amendment 113, which responds to some very constructive discussions we have had since Committee.
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> As I said in Committee, we recognise that the Hillside judgment, which confirmed long-established planning case law, has caused real issues with the development industry. In particular, it has cast doubt on the informal practice of using "drop in" permissions to deal with change to large-scale developments that could build out over quite long periods—10 to 20 years.
>
> We have listened carefully to views across the House on this matter, and I appreciate the thoughts of all noble Lords who have spoken in this useful debate. One seasoned planning law commentator—I do not think it was the noble Lord, Lord Banner, or the noble Lord, Lord Carlile—called Hillside a "gnarly issue", and it has attracted a lot of legal attention. It is very important that we tread carefully but also that we move as quickly as we can on this.

Therefore, in response to the concerns, the Government propose a two-step approach to dealing with Hillside. First, we will implement the provisions from the Levelling-up and Regeneration Act for a new, more comprehensive route to vary planning permissions—Section 73B. In practice, we want this new route to replace Section 73 as the key means for varying permissions, given that Section 73 has its own limitations, which case law has also highlighted. The use of Section 73B will provide an alternative mechanism to drop-in permissions for many large-scale developments—although we recognise not all.

Secondly, we will explore with the sector the merits of putting drop-in permissions on a statutory footing to provide a further alternative. This approach will enable provision to be made to make lawful the continued carrying out of development under the original permission for the large development, addressing the Hillside issue. It will also enable some of the other legal issues with drop-in permissions to be resolved.

In implementing Section 73B and exploring a statutory role for drop-in permissions to deal with change to large-scale developments, I emphasise that we do not want these routes to be used to water down important public benefits from large-scale development, such as the level of affordable housing agreed at the time of the original planning permission. They are about dealing with legitimate variations in a pragmatic way in response to changing circumstances over time.

Amendment 113 seeks to provide an enabling power to address Hillside through affirmative secondary legislation. I recognise that this provision is intended to enable the Government to have continued discussions with the sector and then work up a feasible legislative solution through the regulations. As with all enabling powers, the key issue is whether the provisions are broad enough to deal with the issues likely to emerge from these discussions, as hinted at by the noble Lord, Lord Lansley.

Based on the current drafting, this enabling power would not do that. For instance, there have been calls to deal with Hillside in relation to NSIP projects. That would require a wider scope, so we cannot accept the amendment without significant modifications. That is why we think it is best to explore putting drop-in permissions on a statutory footing first and then drawing up the legislation. This will give Parliament time to scrutinise.

To conclude, I hope that the approach I have set out addresses many of the concerns expressed in this debate. I ask the noble Lord not to press his amendments.

Lord Banner (Column 1194) ***Hansard Extract :***

My Lords, in response to the noble Lords, Lord Wigley and Lord Carlile, I will start by clarifying that this is not about the facts of Hillside. That case is dead; fought and lost. This is about the principle.

I am pleased to hear the Minister reiterate the point that it is the common aim of the Government and those of us on this side of the House to resolve Hillside. However, in light of that common aim, I find it baffling that the Government do not take what, as the noble Lord, Lord Carlile indicated, is on the silver tray: the enabling power to deal with this.

Dealing with the two-step approach, Section 73B is extremely limited. It is not going to resolve anything like the lion's share of cases that have Hillside issues. In relation to the suggestion that future statutory provision may be brought forward to deal with Hillside, well, by which Bill? There are all sorts of briefings and counter-rumours and rumours about the planning Act. One even suggested that I was going to write it. If I were, Hillside would be in it, but I have not been commissioned to write it. Clearly, in the absence of any certainty on the timescale, once again we are kicking the can down the road. The kinds of detailed legal points, such as whether NSIPs should apply, are precisely the kind of things that could be resolved between now and Third Reading. The Prime Minister said that the Government's aim was to back the builders and not the blockers. I would like to see which Members of this House back the builders and which back the blockers, so I would like to test the opinion of this House.

Amendment 105 disagreed

Birketts LLP
16 December 2025