APPLICATION FORM FOR AN OFFER OF TERMS TO CONNECT GENERATION EQUIPMENT TO THE ALL-ISLAND TRANSMISSION NETWORKS IN RESPECT TO GENERATOR EQUIPMENT IN NORTHERN IRELAND

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1 Introduction

System Operator for Northern Ireland Limited ("SONI") is the **Transmission System Operator** for Northern Ireland. It is authorised to participate in the transmission of electricity by means of a Transmission Licence issued by The Department of Enterprise, Trade and Investment (the "Department"), under Article 10(1)(b) of the Electricity (Northern Ireland) Order 1992 (the "**Order**"). It is regulated by the Utility Regulator for Northern Ireland (the "**Authority**").

Under its Transmission Licence SONI is responsible for the planning and operation the **Transmission System** in Northern Ireland in a safe, secure, efficient manner.

SONI is the only party in Northern Ireland entitled to offer terms to connect, or to modify an existing connection, to the **Transmission System** in line with Condition 25 of its Licence. Such terms are offered following receipt by SONI of an application containing all such information as SONI may reasonably require to prepare the terms of the offer.

This application form sets out the information which must be submitted to SONI in order for SONI to prepare and issue an offer to connect *generation equipment* to the **Transmission System**.

SONI shall offer terms as soon as practicable and, except where the **Authority** consents to a longer period, not more than 3 months after receipt by SONI of a fully completed application containing all the information that SONI deems is required, including the relevant Application Fee.

SONI shall not be obliged to offer to enter or to enter into any **Connection Agreement**:

(a) if to do so would involve SONI:

  i. in breach of its duties under Article 12 of the **Order**; or

  ii. in breach of any regulations made under Article 32 of the **Order** or of any other enactment relating to safety or standards applicable in respect of the **Transmission System**; or

  iii. in breach of the conditions of its Transmission Licence;

  iv. in breach of the **Grid Code**; or

(b) if the person making the application does not undertake to be bound by such parts of the **Grid Code** and to such extent as the **Authority** shall from time to time specify in directions issued to SONI for the purposes of Condition 25 of the Licence; or

(c) if, when requested to do so by SONI, NIE and/or the Republic of Ireland System Operator does not offer to enter into an agreement for connection and/or modification works in respect of the **Connection Agreement** or Transmission Use of System Agreement in question.

All persons who own generating equipment connected to the **Transmission System** and all persons who are applying to have generation equipment connected to the **Transmission System**

must comply with the **Grid Code**. Data submitted pursuant to this application are deemed to be submitted under the **Grid Code**.

Copies of the **Grid Code** are available to download at www.soni.ltd.uk.

The Planning Code within the **Grid Code** defines two sets of data which must be submitted to SONI:

Standard Planning Data

Standard Planning Data must be provided to SONI when requesting an offer to connect or requesting an offer to modify an existing connection to the **Transmission System**. This set of data is set out in this application form.

Detailed Planning Data

Detailed Planning Data must be submitted to SONI within 28 days of accepting a connection offer from SONI. A pro forma setting out Detailed Planning Data will be supplied by SONI on request. It can also be found in the **Grid Code** as part of the Data Registration Code (DRC).

SONI recommends that all potential connection applicants carefully review the **Grid Code** and satisfy themselves that they can meet all the requirements relevant to their type of **Generator**.

SONI shall ensure that any new network additions or modifications do not result in unacceptable or unstable conditions on the **Transmission System**. This will be done by undertaking a number of system studies replicating the **Generator**'s proposed development and the effect it may have on the **Transmission System**.

SONI has prepared a Transmission Connection Charging Methodology Statement in line with Condition 30 of its Licence which sets out the basis upon which charges will be made for connection to the **Transmission System**. A copy of the statement can be downloaded at from the SONI website (www.soni.ltd.uk). This Transmission Connection Charging Methodology Statement provides details of the relevant connection application fees which must accompany a connection application form.

Completed Application Forms should be sent to:

Generator Connection Applications
SONI Ltd
Castlereagh House
12 Manse Road
Belfast
BT6 9RT

If any additional information is required or if assistance is need in completing this form please contact:

connections@soni.ltd.uk

2 Generator Connection Application

1. We hereby apply for an offer of terms for connection to the **All-island Transmission Networks** in respect of:

(insert name of generating station or project)

2. We undertake for the purposes of this application to be bound by the terms of the **Grid Code**.

3. We authorise the release of information provided pursuant to this application to NIE should SONI consider it necessary and/or to progress any associated Construction Application.

Signed by: (For and on behalf of the Applicant)	
Date:	

Table 1 - Applicant's Details

Where the application is being submitted on behalf of a company please complete Part A only. Otherwise, please complete Part B.

Part A

Company Name:	
Company Registered Address:	
Company Registration No:	
Contact within company:	
Address: (if different to above)	
Tel No:	
Email address:	
Fax No:	

Part B

Name of Applicant:	
Address:	
Tel No:	
Email address:	
Fax No:	

Table 2 - Prerequisites

Has the applicant obtained planning permission for the facility from the NI Planning Service?	Yes / No *
SONI requires a copy of the Planning Permission. Has it been submitted with this application?	Yes / No *
Does the applicant wish to pay a fixed price application fee or an outturn cost application fee?	Fixed Price / Outturn Cost
A connection application fee is required. Has the relevant application fee been submitted with this application?	Yes / No *

* delete as appropriate

Table 3 - General details of the generation facility

Project name	
Address/Location of site	
Grid co-ordinates of the electrical **Connection Point**	
Site location plan enclosed?	Yes / No * (Please provide a 1:50,000 Ordnance Survey map with the location of the facility clearly marked. The electrical **Connection Point** must be clearly marked with an "X". If it is intended that Generating Units will be spread geographically over a number of different sites, please also indicate each site on this site location plan, by labelling each site).
Planned date for commencing generation:	
Has a Connection / Feasibility Study for this facility been carried out?	Yes / No *
If so, date of study:	

* delete as appropriate

Table 4 - Standard Planning Data (User System details)

Has a Single Line Diagram (SLD) enclosed? (Please provide a SLD of existing and proposed arrangements of main connections and primary distribution systems showing equipment ratings and if available number and nomenclature). This should include:- • Busbar layouts • Electrical circuitry (i.e. lines, cables, transformers, switchgear etc) • Phasing arrangements • Earthing arrangements • Switching facilities and interlocking arrangements • Operating voltages • Numbering and nomenclature	Yes / No *	
In the case of **Controllable WFPS**s or **Dispatchable WFPS**s, a diagram that shows wind speed and direction against electrical output in MW, in "rose" format. Has this information been submitted with this application?	Yes / No *	
Total number of generating units:		
Total **Registered Capacity**:		MW
Maximum Export Capacity:		MW
Minimum Generation (if applicable):		MW
Maximum auxiliary demand Active: Reactive:		 MW MVAr
Operating regime of units not subject to **Central Dispatch** (e.g. continuous, peak lopping, intermittent) :		
Maximum 3-phase short circuit current infeed into the **Transmission System**:		kA
The minimum zero sequence impedance of the applicant's system at the point of connection with the **Transmission System**:		% on 100
Details of any Transformers proposed to be connected on customer side of the **Connection Point** (if applicable) Rating: Positive sequence reactance: Tap change range:		 MVA % on MVA +% to -%

* delete as appropriate

Tables 5A & 5B - Standard Planning Data (Generating Units details)

Where a number of non-wind Generating Units are proposed to be connected, the standard Planning data shall be submitted for each type of Generating Unit. Please complete Table 5A below.

Where a number of wind Generating Units are proposed to be connected, the standard Planning data shall be submitted for each type of Generating Unit. Please complete Table 5B below.

If it is intended that Generating Units will be spread geographically over a number of separate sites, please also indicate this in the tables below, by stating the site or sites that each Generating Unit Type will be part of – this should align with the Site Location Plan submitted as part of this application.

(Please continue on separate sheet if necessary).

Tables 5A - Standard Planning Data (*Non-wind Generating Units* details)

	Generating Unit Type 1	Generating Unit Type 2 (if applicable)	Generating Unit Type 3 (if applicable)
Proposed for site(s) if applicable:			
Prime mover type:			
Generating Unit type e.g. synchronous, induction etc:			
Generating Unit Rating:	**MW**	**MW**	**MW**
Generating Unit Terminal voltage:	**kV**	**kV**	**kV**
Generating Unit Power Factor range at terminals:			
Registered Capacity:	**MW**	**MW**	**MW**
Minimum Generation: (where applicable)	**MW**	**MW**	**MW**
Generating Unit Power Factor rated power factor:			
Maximum auxiliary demand			
Active:	**MW**	**MW**	**MW**
Reactive:	**MVAr**	**MVAr**	**MVAr**
A Sustained Load diagram is required. Has this diagram been submitted along with this application?	Yes / No *	Yes / No *	Yes / No *
A CCGT Installation Matrix in respect of its CCGT Installations is required. Has this information been submitted along with this application?	Yes / No / N/A*	Yes / No / N/A*	Yes / No / N/A*

Tables 5B - Standard Planning Data (*Wind Generating Units* details)

		Wind Turbine Type 1	Wind Turbine Type 2 (if applicable)	Wind Turbine Type 3 (if applicable)
Proposed for site(s) if applicable:				
Manufacturer of Wind Turbine:				
Model of Turbine:				
Type of Turbine (e.g. DFIG):				
Number of Turbines				
Rated power output of each turbine:	**MW**			
Generating Unit Terminal voltage:	**kV**			
Generating Unit Power Factor range at terminals:				
Registered Capacity (sent out):	**MW**			
Maximum Generation (sent out):	**MW**			
Minimum Generation (sent out):	**MW**			
Reactive Power Capability	**MVAr (Lagging)**			
	MVAr (Leading)			
Reactive Power (Max. Gen)	*Please attach Wind Turbine Power Capability Curve*			
Reactive Power (Normal Full Load)				
Reactive Power (Normal Minimum Load)				
Maximum auxiliary demand				
Active:	**MW**			
Reactive:	**MVAr**			
Inertia constant:	**MWs/MVA**			
Short circuit ratio:				
Direct axis transient reactance:	**% on MVA**			
Direct axis sub-transient time constant:	**s**			
Generating transformer				
Rating:	**MVA**			
Positive sequence reactance:	**s on MVA**			
Tap change range:	**+% to -%**			

Table 6 - Standard Planning Data for Non Wind Generating Units with a Registered Capacity >5MW

Where a number of Generating Units are proposed to be connected the data required by this Table 6 shall be completed for each type of Generating Unit. (Please continue on separate sheet if necessary).

Generating Unit Type 1

Inertia constant:		MWs/MVA
Short circuit ratio:		
Direct axis transient reactance:		% on MVA
Direct axis sub-transient time constant:		s
Generating transformer Rating: Positive sequence reactance: Tap change range:		 MVA % on MVA +% to -%

Generating Unit Type 2 (if applicable)

Inertia constant:		MWs/MVA
Short circuit ratio:		
Direct axis transient reactance:		% on MVA
Direct axis sub-transient time constant:		s
Generating transformer Rating: Positive sequence reactance: Tap change range:		 MVA % on MVA +% to -%

Generating Unit Type 3 (if applicable)

Inertia constant:		MWs/MVA
Short circuit ratio:		
Direct axis transient reactance:		% on MVA
Direct axis sub-transient time constant:		s
Generating transformer Rating: Positive sequence reactance: Tap change range:		 MVA % on MVA +% to -%

Definitions

All-island Transmission Networks	Means the **Transmission System** and the Republic of Ireland transmission system taken together.
Authority	Means the Northern Ireland Authority for Utility Regulation, as established under the Energy Order;
Central Dispatch	The process of Scheduling and issuing Dispatch Instructions in relation to **CDGU**s, Pumped Storage Plant Demand, Demand Side Units, Aggregated Generating Units and/or Interconnectors direct to a Control Facility by the **TSO** pursuant to the **Grid Code**. In particular: • All **Dispatchable WFPS**s shall be subject to Central Dispatch; • All other Power Stations with a **Registered Capacity** of above 10 MW shall be subject to Central Dispatch; • All other Power Stations with a **Registered Capacity** of 10 MW or less can agree with the **TSO** to be subject to Central Dispatch.
Centrally Dispatched Generating Unit (or CDGU)	A Generating Unit within a Power Station subject to **Central Dispatch**.
Connection Agreement	An agreement between SONI and a customer setting out the terms relating to a connection to the **Transmission System**;
Connection Point	The point at which the customer's equipment connects to the **Transmission System**.
Controllable WFPS	A WFPS first connected to the NI System on or after 1 April 2005 whose wind turbines comprise a **Registered Capacity** of 5 MW or more.
Dispatchable WFPS	A **Controllable WFPS** which must have a Control Facility in order to be dispatched via an Electronic Interface by the **TSO**.
Generator	A person who generates electricity under a licence or exemption under the **Order** and who is subject to the **Grid Code** either by virtue of a licence or exemption or pursuant to any agreement with the **TSO** or otherwise.

Grid Code	The code of that name drawn up pursuant to SONI's Transmission Licence as amended from time to time in accordance with SONI's Transmission Licence;
Maximum Export Capacity (or MEC)	Means the maximum permissible amount of electricity, expressed in MW, which can be exported to the **Transmission System** as set out in the **Connection Agreement**;
Minimum Generation	The minimum MW Output which a Generating Unit can generate continuously, registered with the **TSO** under SDC1 as a Technical Parameter.
Order	means The Electricity (Northern Ireland) Order 1992;
Registered Capacity	The normal full load capacity of a generating unit measured at the **Connection Point** and in relation to a WFPS, the normal full load capacity of the collection of one or more wind turbines, each being a generating unit, measured as at the **Connection Point** of the WFPS.
Transmission Owner (or TO)	Northern Ireland Electricity plc in its capacity as the owner of the Transmission System.
Transmission System	The System consisting (wholly or mainly) of high voltage electric lines and cables operated by SONI for the purposes of transmission of electricity from one Power Station to a sub-station or to another Power Station or between sub-stations or to or from any Interconnector including any Plant and Apparatus and meters owned or operated by SONI or **TO** in connection with the transmission of electricity.
Transmission System Operator (or TSO)	The holder of the licence granted pursuant to Article 10(1)(b) of the **Order** to operate a transmission system.
Wind Farm Power Station (or WFPS)	A collection of one or more wind turbines owned and/or operated by the same **Generator** and joined together by a System with a single **Connection Point**.