



Little Crow

Solar Park

Little Crow Solar Park, Scunthorpe

GRID CONNECTION STATEMENT

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1. INTRODUCTION

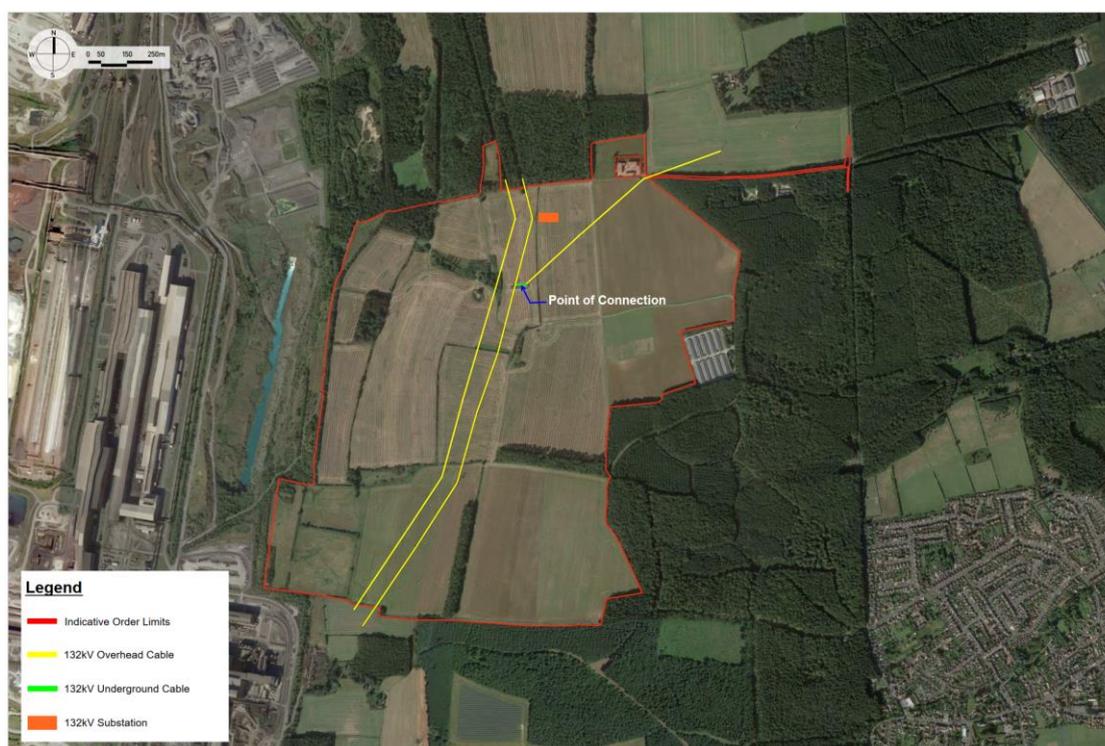
- 1.1 This Grid Connection Statement sets out the design and construction principles to be applied during the build out of the electrical grid connection at Little Crow Solar Park, Scunthorpe DN20 0BG. This document has been prepared by SMS Energy Services Ltd on behalf of INRG Solar (Little Crow) Ltd ('INRG').

2. Purpose of Document

- 2.1 This document details the grid connection process.

3. Description of Works

- 3.1 The main element of the project is the construction, operation, maintenance and decommissioning of a ground mounted solar park and associated battery energy storage system with an intended design capacity of over 50MWp (megawatts peak). The project is connected to the electricity network via a single main connection at 132kV to the Northern Powergrid ('NPG') electricity network located within the Order Limits. The location of the Point of Connection ('PoC') to the NPG electricity network is shown on Plan 1 below.



Plan 1

- 3.2 The connection has been designed to sit fully within the development, with the PoC located in the northern half of the site and connected to the 132kV substation via an underground section of 132kV cable c250m in length.

The connection design and procurement has been carried out using the OFGEM regulated "Competition in Connections" process which allows the benefit of the design and construction of the connection into the electricity network to be made independent of the Distribution Network Operator, NPG in this case.

4. Competition in Connections

During the mid-1990's the government of the day, deregulated the electricity distribution business to break the monopoly of the old "Electricity Boards" throughout the country. The duty of managing this de-regulation fell to OFGEM.

The old Electricity Boards were privatised and after a number of name changes are now called Distribution Network Operators or DNO's. Their duties have remained the same in that the DNOs own, operate and manage the core electricity distribution network within a geographical area. Their income revenue is accomplished via charges levied via the flow of electricity through network to the end customer.

Competition in Connections (CIC) was set in place, which allowed private, accredited contractors to bid for some elements of the connection process namely the "contestable" elements. There are some elements of the works, namely "non-contestable", generally those parts of the connection infrastructure that connect to the live DNO equipment at the PoC.

As an alternative to DNO adoption, there is a second avenue that can be explored in that the connection can be adopted by an Independent Network Operator or IDNO. IDNO's are of a similar nature to DNO's in that they make revenue via the flow of electricity, however they have no geographical boundary other than the development there are operating within. They take their main connection via the host DNO for that area. These are sometimes referred to as an "embedded network".

5. Competition in Connections Process

- 5.1 The CIC process begins in the usual way by an application to the DNO. Dependant on the size and complexity of connection, the DNO have a statutory time limit to respond. Very often on complex and expensive arrangements such as this connection, both the DNO and client engineering teams assess the design to ensure that the connection is both budgetary and technically in line with client expectation.
- 5.2 Unless just a PoC application is requested the DNO will generally provide an “all-works quotation” with a second section for the CIC connection route if the customer so chooses. This gives the customer the opportunity to decide whether to use the DNO to complete all the works or to only complete the “non-contestable” works.
- 5.3 If the customer accepts the “non-contestable” works option the DNO will inform the customer of the geographical location of the PoC along with the engineering parameters necessary for the connection to be made according to their own design rules and standards.
- 5.4 Having accepted the “non-contestable” quotation, the client will engage an Independent Connection Provider (‘ICP’) to design and build the connection. The ICP is accredited under the National Electricity Registration Scheme (‘NERS’) for the works. The NERS system is run by Lloyds Registry on behalf of Ofgem which maintains quality and standards as required.
- 5.5 Once planning consent has been secured a detailed design submission to ensure that the project is connected safely to the electricity network is then carried out by the ICP which is then formally approved by the DNO. Once the electrical design is approved this allows the construction of the grid connection works to commence.
- 5.6 Following approval of the detailed design submission any legal wayleaves and easements works begin and construction can start on those elements of works not requiring legal clearance. At all times, as part of the overall quotation, the DNO audits the various aspects of the construction process.
- 5.7 At completion of the ICP works a final audit is undertaken by the DNO and with that at a satisfactory conclusion the DNO will close out the connection onto their network and NPG in this case will formally adopt the equipment following completion of an Adoption Agreement.

6. Connections Process for Little Crow Solar Park

6.1 The connections process for Little Crow Solar Park is at an advanced stage. INRG has accepted the “non-contestable” works option with final adoption by NPG.

- The PoC is within the Order Limits so that there are no external influences or traffic disruption in getting the connection to site.
- The ICP is at Tender Stage – progression to appoint being dependant on securing Development Consent.
- The substation compound and buildings have been designed in accordance with NPGs requirements and form part of the Application Submission.
 - 1) On award of Development Consent:
 - a) ICP selection can move forward to contract award stage.
 - b) On contract award the ICP will firm up the detailed design submission to ensure that the latest specifications are met, then submit to NPG for design approval.
 - c) Subsequent design approval from NPG sets off:
 - I. The legal negotiations of wayleaves and easements between NPG and the relevant landowners.
 - II. The ordering of long lead time equipment for the connection.
 - III. The construction process itself.
 - d) NPG/ICP/INRG will hold regular audit and project meetings to ensure both progress and compliance.
- On completion of the works the new NPG substation constructed onsite can be connected to the electricity network and adopted by NPG following the completion of an Adoption Agreement. Subsequent energisation of the new PV Solar Farm / Battery Storage development can then take place.

6.2 Detailed design submission approval relies heavily on the design input of the following documents and other associated NPG internal design documents:

- NPS/002/023 – Technical Specification for 132kV Power Cables.
- NSP/007/019 – Guidance on Substation, Design: EHV Substation Drawing Policy
- NSP/007/028 – Guidance on Substation Design: Drawing Submission Requirement:

6.3 The detailed design submission is based around the required documentation "bound" by the NPG design submission document: "DESIGN APPROVAL FOR INDEPENDENT CONNECTON PROVIDERS APPLICATION FORM"

6.4 Other notable external standards include but not exclusive to:

- HSAWA The Health and Safety at Work Act 1974
- The Grid Code sets out the operating procedures and principles governing the relationship between NGET and all Users of the National Electricity Transmission System be they Generators, DC Converter owners, Suppliers or Non-Embedded Customers. Issue 5, Revision 38, September 2019
- IEC 60287 Electric cables - Calculation of the current rating 2015
- SI 2002 No. 2665 The Electricity Safety, Quality and Continuity (ESQC) Regulations 31 January 2003
- SI 2006 No. 1521 The ESQC (Amendment) Regulations 2006 1 October 2006

8. Appendix 2 – Development and Substation Compound Location

