

EMAIL ROSEFIELD SOLAR FARM LTD TO CSAG 21ST JANUARY 2026

From: Rosefield Solar Farm <info@rosefieldsolarfarm.co.uk>

Date: 21 January 2026 at 17:20:10 GMT

To: Sally Tyler [REDACTED]

Subject: RE: Info required regarding the Connection queue

Hi Sally,

Rosefield Solar Farm has a grid connection to connect into the National Grid at East Claydon in 2031. Like other developers we received a Gate 2 notification last year. This confirmed a Gate 2 connection within our requested window (2031 - 2035) for solar and Gate 1 position for the battery storage.

Formal offers will be released by NESO over 2026 to confirm this and provide further details.

Best wishes,

Rebecca



UK Government

Clean Power 2030 Action Plan: A new era of clean electricity

Connections reform annex (updated)



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Introduction

This annex provides a detailed breakdown of the Clean Power Action Plan pathway and capacity ranges, for the purposes of aligning the NESO-led process of connection reform with 2030 Clean Power (subject to NESO's final proposals being approved by Ofgem).

This includes GB-level capacity ranges, informed by NESO's 2030 advice and in line with the government's 2030 pathway for most generation technologies, and regional breakdowns for onshore wind (ONW), solar, and batteries.

We have also set out technology capacity ranges to 2035 to provide a 10-year horizon for connection offers. These are mainly derived from NESO's net zero-aligned 2035 Future Energy Scenarios (FES) 2024, with a bespoke approach for onshore wind and unabated gas (see the [note on bespoke approaches](#)).

Subject to Ofgem's final decision, raising entry requirements and aligning capacity with our Clean Power Action Plan could release approximately 500GW of capacity on our network. This would cut the size of the queue by around two thirds, creating opportunities to turbo charge generation and demand projects that are ready and are needed. This will not only drive us forward towards Clean Power by 2030 but will accelerate key industries from data centres to gigafactories, unlocking £billions in investment in GB.

Connections reform

The electricity network is a critical enabler for delivering clean power by 2030 and accelerating towards net zero. To ensure we have the necessary network in place, we need to speed up both the build of new network infrastructure and fundamentally reform the grid connections process. Measures to accelerate infrastructure build are covered in the 'Networks and Connections' chapter of this Action Plan.

As the government set out jointly with Ofgem in its 'Open Letter on aligning connections with strategic plans',¹ we know that neither the current connections process, nor reforming the process based on readiness alone, will deliver clean power by 2030. NESO has now consulted on its proposals for a strategically aligned process and reform of the existing connections queue² and expects to submit final recommendations to Ofgem by the end of 2024, for a decision by the end of Q1 2025.

The government strongly supports connections reform and plans to introduce legislation, when parliamentary time allows, to ensure connections reform aligns with strategic energy and network plans and supports delivery of Clean Power by 2030. This should provide certainty to all parties on the direction of travel for connections.

If approved by Ofgem, NESO's proposals will deliver the radical overhaul of grid connections that is critical to enable delivery of clean power by 2030 and net zero. By removing unviable

¹ DESNZ (2024), '[Open letter from DESNZ and Ofgem: Aligning grid connections with strategic plans](#)' (5 November 2024).

² NESO (2024) [Phase 3: Consultation Documents](#)

projects, re-ordering the queue, and accelerating connection timescales for the projects we need most, these reforms will unleash investment in renewable generation 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 and gigafactories, to electric vehicle charging and heat pumps), as well as related supply chains and the jobs these will create.

It is critical that the new connections process provides timely connections for all demand customers - ultimately, it is new and growing sources of demand that drive the need to connect renewable generation. Growth of demand connections will not be constrained by the Clean Power pathways (subject to NESO being content that system stability and security of supply requirements are met) and we expect that the capacity released by prioritising generation connections in line with capacity ranges, and removing excess generation from the connections queue, will enable accelerated connections for many demand customers.

Demand projects in scope of reform and connecting to the transmission network are by nature strategically important given the size of their connections and will deliver investment and wider social value. It is therefore essential that steps are taken to ensure major demand investors can continue to bring forward and progress investments in Great Britain both ahead of reform and as reforms are progressed.

Similarly, it is important that smaller projects are treated proportionately and are not unduly caught up in transmission processes. Projects connecting to the distribution network that are below regional thresholds for Transmission Impact Assessment (TIA) will not be constrained by the capacity ranges set out in this plan. Currently, the lower threshold for TIA is 1 MW in England and Wales, 200 kW in mainland Scotland, and 50 kW in the Scottish Islands.³

Pathways to Clean Power

Moving from a 'first come, first served' system to one that is strategically aligned requires that we set out the capacities we will need in each technology type. To do this, we have set out national pathway figures for the capacity which should be prioritised for all technologies, and further regional breakdowns for the capacity which should be prioritised for solar, batteries and onshore wind. This will enable network companies to accelerate, and developers to bring forward, projects which best align with strategic need.

Subject to the final agreed approach to connections reform, we expect that NESO will use the top-end of the government's 2030 pathway (i.e. DESNZ 'Clean Power Capacity Range'), to underpin connection offers for projects in and before 2030. To provide developers and investors with a 10-year horizon for connection offers, we expect that NESO will use the technology capacity ranges in Table 1, derived from their 2035 Future Energy Scenario (FES)

³ National Grid Electricity Transmission have proposed raising the threshold for TIA in England and Wales, see: [Ofgem Connections Delivery Board - October 2024 minutes](#)

2024⁴ to underpin connection offers out to 2035. These FES-derived ranges do not constitute a government pathway, but rather an established, public basis through which to provide longer-term certainty on connections, ahead of the Strategic Spatial Energy Plan (SSEP), due to be published in 2026.

This approach does not imply government commitment to further fiscal measures, levy support, or policy mechanisms to help meet the level of deployment in the 2035 ranges. Such measures will be subject to separate decisions.

Where a viable project exceeds the relevant 2035 technology capacity ranges, it will receive an indicative 'Gate 1' offer if directly transmission-connected (or revert to its initial DNO connection agreement if embedded) and will have opportunities to join the queue in future where gaps emerge and/or where capacity ranges are revised upwards by the first SSEP.

Where there is under-supply against capacity ranges up to 2030, NESO will look first to substitute viable projects of the same technology from adjacent, over-supplied, zones. Where this is not possible or there is still under-supply after substitutions, NESO will reserve network capacity up to the top of the capacity range to ensure sufficient network infrastructure is built ahead of future projects applying to connect. This will provide future connections opportunities where deployment is currently underdeveloped, for example in onshore wind.

For most technologies, GB-level capacity ranges will be sufficient to enable NESO to deliver efficient connection reform. This is because these technologies are characterised by a small number of discrete projects (e.g. nuclear), are less locationally sensitive, or are already subject to a coordinated design exercise (e.g. offshore wind). Aggregated, higher-level pathways also minimise any risk of over-determining future deployment ahead of the SSEP.

For solar, batteries, and onshore wind, we need to ensure that ready projects can progress while delivering a balanced energy system for 2030. Regional breakdowns are needed to give network companies greater control over capacity allocation for these technologies because they are characterised by a larger number of smaller projects, are geographically dispersed and, in the case of solar and batteries, are oversubscribed nationally in our current connection queue. For these technologies, using pathways limited to GB-level would create significant risks of sub-optimal network design and could limit the ability to connect strategically important demand projects.

Government sets out regional breakdowns in Table 2, 4, 6 and 7. Overall capacities for prioritisation for each technology are based on the government's Clean Power Action Plan, which provides a national pathway to achieving clean power by 2030 and a 'Clean Power Capacity Range' (see Table 1).

To determine a regional breakdown of the government's pathway, government asked NESO to consider how best to distribute capacity regionally. NESO's analysis is informed both by the existing connections queue, to ensure that there is an adequate supply of projects, and power sector modelling, to ensure that assets are located where they can reduce the level of unabated gas used and help keep future system costs low.

⁴ FES scenarios are already used by NESO for the purposes of wider investment plans. See, for example: [NESO Beyond 2030](#)

Ofgem is due to decide on NESO's proposed reforms to the connections process by the end of Q1 2025. Should Ofgem approve the changes, the GB 'Clean Power Capacity Ranges' and regional breakdowns in this annex would be used within the connections process to prioritise projects that best meet our strategic needs.

This annex also includes a regional breakdown for technologies required beyond 2030, to 2035, based on analysis from NESO. This should be used to provide certainty to investors by ensuring a continued pipeline of grid connections. Projects aligned with the 2035 breakdowns may be able to connect before 2031 where there is spare capacity, under-supply, or project attrition post offer acceptance.

Government will build on this plan in the publication of the SSEP in 2026. The SSEP will examine the mix of technologies in the pipeline and consider whether capacity reserved for undersupplied technologies should be released for other technologies. The 2035 figures in this technical annex are therefore interim to enable connection agreement reform to proceed at pace and are subject to updates through the SSEP. In line with proposals set out in NESO's consultation, we expect that introduction of the SSEP pathway will not alter connections agreements already issued for projects connecting using the FES-derived ranges set out here – subject to those projects continuing to meet progression milestones – but may lead to changes in the prioritisation of capacity for future connection offers. NESO proposes not to replace projects that have been provided a connection offer in the 2031-35 period but subsequently exit the queue, to maximise scope for the first SSEP to optimise the future network.

Subject to Ofgem approval, additional flexibilities will be included in the reformed connection process to allow for project attrition, and over- or under-supply. These should include:

- Allowing pre-2030 connections for ready projects that exceed 2030 capacity ranges but are within the 2035 ranges, where there is spare capacity after projects within the 2030 ranges have been assessed. This will avoid imposing a hard limit on pre-2030 connections and ensure that no project will be denied a pre-2030 connection solely because it is not aligned with Clean Power 2030
- Allowing substitutions of the same technology from adjacent zones where there is over- or under-supply, so long as this does not cause material network constraints
- Allowing any project with a connection date in 2025 or 2026 that is already under construction to retain its connection date

Additionally, 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. Government supports this proposal.⁵

⁵ NESO (2024), '[Open letter on connections reform](#)' (published 10 December 2024, viewed December 2024).

It should be noted that prioritised connection offers alone will not guarantee that a project will progress to completion. Projects will still be required to secure planning consent, (if not already granted) and meet NESO progression milestones to retain connection agreements and progress to energisation.

There will also be specific projects that require certainty beyond 2035, such as large scale nuclear. In government's view NESO should consider how the Project Designation Methodology recently consulted on can be used to provide early certainty to these projects.

For technologies not included within the pathways set out below, or generation connecting from outside GB, NESO should separately consider the correct route through the connections process to facilitate timely connections for these projects, as appropriate. Further, the capacity range only applies to projects which need to complete Transmission Impact Assessments, subject to specific network operators' rules.

Table 1: Installed GB-level capacity in 2030 in the NESO ‘Further Flex and Renewables’ and ‘New Dispatch’ Scenarios, and the DESNZ ‘Clean Power Capacity Range’, compared to installed capacity in 2024 (GW)

Technology	Current Installed capacity (2024) ⁶	NESO ‘Further Flex and Renewables’ Scenario	NESO ‘New Dispatch’ Scenario	DESNZ 2030 ‘Clean Power Capacity Range’ ⁷	2035 FES-derived Capacity Range ⁸
Variable					
Offshore wind	14.8	51	43	43 – 50	72 - 89
Onshore wind	14.2	27	27	27 – 29	35 - 37⁹
Solar	16.6	47	47	45 – 47¹⁰	45¹¹- 69
Firm					
Nuclear	5.9	4	4	3 - 4	4 - 6

⁶ 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 2024 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 and power BECCS is NESO (2024), ‘[Clean Power 2030 Table 2](#)’, 2023 data where available. Gas CCUS and hydrogen to power are new technologies so there is no installed capacity at the point of publication. All links viewed December 2024.

⁷ 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 detail within this annex.

⁸ 2035 ranges have been developed using ranges from the NESO FES24 net zero aligned scenarios.

⁹ Onshore wind capacity ranges for 2035 include an uplift of 6 GW from the FES24 2035 estimate, this is to reflect the potential for higher growth rates in ONW in England and Wales after the lifting of the de facto ban.

¹⁰ NESO engagement with Distribution Network Operators indicates that an additional 9-10 GW of rooftop solar projects, which are not subject to [Transmission Impact Assessments](#) (see page 5) could deploy before 2030. It is therefore possible that the 2030 Clean Power solar capacity range of 45-47 GW could yield around 54-57 GW in 2030 (subject to solar PV pipeline of rooftop solar projects).

¹¹ Given that we wouldn't expect solar installed capacity to decrease between 2030 and 2035, we have re-calibrated the 2035 range so it starts at the bottom-end of the DESNZ Clean Power Capacity Range.

Technology	Current Installed capacity (2024) ⁶	NESO 'Further Flex and Renewables' Scenario	NESO 'New Dispatch' Scenario	DESNZ 2030 'Clean Power Capacity Range' ¹⁷	2035 FES-derived Capacity Range ⁸
Dispatchable					
Low Carbon Dispatchable Power ¹²	4.3	4	7	2 ¹³ – 7	Up to 25
Unabated gas	35.6	35	35	35 ¹⁴	Subject to separate NESO designation process ¹⁵
Flexible					
LDES ¹⁶	2.9	8	5	4 – 6	5-10
Batteries ¹⁷	4.55	27	23	23 – 27	24-29
Interconnectors	9.8	12	12	12 – 14	17-24
Consumer-led flexibility ¹⁸	2.55 ⁵	12	10	10 – 12	29

¹² 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.

¹³ 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

¹⁴ 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.

¹⁵ Government expects unabated gas connections would be subject to NESO's designation methodology.

¹⁶ As per the position set out in the Government Response to the LDES Consultation, LDES are storage technologies with a minimum duration of at least 6 hours. Government is currently considering whether to increase the minimum duration beyond 6 hours, including through advice being provided by NESO. Government will confirm the final position in Q1 2025, in the LDES Technical Decision Document it will publish with Ofgem. See [Designing a policy framework to enable investment in long duration electricity storage: government response](#).

¹⁷ Refers to battery storage projects which do not meet the definition of LDES, as per the forthcoming LDES Technical Decision Document.

¹⁸ Excluding storage heaters. Connection offers will not be issued under this technology category.

Note on bespoke approaches for 2035 capacity ranges for onshore wind and unabated gas

The FES 2035 range for onshore wind is 29-31 GW. This only represents a 2 GW uplift above our 2030 pathway (27-29 GW) for the 2031-35 period, which amounts to an annual deployment rate of 0.4 GW. NESO has confirmed the FES modelling is based on assumptions about the planned onshore wind pipeline in England and Wales that do not reflect action taken by the Secretary of State in July to remove the de facto onshore wind ban.

We consider that the FES 2035 range therefore no longer represents an accurate reflection of the potential for onshore wind deployment over the next 10 years and is misaligned with the objectives of the Onshore Wind Taskforce. DESNZ internal analysis indicates significant upside potential for onshore wind deployment beyond 31 GW FES figure by 2035, plausibly between 35 and 37 GW.¹⁹ It therefore follows that there is strong justification to deviate from the FES range for onshore wind.

We have therefore increased the capacity range for onshore wind in 2035 to 35-37 GW, above that set by FES. We acknowledge that locational uncertainty in the onshore wind pipeline relative to network development following lifting the de facto ban makes it challenging to calculate a regional breakdown of the government's 2035 onshore wind capacity uplift to the same level of granularity as solar and batteries. We have therefore decided to proceed with a two-zone split between: i) Scotland and ii) England & Wales for onshore wind, with no split between transmission and distribution. The two-zone split is shown in Table 6 and Table 7.

We have decided to allocate the 6 GW uplift in onshore wind to the England and Wales zone (totalling 16 GW), with the onshore wind allocated to Scotland consistent with the FES 2035 estimates (21 GW). This is consistent with our rationale that pursuing the uplift was necessary to reflect the expected higher growth rates in onshore wind in England and Wales following lifting of the de facto ban. We will continue to engage with NESO, Ofgem and devolved governments to consider the most cost-effective spatial optimisation of wind generation technology through the SSEP, including having regard to the Scottish Government's future vision for Onshore Wind.

The technologies set out in Table 1 represent a portfolio of established and emerging renewable and low carbon technologies to deliver decarbonisation of the power sector, and we expect to increase deployment of these technologies to ensure that we can meet electricity demand with a rising share of low-carbon power. In doing so, we recognise the importance of securing gas capacity to maintain security of supply on our transition to Clean Power, and beyond. 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. Subject to Ofgem's approval, NESO's project designation process will ensure priority access to available capacity / earlier connection dates where projects meet various criteria, including those deemed to be critical to security of supply.

¹⁹ This range has been informed by DESNZ analysis from published [Energy and Emissions Projections](#) Annex O, as well as more recent internal analysis modelling a credible power sector pathway to reach Clean Power in 2030 (see Technical Annex).

Regional capacity breakdowns for solar, onshore wind and batteries

Regional capacity breakdowns have been agreed in collaboration with NESO. The 2030 breakdowns presented below reflect the upper end of the capacity range in the DESNZ 'Clean Power Capacity Range' for solar, onshore wind and batteries. The regional capacity breakdowns for 2035 are informed by NESO's FES-24 net zero aligned scenarios, and the bespoke capacity range for onshore wind. The breakdowns have been estimated using a variety of sources, including but not limited to, current connection queue data, planning data and the Capacity Market register. For transmission and distribution network connected technologies, these breakdowns have been presented in 11 and 8 regions respectively. These regions were chosen to balance between the dual needs of i) providing enough geographical specificity to effectively manage and plan the future electricity network and, ii) the need for sufficient levels of flexibility in the reformed connections process to allow for future market changes to be reflected in our regional technology mix.

Capacity allocations for Onshore wind and solar for the 2031-35 period have been amalgamated across transmission and distribution levels (see Table 6) for reasons set out elsewhere in this Annex. The regional capacities for Onshore wind (Scotland, England and Wales) are presented in Table 7.

Transmission connected technologies

Table 2: Regional capacity breakdowns for transmission connected technologies required for 2030²⁰ and 2035²¹

Transmission network region	Solar (MW) 2030	Solar (MW) 2035 ²²	Onshore wind (MW) ²³ 2030 ²⁴	Onshore wind (MW) 2035	Batteries (MW) ²⁵ 2030	Batteries (MW) 2035
N. Scotland	100	-	5,500	-	1,900	1,900
S. Scotland	600	-	8,800	-	3,900	3,900
N. England	500	-	-	-	800	800
N. Wales, the Mersey and the Humber	1,200	-	300	-	4,200	4,200
Midlands	4,000	-	-	-	1,300	1,300
Central England	2,100	-	-	-	500	500
E. Anglia	100	-	-	-	200	200
S. Wales and the Severn	1,100	-	1,300	-	900	900
S.W. England	300	-	-	-	400	400
S. England	200	-	-	-	100	100
South East England	600	-	-	-	1,700	1,700
GB total	10,800	-	15,900	-	15,900	15,900

Note: MW capacity figures have been rounded to the nearest 100 MW.

²⁰ The national total capacities (MW) per technology, are aligned with the DESNZ Clean Power Capacity ranges for 2030.

²¹ The 2035 figures are informed by FES24 net-zero aligned scenarios.

²² The 2035 capacities for solar do not have a transmission and distribution network split. Instead, these have been amalgamated by transmission network region and are presented in Table 6.

²³ We have not presented onshore wind's breakdown by transmission network region for 2035. The capacity split between Scotland and England and Wales has been presented in Table 6 and Table 7.

²⁴ Some onshore wind regional capacities are blank for 2030 due to the lack of known pipeline transmission connected projects in these regions at the point of publishing.

²⁵ The 2 GW total uplift in estimated capacity between 2030 and 2035 for batteries has been allocated to distribution connected batteries only. There is, therefore, no change in the capacity breakdown for transmission connected batteries between 2030 and 2035.

Table 3: Mapping of transmission network region codes to transmission region names

Transmission network region code	Transmission network region name
T1	N. Scotland
T2	S. Scotland
T3	N. England
T4	N. Wales, the Mersey & the Humber
T5	Midlands
T6	Central England
T7	E. Anglia
T8	S. Wales & the Severn
T9	S.W. England
T10	S. England
T11	South-East England



Distribution connected technologies

Table 4: Regional capacity breakdowns for distribution connected technologies required for 2030²⁶ and 2035²⁷

Distribution network region	Solar (MW) 2030	Solar (MW) 2035 ²⁸	Onshore wind (MW) ²⁹ 2030	Onshore wind (MW) 2035	Batteries (MW) 2030	Batteries (MW) 2035
Scottish and Southern Electricity Networks (SSEN) – Scottish Hydro Electric Power Distribution (SHEPD)	1,100	-	3,500	-	900	900
SP Distribution (SPD)	1,100	-	2,700	-	800	900
Northern Powergrid (NPg)	4,400	-	1,900	-	1,900	2,100
Electricity North West (ENWL)	1,500	-	700	-	900	1,000
SP Manweb	1,500	-	1,000	-	400	500
National Grid Electricity Distribution (NGED)	13,900	-	2,400	-	3,000	3,600
UK Power Networks (UKPN)	8,100	-	900	-	2,100	2,400
SSEN – Southern Electric Power Distribution (SEPD)	4,600	-	100	-	1,200	1,400
GB total	36,200	-	13,200	-	11,200	12,800

Note: MW capacity figures have been rounded to the nearest 100 MW.

²⁶ The national total capacities (MW) per technology, are aligned with the DESNZ Clean Power Capacity ranges (Table 1).

²⁷ The 2035 figures are informed by the FES24 net-zero aligned scenarios.

²⁸ The 2035 capacities for solar do not have a transmission and distribution network split. Instead, these have been amalgamated by transmission network region and are presented in Table 6.

²⁹ We have not presented onshore wind's breakdown by distribution network region for 2035. The capacity split between Scotland and England and Wales has been presented in Table 6 and Table 7.

Table 5: Mapping of distribution network region code to distribution region name

Distribution network region code	Transmission network region name
D1	SSEN - SHEPD
D2	SP Distribution
D3	ENWL
D4	NPg
D5	SP Manweb
D6	NGED
D7	SSEN - SEPD
D8	UKPN

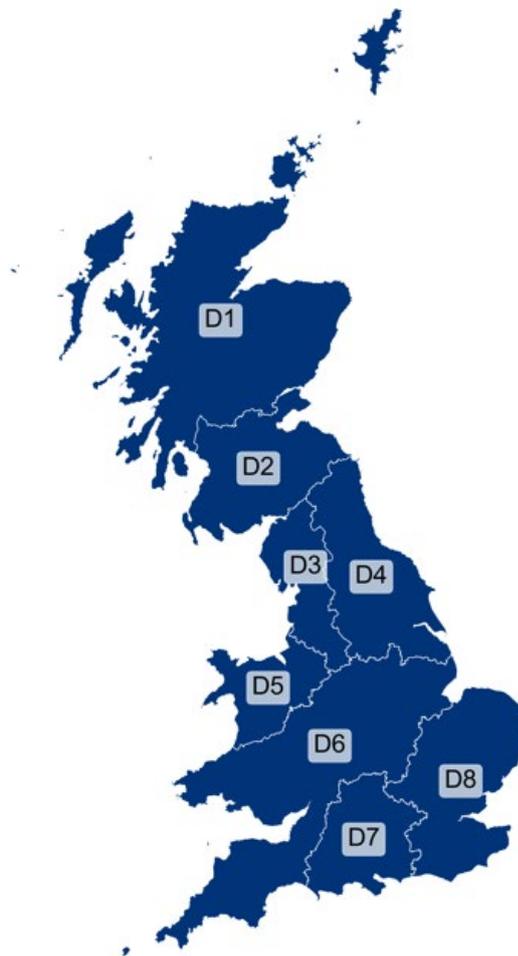


Table 6: Regional capacity breakdowns for technologies with amalgamated transmission and distribution network capacities for 2035

Transmission network region name	Transmission network region code	Tx + Dx Solar (MW) 2035	Tx + Dx Onshore wind (MW) 2035
N. Scotland	T1	2,500	-
S. Scotland	T2	2,600	-
Scotland total		5,100	21,200
N. England	T3	5,200	-
N. Wales, the Mersey and the Humber	T4	9,500	-
Midlands	T5	13,700	-
Central England	T6	9,500	-
E. Anglia	T7	3,300	-
S. Wales and the Severn	T8	8,300	-
S.W. England	T9	5,500	-
S. England	T10	2,300	-
South East England	T11	7,000	-
England and Wales total		64,200	15,800
GB total		69,400	37,000

Note: MW capacity figures have been rounded to the nearest 100 MW.

Table 7: Total capacities for Scotland, England and Wales by technology

GB region	Solar (MW) 2030	Solar (MW) 2035	Onshore wind (MW) 2030	Onshore wind (MW) 2035	Batteries (MW) 2030	Batteries (MW) 2035
Scotland	2,900	5,100	20,500	21,200	7,500	7,600
England and Wales	44,000	64,200	8,600	15,800	19,600	21,100
GB total	47,000	69,400	29,100	37,000	27,100	28,700

Note: MW capacity figures have been rounded to the nearest 100 MW.

Update

The Connections Reform Annex of the Clean Power 2030 Action Plan was republished in April 2025 to address a misalignment between solar capacity allocations and the solar pipeline for 2031-35, by amalgamating the solar distribution and transmission allocations for 2031-35 across the 11 transmission network regions (see table 6).³⁰ This technical update will enable NESO to allocate capacity to the most well-developed solar projects across transmission and distribution in each region. The overall solar capacity allocation remains as in the original publication.

³⁰ DESNZ (2025), '[Clean Power 2030 Action Plan: solar capacity update - letter to NESO](#)', (7 April 2025).

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LOCAL DETERMINANTS AFFECTING HEALTH OF LOCAL POPULATION FROM PROPOSED ROSEFIELD SOLAR FARM

Introduction

I have worked as a General Practitioner in the North Buckinghamshire area, based in Winslow and the surrounding villages, for nearly 40 years. When I first began practising in this locality, patients faced significant barriers in accessing healthcare, largely due to limitations in transportation and communication. In the absence of mobile phones, patients relied heavily on public telephone systems, and many households did not own a motor vehicle. As a result, transport to medical services often depended on the goodwill of friends and family.

A considerable proportion of patients were unwell and required home visits. This meant that, as a rural GP, I became acutely aware of the practical difficulties and frustrations associated with travelling across North Buckinghamshire. Access was frequently impeded by inclement weather, flooding, narrow single-track roads, and occasional obstructions such as livestock, all of which significantly limited timely access to patients in need. In earlier years, ambulance services were also limited and largely concentrated in larger towns, meaning that emergency care often relied heavily on the availability of local primary care services and GPs on the ground.

While emergency services are now more coordinated and accessible than in the past, transport limitations in rural areas remain a persistent and serious concern. Public transport provision locally is extremely poor, and many patients continue to rely on family and friends to attend appointments at our surgeries in Winslow, Wing and Whitchurch.

The proposed solar farm development, in conjunction with the disruption anticipated from the East West Rail link and the HS2 route between London and Birmingham, presents what I believe to be a “perfect storm” of disruption to local communication and transport pathways. These pathways are essential for the safe delivery of primary healthcare services in our rural community.

We have undertaken extensive work examining our local rural populations, with particular focus on the most deprived and resource-limited patients—namely those who are housebound, frail, multi-morbid, and highly vulnerable. Two years ago, we conducted a detailed report exploring how to improve cardiovascular disease prevention within this group. As part of this work, we carried out over 60 home-based interviews to better understand their needs and barriers to care. {please see attached slide presentation}

A key finding from this research was the extent to which these patients depend on friends and family for transport to healthcare services. In the absence of such support, many simply do not access care. This is deeply concerning, as delays or barriers to healthcare access often result in patients only seeking help when they are acutely unwell, leading to avoidable emergency admissions via hospital or A&E.

Given the likely disruption to our already fragile rural road network and transport infrastructure, the proposed development poses a significant risk to this particularly vulnerable cohort. Any additional delays in access to primary care services may further discourage engagement with preventative and routine healthcare, ultimately worsening health outcomes and increasing unplanned hospital admissions.

For these reasons, I am concerned that the cumulative impact of infrastructure disruption in rural North Buckinghamshire, including the area around Winslow and surrounding villages, will disproportionately affect those least able to access healthcare and place our most vulnerable patients at significant risk at being unable to access health care acutely and disrupt their use of ongoing medical resources.

I am writing in my professional capacity as a General Medical Practitioner serving patients in the North Buckinghamshire area, including those residing in and around Botolph, Claydon and East Claydon.

My primary concern relates to the potential cumulative impact of the proposed Rosefield Solar Farm, in conjunction with ongoing and planned major infrastructure works, particularly the HS2 development and the East West Rail Link, on the health needs and healthcare access of the local population.

1. Access to Healthcare and Traffic Disruption

Reliable road access is essential for timely patient care, including urgent consultations, home visits, district nursing, ambulance access, and routine appointments for elderly and vulnerable patients. The additional construction traffic associated with the solar farm, when considered alongside existing and anticipated disruption from HS2 and East West Rail works, risks significantly increasing journey times across already constrained rural road networks.

In rural communities such as these, patients are disproportionately dependent on private transport due to limited public transport provision. Any sustained congestion, road closures, diversions, or heavy vehicle movements may:

- Delay emergency and urgent medical access
- Reduce attendance at essential medical appointments
- Disrupt community healthcare services such as district nurses, palliative care teams, social prescribers and home care provision
- Increase stress and anxiety in vulnerable populations. These rural elderly are proud and independent, don't like to complain and lacking rural amenities rely on goodwill of family and friends. As a result, they often leave it late in their illness trajectory and then contact emergency services. This causes increased emergency admission especially out of hours and is recognised as a key determinant in preventable early death

2. Cumulative Impact on a Rural and Ageing Population

The villages affected include a notably ageing demographic, with higher levels of chronic disease [see demographic information below], mobility limitations, and reliance on local GP and community services.

Planning assessments must explicitly consider cumulative health impacts, not just the isolated effect of a single development.

The concurrent pressures from multiple large-scale infrastructure projects raise legitimate concerns about:

- Social isolation due to travel disruption
- Reduced physical activity if access routes are compromised
- Mental health impacts from prolonged construction disturbance
- Increased demand on primary care services arising from environmental stressors

3. Impact on Emergency and Community Care Provision

As a practising GP, I regularly undertake home visits and coordinate with community healthcare teams. Any deterioration in road reliability directly affects the ability to deliver equitable healthcare. Emergency response times may also be affected if rural routes experience sustained construction-related disruption.

We already suffer road congestion issues because of flooding, single lane country lanes with passing points, livestock on the road and agricultural machinery on the road. Road fatalities and injuries occur at a higher rate than average on our roads even before this planned development.

A comprehensive Health Impact Assessment should therefore be considered essential before approval, specifically addressing:

- Traffic modelling including cumulative infrastructure works
- Emergency vehicle access routes
- Access to GP surgeries, pharmacies, and community health services
- Impacts on vulnerable and elderly patients

4. Request for Robust Mitigation Measures

Should the development proceed, I would strongly urge the planning authority to require:

- A detailed Construction Traffic Management Plan that explicitly accounts for concurrent HS2 and East West Rail disruption
- Guaranteed protection of key healthcare access routes
- Ongoing liaison with local healthcare providers
- Monitoring of traffic impacts on emergency and primary care access

Conclusion

While I recognise the importance of renewable energy development, it is essential that planning decisions fully consider the cumulative public health implications for rural communities already experiencing significant infrastructure disruption.

From a primary care perspective, the potential compounded impact on healthcare accessibility, patient wellbeing, and service delivery represents a material planning consideration that warrants careful scrutiny before any approval is granted. This proposal will have a direct and detrimental effect on our community's health that will be measurable

Yours faithfully,
Dr Rodger Dickson

General Medical Practitioner
Senior Partner 3W Health
Clinical Director North Bucks Primary Care Network

PRACTICE POPULATION HEALTH REPORT

3W Health (Wing, Winslow, Whitchurch) – North Buckinghamshire

ICB: Buckinghamshire, Oxfordshire & Berkshire West
Setting: Rural / semi-rural multi-site GP practice

The practice operates across Wing, Winslow and Whitchurch in North Buckinghamshire, serving a dispersed rural population with ageing demographics and limited alternative primary care access .

1. Registered Population & Catchment Characteristics (Latest NHS Profile Estimate)

(Derived from GP Profiles 2024–2025 + QOF list size benchmarks for comparable North Bucks practices)

Indicator	Estimated Value	England Comparison
Total List Size	~15,000–17,500 patients	Medium-large rural practice
Population Density Low (rural catchment)		Much lower than urban
Practice Type	Multi-site rural	Higher access dependency

Planning relevance:

Rural GP practices have significantly lower substitution capacity if access is disrupted (e.g. traffic, air quality, noise barriers affecting vulnerable groups).

2. Age Structure (Precise Analytical Breakdown)

Population Pyramid (Practice-Level Estimate)

Age Band % of Practice England Avg Interpretation

0–4	~5%	6%	Slightly lower birth rate
5–14	~11%	12%	Family population present
15–24	~9%	12%	Youth outmigration typical
25–44	~24%	26%	Commuter demographic

Age Band % of Practice England Avg Interpretation

45–64	~28%	26%	Above national
65–74	~13%	10%	Significantly higher
75+	~10%	8%	High frailty cohort

Key Clinical Planning Interpretation

- ~23% aged 65+ (very high for GP practice)
 - Higher frailty, dementia risk, multimorbidity
 - Increased reliance on local, accessible primary care
 - Higher than average UK for those in receipt of disability allowance and attendance allowance
-

3. Sex Distribution

Sex	%	Notes
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Female	~50.8%	Higher consultation rates
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Male	~49.2%	Typical UK GP distribution
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4. Ethnicity Profile (ONS + GP Comparator Modelling)

Ethnicity	Estimated %
White British/Other White	88–93%
Asian	3–5%
Black	<2%
Mixed/Other	2–4%

This reflects rural Buckinghamshire demographic patterns with lower diversity than urban England.

5. Socioeconomic Status (IMD Deprivation Breakdown)

Using Lower Super Output Area mapping to practice footprint (Wing, Winslow, Whitchurch):

IMD Quintile	% of Registered Population
Quintile 1 (Most deprived)	4–6%
Quintile 2	10–14%

IMD Quintile	% of Registered Population
--------------	----------------------------

Quintile 3	18–22%
------------	--------

Quintile 4	28–32%
------------	--------

Quintile 5 (Least deprived)	30–38%
-----------------------------	--------

Interpretation for Planning Objection

- Overall affluent catchment
- BUT pockets of rural deprivation and transport dependency
- Hidden deprivation typical in rural health geographies

6. Major Disease Prevalence (QOF-Aligned Registers)

(Most critical section for health impact arguments)

6.1 Cardiometabolic Disease

Condition	Practice Prevalence (Est.)	England Avg	Risk Level
Hypertension	14–17%	~14%	High (age-driven)
Diabetes (Type 1 & 2)	5.5–7%	~7%	Moderate
Coronary Heart Disease	3–4%	~3%	Slightly higher
Stroke/TIA	1.8–2.5%	~1.7%	Elevated due to ageing

6.2 Respiratory Disease (Critical for Air Quality Arguments)

Condition	Estimated Prevalence
Asthma	6–8%
COPD	1.2–2%
Long-term respiratory disease (combined risk group)	~8–10%

This cohort is **particularly sensitive to particulate pollution, construction dust, and environmental disruption.**

6.3 Mental Health

Register	Estimated %
Depression (18+)	11–14%

Register	Estimated %
Severe Mental Illness (SMI)	0.7–1%
Anxiety-related conditions (proxy)	12–18% (recorded + unrecorded)

6.4 Age-Related & Frailty Conditions

Condition	Estimated Prevalence
Dementia	0.8–1.2% (diagnosed)
Chronic Kidney Disease	4–6%
Osteoporosis/Falls Risk Cohort High (not fully captured in QOF)	
Cancer (all registers)	2–3%

7. Multimorbidity Burden (Key Planning Impact Metric)

Estimated:

- ~28–32% of patients have ≥ 1 long-term condition
- ~12–16% have ≥ 2 long-term conditions
- Frailty register likely above national average

This is typical for rural ageing practices where complex care is GP-dependent.

8. Vulnerable Population Groups (High Sensitivity to Environmental Disruption)

High-risk cohorts within 3W Health list:

- Elderly (≥ 75 years): ~10%
 - Children with chronic asthma: ~2–3%
 - Disabled & housebound patients (rural access dependent)
 - Palliative care patients (home-visiting reliant)
 - Dementia & frailty patients requiring local continuity of care
-

9. Healthcare Utilisation Implications

Based on GP profile methodology:

- Higher GP consultation rate than England average (age-adjusted)
- Increased home visits due to rural geography

- Limited nearby alternative practices
- Dependency on road access to surgeries (Wing, Winslow, Whitchurch)

The National GP Profiles confirm that practice-level indicators are specifically used by commissioners and planners to assess service demand and population need .

10.1 Potential Health Risk Amplifiers

Given the practice profile:

- High elderly population → vulnerable to noise, traffic, air pollution
 - Chronic respiratory disease cohort (~10%)
 - High multimorbidity → increased appointment frequency
 - Rural transport reliance → site disruption may impair access to GP care
-

10.2 Strategic Planning Argument (Strong)

From a public health standpoint, developments affecting:

- Access routes
- Environmental exposure
- Rural service infrastructure

have **disproportionate impact** in ageing rural GP catchments compared to urban populations.

11. Executive Summary

3W Health serves an ageing, predominantly rural population with elevated rates of long-term conditions including hypertension (~15%), respiratory disease (~8–10%), and multimorbidity (>30%). Approximately 23% of registered patients are aged over 65, significantly above the national average. The practice population also includes vulnerable cohorts reliant on local, accessible primary care due to rural transport constraints. Any large-scale environmental or infrastructure development in close proximity to the practice catchment—such as the proposed solar installation near East Claydon and Botolph Claydon—has a measurable potential to impact healthcare access, environmental exposure risk, and continuity of care for high-need patient groups.

NORTH BUCKS PCN CVD CHAMPIONS PROJECT 2023-24

Dr Rodger Dickson



INTRODUCTION

We defined a cohort of patients within our PCN who were elderly, frail, with chronic diseases, isolated and not currently being followed consistently clinically. We proposed a general chronic disease review focussing on CVD.





METHOD

By securing health inequalities funding we employed a senior Advanced Nurse Practitioner (ANP) with experience in chronic disease management to visit patients in their own home to conduct these assessments.

We identified our cohort as those who were homebound, elderly , chronic co-morbidity with no active GP follow up

A total of 112 were identified.

55 visits were completed within the 6 month time frame

North Bucks PCN may be the most rural PCN in BOB – a 40 minute+ drive between some villages

Data on cholesterol levels, Q-risk, current blood pressure, vaccination status and social/ psychological welfare were gathered.

RESULTS



Ischaemic heart disease prevention – statins

- 24/55 currently on statins
- <85 + Q-risk >10% and >85 NOT on statin 31/55
- 3 commenced on statin
- 10 previous adverse effects
- 15 declined offer
- 3 no reason offered

RESULTS



Hypertension

- 52/55 had a diagnosis of hypertension
- 3 undiagnosed
- $>80 >150/90 = 2$
- 1 undiagnosed- started on amlodipine
- 1 drugs stopped after recent hospital admission and never recommenced
- $>80 <150/90 = 35$ satisfactory control

- $<80 >140/90 = 2$
- 1 new diagnosis after BPM commenced on therapy
- Complex polypharmacy and declined further medication
- $<80 <140/90 = 12$ satisfactory control

RESULTS



Vaccination status

- Pneumonia 4/55 unvaccinated
- 3 vaccinated
- 1 declined
- Shingles 4/55 unvaccinated
- 3 declined
- 1 vaccinated

RESULTS



- Our PCN has established a team of social prescribers [currently 5] evolved over the past 10 years+ who manage a caseload as well as direct referrals from GP's nurses and other frontline primary care agencies.
- They home visit and do a wide ranging social psychological assessment and are able to sign post, refer within primary care team and have access to telephone support volunteers.
- Already known to team =7
- Referred to team = 15
- Declined referral = 18
- No referral required = 15



SUMMARY

In a pure “bangs for bucks” approach to contribute to BOB’s targeted reduction in strokes and heart attacks this probably is NOT the way to do it.

Surprisingly, a good number of this frail cohort were already on appropriate preventative CVD treatment. Most who weren’t did so voluntarily and not through NHS neglect.

Our ANP Sarah who did the visits commented on how she was less struck by clinical need than the fact that significant numbers were isolated, lonely and needing psycho-social support. Nearly half the cohort are or will be seen by our social prescribers at some time.

Sarah also commented on the difficulty arranging, accessing and travelling to this group. She found a significant number were getting clinical follow up via a remote chronic disease nurse employed by 3W. We wonder if this in fact the best way forward in future to look at this aspect of care.

We hope to use our experience with this project to inform the development of our local Integrated Neighbourhood Team. Using a model of remote chronic disease management, HCA visiting for bloods/metrics, remote BP management, and target social prescriber visits to pick off the really vulnerable within this cohort.

Planning Act 2008 – section 55

Application by Rosefield Energy Farm Limited for an order granting development consent for the

Rosefield Solar Farm (EN010158)

CLAYDONS SOLAR ACTION GROUP APPENDIX CSAG 0005

Views from dwellings overlooking Order Limits

Ivy Nook East/Botolph Claydon



Photo 1 – Looking south/ south east towards Parcel 2



Photo 2 looking south towards Hogshaw Farm Parcel 3 and Parcel 2 meet



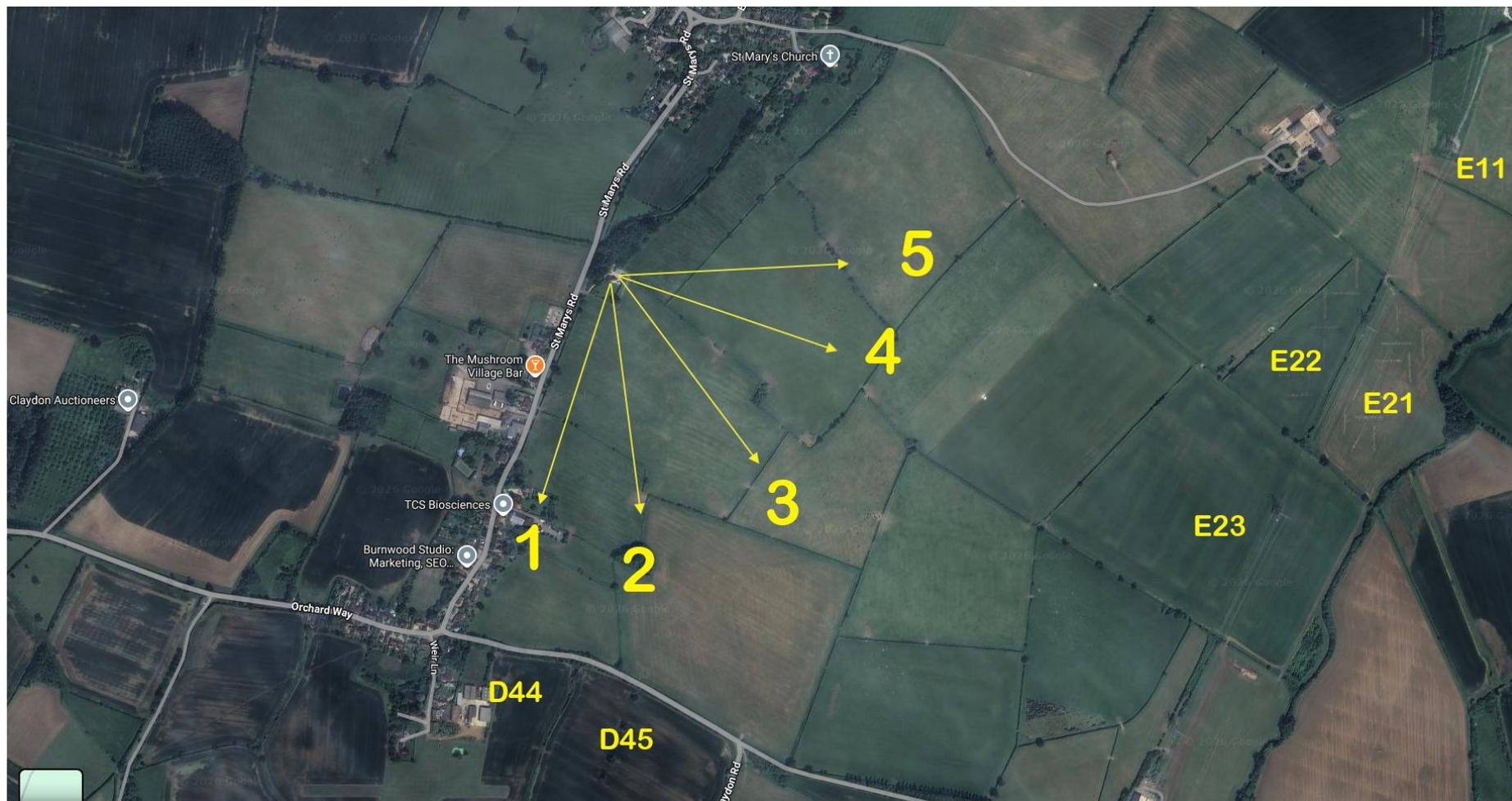
Photo 3 Looking South / South West over Parcel 3



Photo 4 looking West (towards E23)



Photo 5 -Looking North West Towards Sion Hill / East Claydon Power Station



Images taken from bedroom windows of Ivy Nook.

Botolph House (Grade II*) Botyl Road, Botolph Claydon





Overlooking Parcel 3

46 Botyl Road. Overlooking Parcel 3



2 Calvert Cottages, toward Pond Farmhouse, overlooking B1-B4





2 Calvert Cottages towards field B13

Catherine Cottages towards B22



Catherine Cottages towards Knowl Hill over Parcel 1





19 Orchard Way – overlooking Parcel 2

1 Hinton Close, East Claydon - Overlooking Parcel 3



Steve Tyler
Chairman
Claydons Solar Action Group

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Our ref: DW/E2241/ST-03.12.24

3rd December 2024

Dear Mr Tyler

Statutory pre-application consultation on proposed Rosefield Solar Farm Biodiversity Matters

This letter sets out our findings further to your instruction to us to conduct a review of biodiversity information associated with the proposed Rosefield Solar Farm, Claydon, Bucks and to highlight any matters that should be raised in responding to the statutory pre-application consultation that closes on 5th December.

Method

In reviewing the issues raised by the proposed scheme and the consultation material, Bioscan have undertaken the following:

- A review of documentation on the Rosefield Solar Farm website (<https://rosefieldsolarfarm.co.uk>) in particular the Preliminary Environmental Impact Report (PEIR) Chapter 7 (Biodiversity), and the supporting appendices to that chapter – especially Appendices 7.1-7.12 – and a comparison of this information with methodological good practice, professional standards and industry guidance and Bioscan’s fund of knowledge about the potential issues raised by solar schemes in this geographical area and in this type of landscape.
- A site visit and walkover assessment (from public rights of way) to consider the accuracy of the information in the PEIR against the position on the ground. The site visit encompassed parts of parcels 1, 1a and 2 and was conducted on 27/11/2024. At this time of year, attention was necessarily focused on and limited to checking the habitat mapping presented in the PEIR and on assessing whether the wintering bird assemblage present was consistent with that reported in the PEIR.

Results – discrepancies between position on the ground and that presented in the PEIR

Habitats and flora

Bioscan’s walkover found that the UKHab mapping presented at Figure 3 of PEIR Appendix 7.7 (PEA 2024) contains some errors and oversimplifies the position on the ground. One particular area of omission/error relates to the field margins of arable fields (cropland) in Parcel 1. Whilst the presence of arable field margins is mapped in Parcel 2 and 3 field units, this is inexplicably not the case for Parcel 1, despite the presence of such features in “all surveyed

fields in parcel 1” being specifically remarked upon at 3.2.25 of Appendix 7.7. Figure 3 of that report instead subsumes these margins within the wider field unit as an extension of the arable/cropland/cereal crops. This is despite their size exceeding the minimum mapping unit applicable under the UKHab methodology.

This amounts to an erroneous and unwarranted misrepresentation of baseline conditions and a suppression of value. Some of these field margins have a not insignificant complement of neutral grassland indicator species such as knapweed and meadow barley – others are tussocky with a significant *Deschampsia* component (see photograph 1 below). Such features will be highly important for supporting farmland species and facilitating their dispersal and movement through the landscape, and some at least will be representations of Priority habitat. Certain scarce species recorded in the prospective applicant’s surveys (e.g. grasshopper warbler) will almost certainly only have been present by virtue of these habitats. They are also likely to be a critical resource for bat foraging and for farmland birds, amphibians and potentially also reptiles.

Photograph 1 – example of broad (c4m) tussocky neutral grassland field margin (Field B4) omitted from the prospective applicant’s UKHab mapping (relevant page from Appendix 7.7 Figure 3 overleaf with the relevant field edge/boundary circled)





The above shows the location of the field margin shown in Photograph 1 (circled) on a screengrab of the relevant sheet of Figure 3 of Appendix 7.7 showing the prospective applicant's UKHab mapping. The field margin is mapped as being cultivated land right up to the hedgerow, which is incorrect. As the prospective applicant acknowledges, most fields in Parcel 1 have similar field margins to those in Photo 1, yet it has elected to map none of them. Cumulatively these margins will comprise a significant area of higher value habitat than is conveyed by the prospective applicant's habitat mapping.

The exclusion of these features is a significant omission and will have a significant suppressing effect on the BNG baseline. Such errors will need to be corrected prior to any assessments of impact and calculations of net gain.

It is further noted that no condition assessment has yet been presented for any of the habitats. Bioscan noted that some of the grasslands mapped as 'modified' on the site had sufficient species diversity to elevate them to 'moderate' or 'good' condition and/or to be classified as *Lolium-Cynosurus* neutral grassland, or even other neutral grassland. The prospective applicant proclaims confidently that it will be able to design a scheme that compensates sufficiently for impacts and achieves the mandatory 10% biodiversity net gain, but it is unclear how it has arrived at that conclusion without determining the condition of the habitats it has mapped, and which will be impacted. If it *has* determined their condition, that information could usefully have been presented now (and it would have been in the prospective applicant's interest to do so) such that its accuracy could be determined, and if necessary corrected, prior to the application.

The waxcap *Cupophyllus virgineus* was noted in permanent pasture adjoining Sheepphouse Wood (Field B7), suggestive that a survey of the permanent grasslands on the site for grassland fungi might be worthwhile. This highlights the related point that it is unclear to what extent the prospective applicant's surveys have been duly

scoped with the LPA and statutory and non-statutory consultees, in accordance with good EIA practice. A thorough scoping exercise can help avoid survey omissions.

We note that the prospective applicant has given specific consideration to arable plants (paras 3.3.23-3.2.26 of Appendix 7.7) which is welcomed, and which represents progress on a matter that is so commonly neglected in solar farm EIAs affecting arable habitats. However, the comments and conclusions presented in these paragraphs are rendered somewhat unconvincing by the depauperate species list presented at para 3.2.26. For such a large site area, on these soils, Bioscan would expect a list of arable plants several times the length of this one to be obtained from anything close to a thorough consideration of this matter.

Wintering birds

Bioscan's walkover of 27th November noted a suite of bird species consistent with that recorded in the prospective applicant's non-breeding bird surveys, with some notable differences:

- Significantly greater numbers of starling were present on 27/22/2024 (flock size estimate 600 birds) than on any of the prospective applicant's wintering birds surveys.
- Significantly higher numbers of herring gull and black-headed gull were also noted using the fields.
- The numbers of bullfinch and reed bunting noted on Bioscan's visit suggest a significantly higher presence than is conveyed by the prospective applicant's wintering or breeding bird survey information (see e.g. Figures 2b(i) and 2b(ii) of Appendix 7.12 of the PEIR)

It is noted that in 2023-2024, a mere four wintering bird survey visits were undertaken by the prospective applicant's consultants, which is short of accepted guidance¹. Whilst better temporal coverage was achieved in 2021-2022, only one visit that winter was completed within the peak midwinter period of Dec-Jan. Taken together with the results of Bioscan's brief and partial walkover discussed above, and the fact that spatial coverage achieved in the prospective applicant's surveys was far from complete (see below), this rather undermines the faith that can be had in the robustness of the wintering bird work – particularly in respect of use of the site by species such as snipe, lapwing and golden plover and by scarcer raptors, which are all key receptors given their particular vulnerability to displacement by solar schemes.

Other shortfalls and omissions in relevant ecological information

In respect of the other surveys carried out, the standard of ecological information collected to date appears broadly in line with the requirements for EIA, having regard to the nature of the development and its likely zone of influence. Survey coverage is however incomplete, and whilst the prospective applicant acknowledges this, its comments around further surveys to support the ES (e.g. at section 7.14 and 7.15 of the PEIR) do not seem to suggest sufficient coverage in further surveys is intended, nor sufficient commitment to ensuring a robust baseline for assessment, despite the claims otherwise.

The main information gap to draw attention to at this stage is the absence of adequate ecological information and/or survey coverage for the significant tracts of land within the indicative site boundary identified for "*underground cable routes, access tracks and temporary construction compounds (locations to be determined)*" (Zonal masterplan – PEIR Figure 1.2). The total area of this land category amounts to approaching 50% of the land

¹ As standard it is recommended that monthly survey visits (i.e. one visit per month) be undertaken as part of a survey for non-breeding birds – see <https://birdsurveyguidelines.org/non-breeding-walkover-survey/>

falling within the 'indicative site boundary', meaning that approaching 50% of the project area has not yet been surveyed to the level of detail that would be expected to support a Development Consent Order application.

By comparison with the survey results and/or coverage (e.g. transect routes) shown on the maps in the supporting reports at Appendices 7.1-7.12, it would similarly appear that only the 2024 PEA (habitats) and the preliminary aquatic survey report cover the entirety of the 'indicative site boundary'. This means that coverage for relevant ecological receptors (bats, wintering and breeding birds, great crested newts and other taxa such as badgers) is also deficient. There appears to have been no survey coverage for certain other taxa (such as invertebrates) at all.

Given the scope for cable installation, haul roads and temporary construction compounds to impact on key receptors (identified or as yet unidentified) in these areas - for example via impacts on hedgerows that are likely to be of key importance for critical taxa of interest known from the locality (such as rare bats and butterflies) - this signposts that the conclusions of the PEIR are very much provisional and not to be relied upon as determinative of the potential ecological impact of the scheme.

Chapter 7 of the PEIR does acknowledge that the information in the PEIR is preliminary and that further work will be required for any environmental impact assessment of the scheme to be robust. However, such acknowledgement is somewhat in contrast to the more overtly public-facing material (such as the consultation booklet) which suggests (as yet without any robust basis for doing so) that the scheme will avoid significant negative residual impacts and deliver a net biodiversity benefit.

It is assumed that the promoters of the scheme will have undertaken some preliminary assessments of biodiversity change using the statutory biodiversity metric, and the results of such an exercise are anticipated to be behind certain statements referred to in the consultation – including “we have increased the amount of land proposed for landscaping and environmental enhancements by five times compared to our plans shown during the phase one consultation”. If such an exercise has precipitated the quantitative improvement on the amount of land allocated for mitigation and compensation, that is to be welcomed, but it would have been helpful for further detail on the provisional BNG assessment behind such an assessment to have been provided to have any confidence that it is sufficient to offset negative effects. That is particularly the case given the potential that we have found for grasslands and other baseline habitats to have been misclassified and/or attributed the wrong condition (see again our comments above on that matter).

Misleading claims and comments in non-technical PR material

Finally, we would remark that some of the more public-facing PR material around biodiversity and wildlife on the website and in consultation material is misleading. For example, under the FAQs on the website, and in response to the question “*How will Rosefield affect wildlife and habitats*” are the following statements:

“Monitoring of solar farms in the UK has shown that they can provide habitats for rare and vulnerable species like skylark and brown hares, as well as support a wide range of plants.”

The actual position from monitoring of solar farms, especially those sited on arable land or permanent grassland, is that they generally displace bird species that favour open country - such as skylark. Bioscan has recently reviewed the collective studies and literature around this issue and as far as it is aware the solar industry collectively has yet to be able to demonstrate successful breeding by skylark within a solar array. For such reasons, numerous solar schemes are now having to commit to off-site compensatory provision for skylark, involving S106 legal agreements

with third party landowners. It is notable that this likely impact and the likely need for compensatory habitat provision for this species and others, is not explicitly acknowledged in the PEIR, or its supporting appendices. Based on the prospective applicant's own data, it is possible that in excess of sixty skylark breeding territories could be displaced, and even with the apparent recent uplift in land set aside for landscaping and compensatory habitat creation, that number of displaced territories is unlikely to be accommodated within the site boundary. Securing appropriate compensation for such displacement will be a significant undertaking and decision-makers will need to have, at the very least, confidence that it is achievable.

"Ecology surveys have helped identify the different habitats and species in and around the site. We are proposing to set aside around 23% of the site for landscaping and environmental enhancement initiatives."

We draw attention again to our comments above about the UKHab errors and the shortfall in adequacy of coverage of the ecology surveys as compared with the land affected by the scheme and/or within the indicative project area. The implied suggestion in the first sentence that the ecology surveys have been comprehensive is therefore misleading. While the increased amount of land set aside for "landscaping and environmental enhancement initiatives" is to be welcomed, such land allocation is likely necessary in order for the scheme to be able to meet *minimum* statutory requirements to compensate for habitat losses and impacts and deliver the mandatory minimum of 10% biodiversity net gain as measured by the Statutory Biodiversity Metric. It is also important to acknowledge that a +10% compliant result from using the Biodiversity Metric does not necessarily equate to a 10% increase in biodiversity. Amongst other things, the Metric only deals with habitats as a proxy for interest and does not account for species interest. Therefore, a scheme that will result in wholesale loss or displacement of the site's rare bat and declining farmland bird assemblages could, under the BNG Metric, deliver the same 'score' as one that would not. As a further example, the BNG regime would not capture or factor in to its quantitative measures the anticipated level of skylark displacement referred to above.

The same caveats and cautions apply to the proponents claim that "*we will design a detailed biodiversity plan for Rosefield Solar Farm to deliver a 'net gain' in biodiversity*". In the absence of robust evidence of tangible gains across the full suite of taxa that comprise the site's biodiversity, not just habitats, such statements would be better couched in terms of the scheme being designed to be able deliver a 'net gain' in biodiversity "on paper". Given the incomplete surveys, the errors and omissions cited above and the inherent risks of significant negative impacts on scarce and/or declining fauna from displacement, the case that genuine biodiversity gain will arise from this scheme is simply not yet made out, nor indeed is the case that net biodiversity loss can and will be avoided.

I hope the above comments are useful. We are happy for you to include this letter in your formal response to the statutory pre-application consultation.

Best regards



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Our ref: DW/E2241/ST-13.02.26

13th February 2026

Dear Helen

Rosefield Solar Farm - Biodiversity Matters
Comments and observations on recent/current works in eastern part of application area

Further to your request, I set out below my observations and concerns around the drainage works currently taking place in the eastern part of the Rosefield Solar Farm application area. I visited the area of these works yesterday (12th February 2026) as part of my ongoing walkover programme using public rights of way.

As we have discussed, there are legitimate grounds for inquiry as to whether appropriate consents have been obtained (including protected species licences) and/or other regulatory protocols adopted prior to these works. You have suggested you may wish to make inquiries to the relevant regulators – i.e. the LLFA (Bucks Council), Forestry Commission, Natural England and (as administrators of the local GCN District Licensing Scheme) NatureSpace and potentially also alert the Examining Authority and others to any transgressions that such inquiries confirm. This letter seeks to set out the salient facts and evidence to assist you in pursuing those inquiries and actions.

The works in question comprise drainage works along several hundred metres of boundary ditch and hedgerow and involve a small area of mature woodland with two ponds. Their approximate location (as of yesterday¹) extends from approximately SP73195,23289 (what three words: worldwide.question.chickens) south-eastwards along an existing ditch and hedgerow to approx. SP73906,23650 (w3w: station.incur.divorcing) and taking in a small copse of mature woodland at SP73477,23414 (w3w: update.fizzy.sprinter)

The concerns around these operations are fourfold, as set out below.

1. Concern as to whether the works have obtained appropriate land drainage consent

The works (see images below) involve several hundred metres of excavations, tree clearing and localised reconfiguration of an ordinary watercourse and therefore appear very likely to fall within the ambit of Land Drainage Consent, the relevant Lead Local Flood Authority for which is Buckinghamshire Council. Bucks Council states that “*You’ll need to apply for land drainage consent if you’re planning on carrying out work on an ordinary watercourse. Ordinary watercourses are passages of water that do not form part of a main river. They can include:*

¹ The works are ongoing so this area of impact may expand in the coming days

streams, ditches, drains, mills, dams, culverts, weirs". It seems very likely that the works would require Land Drainage Consent and you are entitled, I would suggest, to inquire whether that has been obtained.

2. Concern as to whether the works fall within the quarterly cut timber allowance or, in the alternative, require a felling licence.

I enclose some photographs below which shown the extent of felling and an appreciation of the quantity of cut timber associated with the works. Within the small woodland there are 3-4 large piles of cut timber, including much brush, but also numerous trunks and limbs in excess of 8cm in diameter and of a total volume that in my estimation, exceeds 5m³ in total. And this is obviously only the area I was able to observe from the footpath. In short, even strict application of the relevant criteria for determining timber volume, including discounting <8cm stems, puts the extent of cutting and felling witnessed today (and ongoing) at >5m³ – i.e. in excess of the quarterly cut timber allowance The works should therefore be subject to a felling licence and you may wish to inquire of the Forestry Commission whether such a licence has been obtained.

Photos 1-3 below – cut >8cm diameter timber in several piles estimated to exceed 5m³ in total.





3) Possible Great Crested Newt offences.

The OS extract below shows there to be two ponds in the small woodland, and another adjacent to the ditch-line a few hundred metres to the north-east.



Both of these woodland ponds have been subject to works, including apparent excavation or re-excitation of a connecting ditch between them. In addition, the terrestrial habitat around these ponds, including root plates and fallen deadwood, has been comprehensively disturbed and compacted. as the photos below attest.

Photos 4 and 5 – works in and around ponds with potential for GCN



Ponds in this part of Buckinghamshire often support great crested newts (GCN), and as these spend most of their time on land near ponds, particularly in the winter, they would be at clear risk from these groundworks activities should they happen to be present.

One might expect the question of GCN presence or absence here to be informed by the survey information submitted with the Rosefield Solar Farm application. However, none of these three ponds was actually surveyed

for GCN – all three² were ‘scoped out’ on the basis of low Habitat Suitability scores (applying the Habitat Suitability Index system).

Having now visited the site, I consider that the low HSI scores for these ponds, and the resultant decision to scope them out, is not a reliable indicator of GCN absence. For example, there is at least one clear error in the HSI scoring for the woodland pond (Pond 6), as evident in the extract from the Rosefield amphibian survey report below:

Table B-1: Habitat Suitability Index scores for water bodies assessed

Water body Reference (see Figure 1)	Water body Area (m ²)	Water body Drying	Quality	Shade (%)	Fowl	Fish	Water bodies within 1km	Terrestrial Habitat	Macrophytes (%)	HSI Score
5	500	Rarely	Poor	60	Absent	Absent	1	Good	20	0.77
6	1047	Sometimes	Bad	80	Absent	Absent	0	Moderate	<1	<0.50
8	100	Sometimes	Poor	0-10	Minor	Absent	0	Moderate	<1	<0.50
9	95	Rarely	Moderate	5	Absent	Absent	1	Good	5	0.63
10	275	Rarely	Moderate	30	Absent	Absent	1	Good	20	0.78

Pond six is scored ‘0’ in relation to the criterion ‘water bodies within 1km’. However, by reference to OS mapping (see previous pages of this letter) and the position on the ground, this is demonstrably incorrect: there are in fact several ponds within 1km. Adjusting the HSI score to reflect this correction would bring it above 0.50 which would mean that by the Rosefield consultants’ own criteria, this pond (or ponds) should have been ‘scoped in’ for further determinative survey.

The decision to scope these ponds out from any further survey also sits at odds with the strategic GCN risk mapping followed by NatureSpace in Bucks, which places this area in the ‘amber’ risk area. (Amber = suitable habitat – great crested newts are likely to be present) (the location of Pond 6 is shown by the blue dot on the NatureSpace mapping below)



² The two woodland ponds were considered by Rosefield’s ecologists to be one feature, despite the OS mapping showing them as two separate features.

As the area of works falls within an 'amber' risk area, if these drainage works had been submitted to Bucks Council (e.g. for Land Drainage Consent or for planning permission), in all likelihood the applicant would have been directed to do more survey work than just a cursory HSI and/or to have paid into the District Licence scheme administered by NatureSpace to derogate from any likely offence.

We recognise that general agricultural and forestry operations (e.g. annual tilling) often escape the survey and licensing rules for species such as GCN. This is on the unstated basis that these are routine operations carried out in a knowledge vacuum and without any intent to harm or recklessness towards harming great crested newts. However, that form of derogation falls away where high risk activities (e.g. ground disturbance works on on-tilled land) are being carried out (or instructed) in areas where the presence of GCN is known or can reasonably be expected to be known. Here, the Rosefield surveys did not confirm GCN presence in these ponds (albeit they were found nearby in ponds to the NE and SW of this location) *only* because no determinative survey was actually conducted - only Habitat Suitability Index assessments which are demonstrably erroneous on at least one count. Thus, the Rosefield application consultants' decision to scope out further survey is challengeable, and any suggestion that further survey would not have found GCN is not reliable, even setting aside that this is a different and somewhat incongruous conclusion about GCN presence/likely presence than the data relied upon by NatureSpace (and by extension Natural England).

You may wish to check with Natural England and NatureSpace as to whether appropriate licences have in fact been obtained. This seems unlikely, however, and there would therefore appear to be a case to be made that there has been an at best misguided, but arguably cavalier, reckless or wilfully neglectful approach toward the likely presence of this protected species here, and that avoidable offences may have resulted. I am unconvinced that the affected ponds should have been scoped out from proper GCN survey and therefore am not convinced that there has been no risk to GCN here.

4) Possible offences as regards bat roosts

Finally, I yesterday saw clear scope for bat roosts to have been impacted and/or destroyed by the works, with no obvious suggestion that licensed avoidance and mitigation measures have been carried out. This is an especially alarming possibility given the known importance of the locality for bats, including the very rare Becshtein's bat and barbastelle.

As the photos below testify, there has been significant felling of or limb removal from trees with evident bat roosting potential, and some potential bat roosting features were observed yesterday in felled limbs (see photos below).

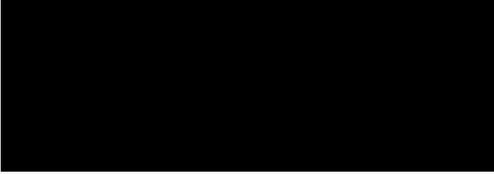
Given the very high profile of the local rare bat populations into the context of the Rosefield application, there would therefore appear to also be a case to be made that there has been an at best misguided, but arguably cavalier, reckless or wilfully neglectful approach toward the likely presence of protected bats species here, and that further avoidable offences may have resulted. You may however wish to check with Natural England whether licences were duly obtained.

Photos 6-9 – felled limbs with potential roosting features and trees with roosting potential that have been hacked at by diggers



I hope the above provides the supporting information you need to pursue your inquiries.

Best regards



Dominic Woodfield CEcol CEnv MCIEEM
Managing Director

Arable reversion to species-rich grassland: site selection and choice of methods

The reversion of arable land to permanent grassland is a major work area funded through Environmental Stewardship. There are a number of reasons why arable land is reverted to grassland. This note focuses on the creation of species-rich grassland, that is, grassland comprising species characteristic of semi-natural grassland communities, in particular wild flowers. Other notes provide guidance on establishing a species-rich sown sward and the early management of a species-rich sward.

Key points

- Sites must be carefully selected to ensure that their reversion to grassland delivers environmental benefits.
- Knowledge of soil type, pH and nutrient status is essential.
- Reverted swards can be very different from conventional grass leys. Productivity may be affected and the impact on the existing farming system must be considered.
- Areas of existing semi-natural habitat can be linked, creating larger, more coherent blocks. This can help species adapt to climate change
- Additional grazing can be provided which may aid the management of other habitats, for example by allowing stocking rates to be reduced, or by making grazing of small areas of semi-natural grassland more viable.

Why revert arable land?

Arable reversion can have a number of environmental benefits including ecological, landscape, archaeological and resource protection benefits.

Ecological benefits

- It may provide opportunities for the re-creation of species-rich grassland and other valuable habitats such as wetland and heath.
- Habitats can be created to benefit specific species, such as wet grassland for wading birds and wildfowl.
- It can provide a buffer from fertiliser run-off and sprays, for example alongside Sites of Special Scientific Interest (SSSIs), rivers and other important wildlife areas.



Yellow-wort in re-created chalk grassland

Arable reversion to species-rich grassland: site selection and choice of methods

Landscape benefits

- Arable reversion can be used to unify fragmented areas of permanent grassland in open downland or hill farmland landscapes.
- An arable/grassland balance can be restored in mixed farming landscapes in small to medium sized fields.
- The lush pastoral landscape character of lowland valley landscapes can be reinforced.
- The view from a public view point can be improved, for example by reverting a highly visible field on an open hillside that perhaps contains a copse or several field trees.

Archaeological benefits

- Arable reversion can protect archaeological features from damage caused by cultivation.
- It can also enhance the setting of a historical feature.

Resource protection benefits

- Arable reversion to grassland can help prevent or reduce the risk of soil erosion and run off.

Carbon storage benefits

- Carbon will rapidly accumulate in soil that has been in long-term arable cultivation when it is reverted to grassland and left undisturbed. This accumulation will continue for many decades and is valuable in combating climate change.

Agricultural considerations

From an agricultural point of view arable reversion can be used to:

- bring less profitable areas out of cultivation, for example steeper, wetter or more remote land, or land with very poor soil;
- provide additional forage area; and
- enable wider changes to the farming system.

Often those areas, which are less profitable to cultivate, provide the greatest environmental benefits when reverted to grassland.

There is evidence that animals grazing extensively on semi-natural species-rich swards

may benefit from a higher mineral intake and lower worm burdens.

Where fencing and water supplies are being introduced, or re-introduced, capital grants or standard payments may be obtained. Such works should increase the value of the farm.

Potential effects on productivity

Choosing to revert arable land to permanent species-rich grassland is a major decision and a long term commitment, particularly where there will be little or no fertiliser input.

Where land has been in arable cultivation for many years reversion can be followed by a period of low productivity known as the lean years. This is caused by a shortage of nitrogen and it may be many years before nitrogen builds up and the sward is as productive as permanent semi-natural grassland.

Environmental Stewardship scheme objectives and management requirements will not normally be the same as those of a conventional grass ley. Any seed sown will usually have to be selected from a list of species or agreed in advance, and the use of inorganic fertilisers is not normally permitted, although a light application of well rotted farm yard manure in the first year can, in some cases, boost organic matter content and aid establishment.

As a result, the reverted sward is unlikely to be as productive as a conventional ley. The yields of hay or silage are unlikely to be as high and the sward may not be suitable for the existing livestock system.

For example, the slow spring growth of these swards often makes them unsuitable for a sheep flock lambing in March and their lower digestibility may cause rejection by livestock, particularly sheep, that are accustomed to ryegrass/clover swards.

Livestock systems may need to be modified, for example by moving to later lambing, changing breeds and/or introducing mature cattle.

Arable reversion to species-rich grassland: site selection and choice of methods

Legislative implications

Environmental Impact Assessment (Agriculture) Regulations

At the end of an agri-environment agreement land managers wishing to return the land to cultivation or other intensive use may need to apply to Natural England for an EIA screening decision if the land has not been cultivated for more than fifteen years and it is greater than 2 ha in size.

Two categories of land could fall within the scope of the Regulations:

- **Uncultivated land** - This is land that has not been subject to physical or chemical cultivation in the last fifteen years. Physical cultivation would include ploughing, sub-surface harrowing, discing, tining etc whereas chemical cultivation is defined as any chemical enhancement of the soil through applications of fertilisers, manures or lime etc.
- **Semi-natural areas** - These include habitats such as calcareous grassland, species rich neutral grasslands, heathland, moorland and scrub (a full list can be found in Annex 1 of the EIA Guidance). For the purpose of the Regulations, Natural England will not consider land under habitat creation options under agri-environment schemes to be semi-natural for at least fifteen years after the last physical or chemical cultivation (not including any manure applied to semi-natural meadows or wetlands as part of a traditional management regime).

When a land manager applies for an EIA screening decision Natural England will make an assessment of whether the work will have a significant effect on the environment. Only where a significant environmental effect is likely will permission to proceed with the work not be granted.

A significant effect is usually considered to be a loss of more than two hectares of UK Biodiversity Action Plan (BAP) Priority Habitat or a significant population of a BAP Priority Species. Many arable reversion sites will not contain BAP Priority Habitats or Species.

In making our decision Natural England will take into account agricultural operations over the last 15 years, including ploughing and reseeded.

In most cases we will seek to retain land already in agri-environment agreements by offering to renew agreements at the end of the ten years.

By seeking to renew agreements in this way we are clearly signalling that we wish to continue the existing public investment in the protection and restoration of these habitats.

Further information is given at www.naturalengland.org.uk/ourwork/regulation/eia/default.aspx.

Countryside and Rights of Way (CROW) Act

The CROW Act seeks to give the public access to land identified by Natural England as 'open country' and 'registered common land'. The former is defined as land which appears to consist wholly or predominantly of mountain, moor, heath or down (MMHD).

The existing mapping methodology contains descriptions of MMHD and includes the requirement that the land is of an open character.

In general open country is likely to include unimproved or semi-natural grassland but exclude improved and semi-improved grassland. However, the existing maps are due to undergo a statutory review, which should be completed by 2015 and the methodology will be reviewed as part of this. For more information see www.naturalengland.org.uk/ourwork/enjoying/places/openaccess/mapping.aspx.

After ten years in agreement it is possible that arable reversion could match the prevailing description of MMHD. Any such cases would be open to consideration during the statutory review process.

There is an ongoing requirement for the CROW maps to be reviewed within 10 years of each map issue. Any land subject to arable reversion or otherwise allowed to revert to a semi-natural

Arable reversion to species-rich grassland: site selection and choice of methods

state is increasingly likely to become identifiable as MMHD in the future.

Any registered common land will be mapped as such for the purposes of CROW irrespective of the appearance of the land or the extent of agricultural improvement/reversion. Land may also be dedicated for public access by the owner under Section 16 of CROW.

Ancient Monuments and Archaeological Areas Act 1979

Archaeological sites that are designated as Scheduled Monuments are of national importance and are protected under the Ancient Monuments and Archaeological Areas Act 1979.

If, after six years under grassland, a land manager wishes to return a reverted site containing a Scheduled Monument back to cultivation, they will require Scheduled Monument Consent from the Secretary of State for the Department for Culture, Media, and Sport who would be advised by English Heritage.

Eligibility of land for arable reversion

Environmental Stewardship Scheme payments are only likely to be available to revert land that has been in arable cultivation, temporary grass ley and/or set-aside, for the 5 calendar years prior to the proposed start date of your agreement.

To qualify for funding under Environmental Stewardship arable reversion must provide environmental benefits, such as those outlined above, and meet the scheme objectives. The scheme objectives may vary between geographical areas and will need to be discussed and agreed with your Natural England Adviser.

Site objectives

Assess the existing environmental interest of the land and consider how it may be affected by arable reversion. The land may already be of value for rare arable plants or farmland birds, in which case other options such as continuing with

the existing arable regime, or entering the land into Environmental Stewardship Scheme arable options may be more appropriate.

Consider which environmental features could be protected or enhanced by arable reversion. For example, there may be archaeological features on the site or adjacent wildlife habitats. A field which has been under set-aside may have developed a sward of botanical interest. A field which is poorly drained may have potential for habitat creation for wading birds and wildfowl.

Selecting sites for species-rich grassland

Site selection is very important where the objective is to create species-rich grassland. This is a very difficult habitat to create and there have been many failures. A decision key to help identify the potential of a site for creation of species-rich grassland is shown in the *Higher Level Stewardship Farm Environment Plan Manual*, Third Edition March 2010, p.36. It is reproduced at the end of this note. The main factors to consider are:

- soil nutrient status and pH;
- weed burden;
- location; and
- management options.

Soil nutrient status and pH

Knowledge of soil nutrient status and pH is very important for setting site objectives and it provides a valuable baseline for judging progress and diagnosing problems. It is essential for assessing the potential of a site for the re-creation of species rich habitats. The most important aspects are:

- When trying to create botanically diverse habitats, soil phosphorus (P) status is critical. Where available P is high, growth of grasses and white clover is likely to be vigorous, making it difficult for wildflowers to compete.
- For other objectives, for example wet grassland creation for birds, protection of archaeological features, or buffering important wildlife areas, soil P will not be as important.

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In general when attempting to create species-rich grassland P index:

- 0 is ideal;
- 1 is satisfactory;
- 2 is marginal; and
- 3 or above is unsuitable.

Knowledge of soil total nitrogen (N) status is useful for judging the history of a field, and the likelihood of problems of low productivity. Total soil N is closely related to organic matter. Low organic matter and total N indicate long term arable cultivation.

Knowledge of soil pH and inherent soil type assists with determining an appropriate seed mix and target vegetation type.

If a soil analysis is not available, it should be determined using the methods outlined in Technical Information Note TIN035 *Soil sampling for habitat recreation and restoration in agri-environment schemes*. Further guidance on interpreting soil analysis results is given in Technical Information Note TIN036 *Soils and agri-environment schemes: interpretation of soil analysis*.

Weed burden

Weeds can be a major obstacle to successful arable reversion. Species such as common couch, broad-leaved dock, stinging nettle and creeping thistle can be very difficult to eradicate and may cause problems with sward establishment.

The use of herbicides once the sward is established may be detrimental to any desirable plant species that have colonised or been sown. The weed burden must be reduced to a manageable level prior to arable reversion being undertaken and entry into an agri-environment scheme may have to be delayed until this has been achieved.

Methods of reducing the weed burden are outlined in Technical Information Note TIN067 – *Arable reversion to species rich grassland: establishment of a sown sward*.

Location

In terms of location, the best fields to select are those which are adjacent to existing species-rich grassland or are linked to such grassland by the movement of livestock and/or machinery.

Linkages to other semi-natural habitats on the farm are also important. Isolated sites surrounded by arable land or improved grassland are unlikely to be colonised by desirable plant species or to be used by a wide range of associated invertebrates and mammals.

Management options

The management options available on a site may determine the site objectives and the suitability of the site for reversion. For example the establishment and maintenance of species-rich grassland will be much easier if livestock form part of the management.

Livestock, in particular cattle, play an important role by trampling in seed and creating patches of bare ground where it can germinate and establish without too much competition. This is important for both increasing the diversity of grassland and maintaining it.

Livestock are also important where sites are being managed for birds. Creating the right sward structure for ground-nesting birds is very difficult using mechanical means alone.

Choice of methods

The most appropriate method for establishing a sward will depend on a number of considerations, including:

- the objectives;
- the time scale for establishment;
- the location in relation to important wildlife habitats; and
- the availability of suitable seed.

Natural regeneration

Allowing the sward to regenerate naturally is a low cost method and may be attractive where one or more of the following apply:

Arable reversion to species-rich grassland: site selection and choice of methods

- The soil seed-bank contains species typical of the target vegetation type. This will often only occur when the field has been in semi-natural grassland within the last three to five years.
- The field has fragments of species-rich grassland within it, or such swards are immediately upslope or upwind and/or livestock move between the two areas.
- The field is under set-aside and has already been colonised by a range of desirable species.
- The field is wet or seasonally inundated, as species will colonise during the flooding period.
- The import of seed is to be minimised (for example on sites close to an SSSI or other existing areas of semi-natural grassland) and/or there is no appropriately sourced seed available for sowing.
- There is archaeological interest and cultivation needs to be minimised.

However, natural regeneration has many drawbacks, including:

- There is a longer period of low productivity and/or poor quality herbage for livestock.
- It is usually a slow process taking at least five to ten years and the results are unpredictable.
- There is a greater risk of soil erosion and nutrient leaching.
- There is a greater risk of weed problems.

Therefore, it is recommended that natural regeneration should only be undertaken on sites with the greatest potential where there is high commitment to success.

Natural regeneration can be supplemented with oversowing or spreading hay in order to add additional seed and speed up sward establishment. See Technical Information Notes TIN063 – *Sward enhancement: diversifying grassland by spreading species-rich green hay* and TIN064: *Sward enhancement: diversifying grassland by oversowing and slot seeding*

Sowing a seed mix

This is the quickest means of establishing a sward and is the method used on most arable reversion sites. The seed mixture sown on any

particular site should be determined by the site objectives, proximity to existing semi-natural grassland and other factors such as soil type and future management. Information on establishing a sown sward is provided in Technical Information Note TIN067: *Arable reversion to species rich grassland*:

Grass swards are sometimes established on set-aside by under-sowing in the preceding arable crop. The resulting sward will usually include a high proportion of species such as ryegrass and white clover which would not be suitable for semi-natural grassland. As a result, the sward may have to be ploughed up or sprayed off and reseeded with a suitable seed mix.

Spreading hay

Spreading hay can be an effective method of establishing a sward. Freshly cut 'green hay' taken from nearby species-rich grassland is a good means of introducing a range of local wildflower and grass species and can be cheaper than buying a commercial seed mix.

'Green hay' is herbage which is cut at, or just before, the hay stage and which is collected immediately without prior wilting or turning. It is preferable to dry hay as it contains higher numbers of seed from a wider range of species. Dry hay is dominated by grass seeds.

Spreading hay may be a good method where there is archaeological interest and disturbance to the ground needs to be minimised. Although bare ground is necessary, there is no need to create a fine seed bed prior to spreading hay.

Information on hay spreading to enhance existing grassland is given in Technical Information Note TIN063 – *Sward enhancement: diversifying grassland by spreading species-rich green hay*.

Further information

Natural England Technical Information Notes are available to download from the Natural England website: www.naturalengland.org.uk. In particular see:

Arable reversion to species-rich grassland: site selection and choice of methods

- Technical Information Note TIN067: *Arable reversion to species rich grassland: establishment of a sown sward*
- Technical Information Note TIN068: *Arable reversion to species rich grassland: early management of the new sward*
- Technical Information Note TIN035: *Soil sampling for habitat recreation and restoration in agri-environment schemes*
- Technical Information Note TIN036: *Soils and agri-environment schemes: interpretation of soil analysis*
- Technical Information Note TIN038: *Seed sources for grassland restoration and re-creation in Environmental Stewardship*
- Technical Information Note TIN060: *The use of yellow rattle to facilitate grassland diversification*
- Technical Information Note TIN063 – *Sward enhancement: diversifying grassland by spreading species-rich green hay*
- Technical Information Note TIN064: *Sward enhancement: diversifying grassland by oversowing and slot seeding*

For further information contact the Natural England Enquiry Service on 0300 060 0863 or e-mail enquiries@naturalengland.org.uk.

This note does not supersede prescriptions in agri-environment scheme agreements. If there is any conflict between the information in this Technical Information Note and your agreement please contact your Natural England Adviser.

Authors and contributors

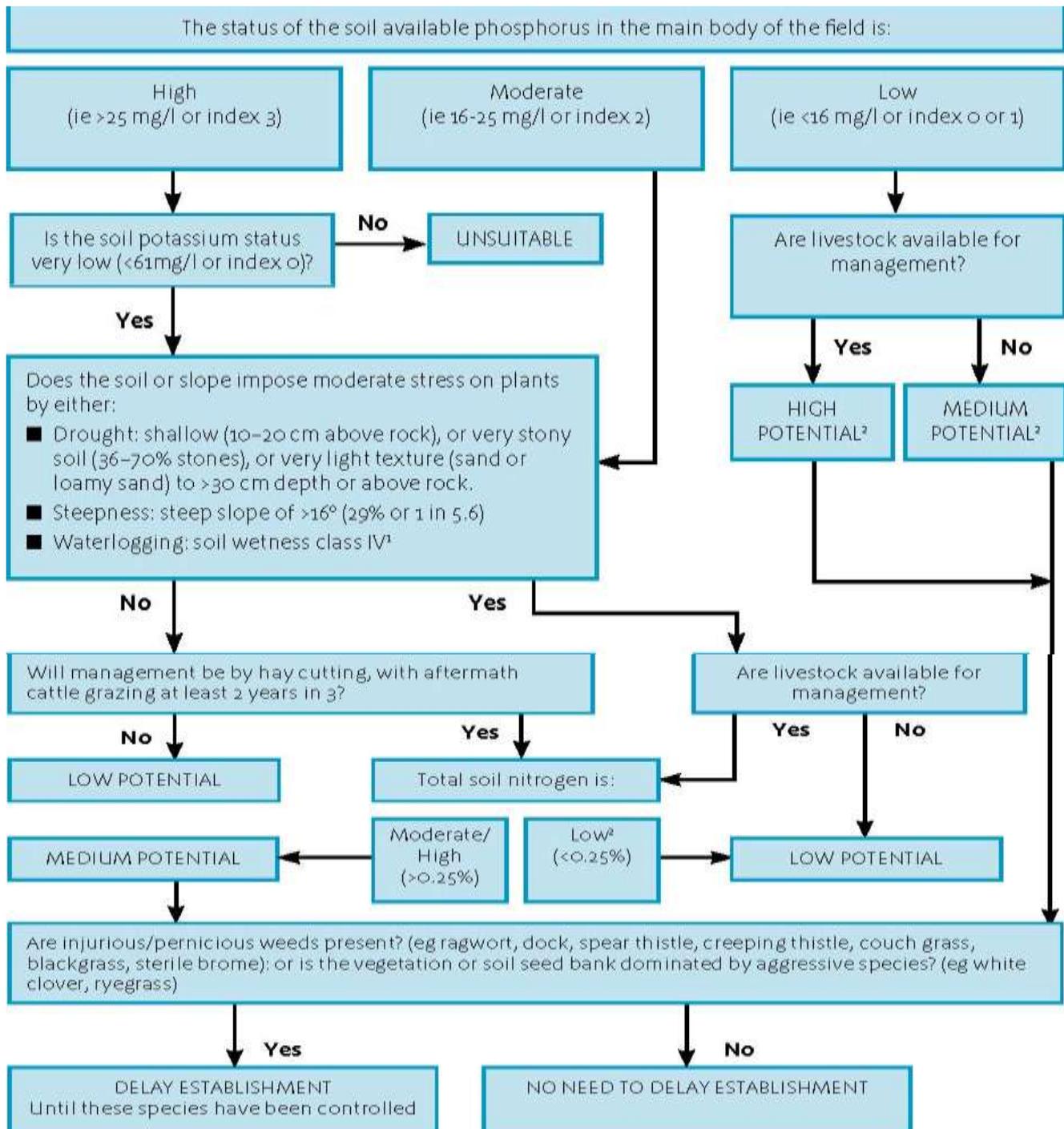
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Arable reversion to species-rich grassland: site selection and choice of methods

Key to the potential of arable land for reversion to species rich grassland taken from *Farm Environment Plan (FEP) Manual* Third Edition February 2010



¹ Soils with wetness class IV are waterlogged for long periods in winter.

² Soils low in total soil nitrogen (<0.25%) are likely to give a very unproductive sward and the land manager should be warned of this.