RWE

Tween Bridge Solar Farm

5.8 Grid Connection Statement

Planning Act 2008
Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009

APFP Regulation 6(1)(a)

Document Reference: 5.8

October 2026

Revision 4

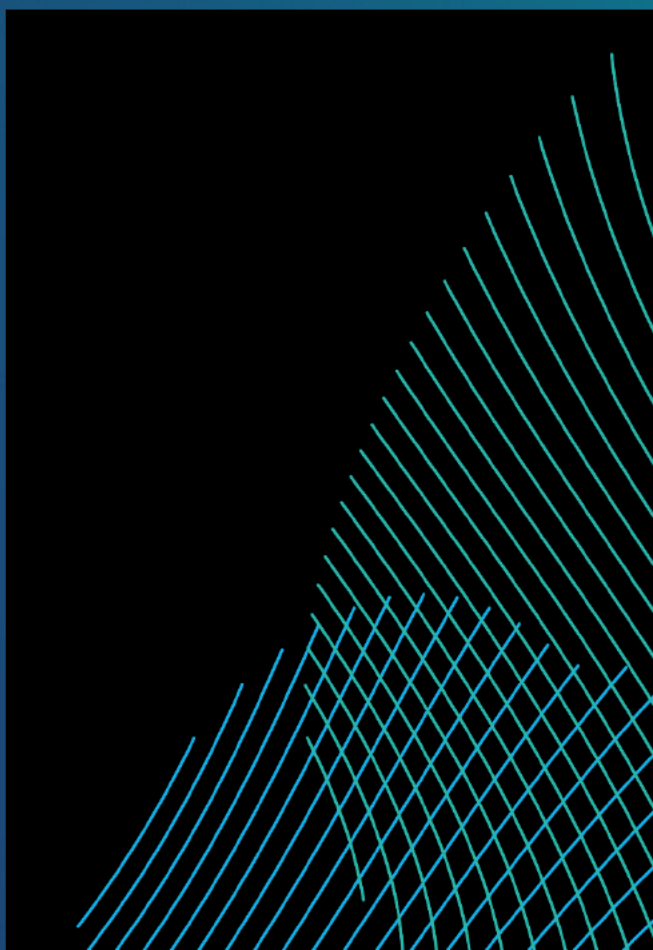


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1 Introduction

1.1. Purpose of this document

1.1.1. This Grid Connection Statement has been prepared on behalf of by RWE Renewables UK Solar and Storage Ltd (the Applicant) in support of an application for a Development Consent Order (DCO) (the DCO Application) made to the Secretary of State for the Department for Energy Security and Net Zero (SoS), pursuant to section 37 of the Planning Act 2008 (PA 2008) **[Ref. 1]**.

1.1.2. The DCO Application is for a Nationally Significant Infrastructure Project (NSIP) which would provide consent for the Applicant to construct, operate (including maintain) and decommission the Tween Bridge Solar Farm, comprising a solar photovoltaic (PV) array electricity generating facility, Battery Energy Storage System (BESS) and associated infrastructure (the Scheme) which would allow for the generation of up to 800MW of electricity. The **Order Limits [APP-129]** shows the boundary (the Order Limits) for the Scheme, which encompasses approximately 1,831 hectares of land located within the administrative areas of both Doncaster Council (DC) and North Lincolnshire Council (NLC).

1.1.3. Further details on the Scheme are contained in **Environmental Statement (ES) Chapter 2: Scheme Description [APP-039].**

1.1.4. The Scheme is defined under Sections 14(1)(a), 15(1) and 15(2) of the PA 2008 **[Ref. 1]** as a NSIP as it comprises an onshore generating station in England with a capacity exceeding 50 megawatts (MW). It therefore requires a DCO from the SoS. This document has been prepared and should be read in conjunction with the other documents submitted with the DCO Application.

1.1.5. This Grid Connection Statement is submitted pursuant to Section 55 of the PA 2008 **[Ref.1]** and Regulations 5 and 6 of the Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 (as amended) (the APFP Regulations) **[Ref. 2]**. In particular, Regulation 6(1)(a)(i) of the APFP Regulations requires an applicant for a DCO in respect of onshore generating stations to provide a statement of who will be responsible for designing and constructing the connection to the electricity grid.

1.1.6. This statement confirms that a connection to a new 400 kilovolt (kV) substation or existing 400 kV substation (hereafter referred to as the 'NGET 400kV Substation') will be provided via a 400kV export connection cable from a RWE on-site 400kV substation. If new, the NGET 400kV Substation is to be consented and delivered separately by National Grid Electricity Transmission (NGET). The RWE on-site 400kV substation forms part of the Scheme and therefore will be consented and delivered by the Applicant under the DCO.

1.1.7. As the location of the NGET 400kV Substation is not yet confirmed, it is not possible for the route of the 400kV export connection cable to the NGET 400kV Substation to be defined at this stage. Therefore the 400kV export connection cable to the NGET 400kV Substation is not included in the DCO. The DCO does include powers for the provision of cables from the RWE on-site 400kV substation to the Order Limits (as part of Work No. 2 of the DCO), in order to facilitate a connection to the 400kV export connection cable to the NGET 400kV Substation once the location is confirmed by NGET. The 400kV connection cable from the Order Limits to the NGET 400kV Substation will be progressed via a separate consenting process, as detailed further in paragraph 3.4.19 of the **Planning Statement [Document Reference 5.5 Revision 3].**

2 Grid Connection Agreement

2.1.1. The Scheme will supply electricity to the National Electricity Transmission System (NETS). National Electricity System Operator Limited (NESO) is the system operator for the complete NETS and NGET is the Transmission Owner for England and Wales pursuant to a transmission license issued under the Electricity Act 1989.

2.1.2. The Applicant received a grid connection offer from NESO on 13 December 2021, offering connection to a new NGET 400kV Substation with an export capacity of 340MW. That offer was accepted by the Applicant on 27 July 2022. Two subsequent grid connection offers to vary the agreement were received by the Applicant on 27 January 2022 for an additional 250MW and 26 September 2024 for an additional 210MW and were accepted by the Applicant on 26 April 2023 and 25 November 2024, respectively. Together, the grid connection offers and agreement are referred to as the 'Grid Connection Agreement'. The first variation increased the export capacity to 590MW and the second variation increased the export capacity to 800MW.

2.1.3. At the point of submission of the DCO Application, the connection date for the Scheme was June 2029. However as with all electricity generation projects, this date is under review by NESO as part of the ongoing connections reform process and in December 2025, the Applicant received confirmation from NESO that the Scheme had received 'Gate 2 Phase 2' status. 'Gate 2 Phase 2' status means that the Scheme should expect to receive confirmation of a connection date between 2030 and 2035 at the conclusion of NESO's process, which for transmission-connected projects, such as the Scheme, is currently expected to be by January 2027 at the latest.

2.1.4. In summary, the Applicant confirms that the output of the Scheme will be exported to the NETS via a new or existing NGET 400kV Substation, which will have capacity for the electricity generated by the Scheme.

3 The Grid Connection

3.1. Overview

3.1.1. Electricity generated by the Scheme will be exported to the NETS via a new or existing NGET 400kV Substation. If a new NGET 400kV Substation were to be delivered, the 400kV Substation would be delivered by NGET.

3.1.2. NGET has commenced its process for confirming how it intends to connect the Scheme into the NETS. The exact location of the point of connection will not be confirmed until this process is concluded.

3.1.3. If a new 400kV substation is required, the final location of any such substation will be dependent on many factors such as technical, design and environmental factors, as well as other factors outside the control of the Applicant. This includes the requirements of NGET, the owners of the national distribution network infrastructure, and their further appraisal and connection considerations.

3.1.4. If a new 400kV substation is required, NGET would progress a separate consenting process for the NGET 400kV substation and would own and operate the NGET 400kV substation following construction. The Applicant notes that any new NGET 400kV substation is unlikely to be required for the Scheme in isolation - it would most likely also facilitate the connection of other projects coming forward on the same network.

3.1.5. A 400kV export connection cable will be required to connect the Scheme to the NGET 400kV substation. As the location of the NGET 400kV substation is not yet confirmed, it is not possible at this stage to identify the potential route options the 400kV export connection cable would take from the RWE on-site 400kV substation to the NGET 400kV substation. Whilst the Applicant continues to engage with NGET, there is therefore currently no meaningful information for the Applicant to assess this export cable connection within the Environmental Impact Assessment for the Scheme. This approach is consistent with the requirements of the EIA Regulations (see, for example, R (Khan v. London Borough of Sutton ([2014] EWHC 3663 (Admin)). However, this application does seek development consent for the provision of cables as part of Work No. 2 of the DCO, to enable a cable connection between the RWE 400kV substation and the boundary of the Order Limits. As information is available on these routes, the provision of these cables within the Order Limits has been assessed within the EIA submitted with the DCO Application.

3.1.6. The 400kV export connection cable would be progressed via a separate consenting process, except for the potential provision of cables between the RWE on-site 400kV substation to the Order Limits which could be authorised under Work No. 2 of the Scheme. The most appropriate consenting route will be determined at the appropriate stage once NGET have defined the location of the NGET 400kV substation and potential cable route options thereto can in turn be established. While as the transmission licence holder NGET may consent, design, build and operate 400kV cables at the transmission level, the Applicant expects to be responsible for consenting, designing, building and operating the 400kV export connection cable in due course. There are several consenting options available to the Applicant. They include:

- Utilising on-road cable routes for the section of the 400kV export connection cable beyond the Order Limits, which would be possible under the Applicant's permitted development rights;
- A subsequent planning application under the Town and Country Planning Act 1990 to the relevant local planning authority;
- A subsequent application to the Secretary of State for a change to the made DCO to consent the section of the 400kV export connection cable beyond the Order Limits; or

- Submitting a request to the Secretary of State for the 400kV export connection cable to be treated as a project of national significance in its own right, under Section 35 of the Planning Act 2008, in turn allowing a standalone DCO to be sought for the 400kV export connection cable.

3.1.7. Progressing a consent application for a grid connection separately from the generating station element of a project is not uncommon. In the Applicant's experience, solar development consented under the Town and Country Planning Act 1990 can follow this approach though there are clear examples of DCO projects following this route too (see, for example, Triton Knoll Offshore Wind Farm, Brechfa Forest West Wind Farm and Hinkley Point C Nuclear Power Station DCO applications). This approach is recognised and provided for within Section 4.11 of the Overarching National Policy Statement for Energy (EN-1), as explained further in the **Planning Statement [Document Reference 5.5 Revision 3].** The Applicant has also proposed a Requirement in Schedule 2 to the draft Development Consent Order (Requirement 21) which requires that the consent or authorisation is obtained in connection with the grid connection.

3.1.8. The key elements forming part of the Scheme which are necessary to connect it to the NETS are listed below and are be identified on the **Works Plans [REP4-002]**:

- Work No.1 – Panel Areas;
- Work No.2 – Electrical Cabling:
- Work No.4 – On-site 132kV and 400kV Substations;
- Work No.5 – Battery Energy Storage System (BESS).

3.1.9. These works are included in Schedule 1 of the **Draft DCO [Document Reference 3.1 Revision 10]** and are described in detail within **ES Chapter 2: Scheme Description [APP-039].**

3.1.10. In summary, the Applicant will be responsible for designing and building as part of the Scheme each element of the electrical connection up to the RWE on-site 400kV Substation (part of Work No.4).

3.1.11. The Applicant understands that NGET could be responsible for designing and building the 400kV export connection cable as the transmission licence holder.

However, in this instance the Applicant expects to design and build the 400kV export connection cable. As explained paragraphs 3.1.5 and 3.1.6, Work No. 2 of the DCO provides for cables within the Order Limits to enable a cable connection between the RWE 400kV substation and the boundary of the Order Limits. The Applicant would then employ one of the consenting options available to it in relation to the 400kV export connection cable to the NGET 400kV Substation, as outlined in detail in paragraph 3.1.6.

3.1.12. To enable the connection between the Scheme and the NGET 400kV Substation, a new 400kV circuit breaker and associated switchgear equipment will be installed at the NGET 400kV Substation by NGET. Under the terms of the Applicant's Grid Connection Agreement, NGET will also be responsible for designing and building the switchgear and auxiliary equipment. NGET would seek consent for these works as part of the separate consent application for the NGET 400kV Substation or via its permitted development rights if applicable for an existing NGET 400kV Substation.

3.1.13. The Applicant will continue to work together with NGET in respect of the NGET 400kV Substation, and the progression of the consent application for the 400kV export connection cable with the relevant consenting body once the location of the NGET 400kV Substation has been confirmed and it is possible to define the route of the cable from the RWE 400kV Substation thereto.

Work No.1 – Panel Areas

3.1.14. The solar panels will generate electrical power by using a solar PV module to convert sun light into direct current (DC) electricity. Work No. 1 will therefore comprise the solar PV modules and solar stations. Work No. 1 (comprising Work Nos. 1A to 1E) will be spread across the Panel Areas A to E.

Work No.2 – Electrical Cabling

3.1.15. Work No. 2 will comprise the underground electrical cables to connect the Panel Areas (Work No. 1) and the BESS (Work No. 5) to the on-site 132kV Substations (Work No. 4) and then onto the RWE on-site 400kV Substation (Work No. 4). Work No. 2 also makes provision for cables from the RWE on-site 400kV Substation to the boundary of the Order Limits to facilitate a connection with the remainder of

the 400kV export connection cable to the NGET 400kV substation (once the location is confirmed by NGET).

Work No.4 – On-site Substations

3.1.16. Seven on-site 132kV Substations and one RWE on-site 400kV Substation will be required to connect the Panel Areas to the NETS by converting low voltages from electricity generation to high voltages, or vice versa, using power transformers. Work No.4 will therefore comprise Work Nos. 4A to 4G, being the seven on-site 132kV Substations, and Work No. 4H, being the on-site 400kV Substation, and various associated works.

Work No.5 – Battery Energy Storage System

3.1.17. The BESS is likely to consist of lithium-ion batteries and will allow energy to be stored on-site to ensure that there is an equal distribution of electricity across the NETS, providing a balance in services where surplus electricity is produced.

3.1.18. Work No. 5 will therefore comprise the four BESS compounds (Work Nos. 5A to 5D) and associated infrastructure, such as transformers, converters and ancillary equipment. Work No. 2 comprises underground cabling to connect the Panel Areas A to E and the four BESS compounds to the on-site substations.

4 Acquisition of Land Rights

4.1. Panel Areas, On-site Substations and BESS (Work No.1, Work No.2, Work No. 4, Work No.5)

4.1.1. The Applicant has successfully negotiated voluntary option agreements for leasehold interests to allow for the construction, operation and decommissioning of the Scheme within all Panel Areas.

4.2. NGET 400kV Substation

4.2.1. If a new NGET 400kV Substation is required, it will be consented separately, and owned by, NGET as the freeholder. This will include the works required to facilitate the connection of the Scheme within the NGET 400kV Substation site.

4.3. 400kV Export Connection Cable

4.3.1. As explained in Section 3, Work No. 2 includes provision for a 400kV cable between the RWE on-site 400kV Substation and the boundary of the Order Limits. As confirmed in Section 4.1, the Applicant has successfully negotiated voluntary option agreements for leasehold interests to allow for the construction, operation and decommissioning of the Scheme within all Panel Areas. These agreements includes provision for all Scheme infrastructure, including cabling. Therefore the Applicant has secured the necessary land, rights and interests to facilitate the construction and operation of 400kV cabling within the Order Limits.

4.3.2. As set out in paragraphs 3.1.4 and 3.1.5, the consent for the 400kV export connection cable that will be sought separately from the DCO Application, with the exception that the Scheme provides for cables within the Order Limits to enable a cable connection between the RWE 400kV substation and the boundary of the Order Limits. The route of the 400kV export connection cable has not been defined at this stage, as NGET are yet to confirm the location of the NGET 400kV Substation.

4.3.3. As the location of the NGET 400kV Substation has not been confirmed, it is not currently possible for voluntary agreements to be progressed for this element. The Applicant is experienced in securing such agreements voluntarily and employs this approach across its portfolio of projects authorised under the Town and Country Planning Act 1990 regime (or where applicable the Planning Act 2008 regime). In addition, if the 400kV export connection cable that will be required between the Order Limits and the NGET 400kV Substation were not to be consented by the Applicant through a separate DCO application (as referenced above) which could also be used to confer compulsory acquisition powers, the Applicant also holds a generation licence under the Electricity Act 1989 (the 1989 Act). The generation licence confers the Applicant with the powers and rights under the provisions of Schedule 3 to the 1989 Act (Compulsory Acquisition of Land etc. by Licence Holders), to compulsorily acquire land to enable the Applicant to carry on the activities authorised by this licence and which relate to amongst other things –

> *"….the installation, inspection, maintenance, adjustment, repair, alteration, replacement or removal of electric lines, and electrical plant associated with them, and any structures for housing or coverings such lines or plant, connecting a generating station with:*
>
> *(i) the national electricity transmission system; or*
>
> *(ii) a distribution system–"*

4.3.4. The references to a "generation station" are -

> *"….to an electricity generating station which:*
>
> *(ii) has, or will have when its construction or extension is completed, a capacity of not less than 50 megawatts or such other capacity as 37 may be specified in relation thereto by order of the Secretary of State under section 36(3) of the Act;*
>
> *(iii) is, or will be when its extension or construction is completed, operated by or for the licensee.*"

4.3.5. Therefore, while the Applicant's preference will be to secure the land rights necessary to deliver the 400kV export connection cable from the Order Limits to the NGET 400kV Substation by voluntary agreement, if required the Applicant could promote a separate Compulsory Purchase Order to secure the necessary land rights.

5 Delivery of Works

Panel Areas (Work No. 1) and Battery Energy Storage System (Work No. 5)

5.1.1. The Applicant and its appointed contractors will be responsible for designing and constructing the Panel Areas (Work No. 1) and the BESS (Work No. 5) and the associated works.

Electrical Cabling (Work No. 2)

5.1.2. The Applicant and its appointed contractors will be responsible for designing and constructing the underground 33kV cabling to connect the Panel Areas (Work No. 1) and the BESS (Work No. 5) to the on-site substations (Work No. 4) together with the associated works.

5.1.3. Under the terms of the Grid Connection Agreement, the Applicant will be responsible for designing and constructing the underground 132kV electrical cables connecting the seven on-site substations (Work No. 4) to the RWE on-site 400kV substation (Work No. 4).

On-site Substations (Work No. 4)

5.1.4. Under the terms of the Grid Connection Agreement, the Applicant will be responsible for designing and constructing the seven on-site 132kV substations and the on-site 400kV substation that form part of the Scheme (Work No. 4).

Underground Cabling (Work No. 2) connecting the RWE on-site 400kV Substation (Work No.4H) to the NGET 400kV Substation

5.1.5. The Applicant expects to be responsible for designing and constructing the 400kV export connection cable between the RWE on-site 400kV Substation (Work No. 4H) and the NGET 400kV Substation (not part of the Scheme). The 400kV cable connection to the NGET 400kV substation will be consented separately (once the location of the NGET 400kV substation is confirmed by NGET). However the DCO includes powers for the provision of cables from the RWE on-site 400kV substation to the Order Limits as part of Work No. 2, in order to facilitate a connection with the 400kV export connection cable from the boundary of the Order Limits to the NGET 400kV Substation.

NGET 400kV Substation and works to facilitate connection into the NGET 400kV Substation

5.1.6. Under the terms of the Grid Connection Agreement, if a new NGET 400kV Substation is required, NGET will be responsible for its design and construction. Similarly any works within the boundary of an existing NGET 400kV substation to facilitate the connection of the Scheme would be NGET's responsibility. Any new NGET 400kV Substation or works beyond NGET's permitted development rights at an existing NGET 400kV Substation will be consented separately by NGET.

6 Conclusion

6.1.1. The Applicant is required to submit a statement pursuant to Regulation 6(1)(a)(i) of the APFP Regulations **[Ref. 2],** stating who will be responsible for designing and building the connection to the electricity grid.

6.1.2. This Grid Connection Statement provides confirmation to the SoS of the requirement above, namely:

- The Applicant has received a grid connection offer and two subsequent grid offer amendments from NESO to connect the Scheme to the NETS via an NGET 400kV Substation and these offers have been accepted. The NGET 400kV Substation could comprise a new substation, or a connection could be provided at an existing substation.

- A connection to the NGET 400kV Substation will be provided via a 400kV export connection cable from the RWE on-site 400kV substation. As the location of the NGET 400kV Substation has not yet been confirmed by NGET, the 400kV export connection cable to the NGET 400kV Substation does not form part of the Scheme and will be consented separately. However the DCO includes powers for the provision of cables from the RWE on-site 400kV substation to the Order Limits, to facilitate a connection with the 400kV export connection cable outside of the Order Limits to the NGET 400kV Substation (once the location of the NGET 400kV Substation and cable connection is confirmed).

- The Applicant has secured voluntary option agreements for leasehold interests to allow for the construction, operation and decommissioning of the panel areas, BESS, on-site substations and cabling within the Order Limits.

- NGET will be the freeholder owner of the NGET 400kV Substation (whether new or existing) and will secure all necessary rights to carry out the relevant works.

- Landowner negotiations to secure the necessary land rights and interests for the 400kV export connection cable beyond the Order Limits by voluntary agreement will commence once the location of the NGET 400kV Substation has been confirmed by NGET and it has been possible to define a route thereto. In the event these negotiations are unsuccessful, the Applicant is able to promote a separate Compulsory Purchase Order under the terms of its Generation Licence, unless such compulsory acquisition powers are sought by the Applicant as part of a separate DCO consent application.

- The Applicant will be responsible for delivering the panel areas, BESS and underground 33kV and 132kV cabling to connect these components to the on-site substations.

- Under the terms of the Grid Connection Agreement, the Applicant will be responsible for delivering the seven on-site 132 kV substations and the RWE on-site 400kV substation. The consenting, design, construction and operation of the 400kV export connection required to connect the RWE on-site 400kV substation to the NGET 400kV Substation is also expected to be the responsibility of the Applicant.

- Electrical works within NGET 400kV Substation will be delivered by the NGET.

7 References

Ref. 1: Planning Act 2008. Available online: https://www.legislation.gov.uk/ukpga/2008/29/section/14

Ref. 2: The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009. Available online: https://www.legislation.gov.uk/uksi/2009/2264/contents/made