Preliminary Information Memorandum

Lincs Wind Farm Offshore Transmission Assets

November 2010





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SUMMARY

In June 2009 the Department of Energy and Climate Change ("**DECC**") and the GB energy regulator, the Office of Gas and Electricity Markets ("**Ofgem**") introduced a new regulatory regime for licensing offshore electricity transmission. The regime provides an opportunity for investors to acquire offshore electricity transmission assets in Great Britain ("**GB**"). The first transitional tender round commenced in July 2009 and strong competition has attracted over £4 billion of investment appetite for nine transmission links worth around £1.1 billion. Three preferred bidders have been selected to own and operate the first £800 million worth of transmission links to eight offshore wind farms. All three firms are new entrants to the sector.

Ofgem E-Serve, which is the delivery arm of Ofgem, is now launching tenders for the second round of transitional projects. These tenders will be conducted across two tranches of tender exercises. The first tranche of tender exercises (Tranche A) will commence in mid-November 2010. The second tranche of tender exercises are expected to commence in spring 2012 (Tranche B). Projects included in Tranche A are those projects which have been confirmed as qualifying projects by Ofgem E-Serve and have satisfied the necessary tender entry conditions in accordance with the Electricity (Competitive Tenders for Offshore Transmission Licences) Regulations 2010 ("**the Tender Regulations**"). Projects in Tranche B have been deemed as qualifying projects by Ofgem and have until 31 March 2012 to meet any outstanding requirements in accordance with the Tender Regulations.

This document is a summary of information provided by the developer and outlines specifically the opportunity for investors to acquire the transmission assets and to become the licensed Offshore Transmission Owner ("**OFTO**") of the Lincs wind farm. Lincs is a qualifying project in accordance with the Tender Regulations and is being tendered in Tranche A.

The transmission assets for the Lincs wind farm (the "**Transmission Assets**") are currently owned and being constructed by Lincs Wind Farm Limited ("**LWFL**").

It is currently expected that construction of the Transmission Assets will be completed in January 2012. Once completed, the Transmission Assets will be transferred to the OFTO identified as the successful bidder through the tender process via a transfer agreement.

The costs of developing and constructing the Transmission Assets, estimated on the basis of information provided to date, are £310.5 million (the "**Initial Transfer Value**"). This Initial Transfer Value includes the offshore substation platform ("**OSP**"). The Initial Transfer Value will be updated as part of Ofgem's cost assessment process, as described in the Generic Preliminary Information Memorandum entitled "GB Offshore Transmission: Investment Opportunity – Tender Round 2" and as further described below. That document also provides further information on the tender process generally.







THE INVESTMENT OPPORTUNITY

Transmission Assets Overview

Location

The Lincs wind farm project (the "**Project**") is located approximately 8km off the Lincolnshire coast near Skegness, adjacent to the existing operational Lynn and Inner Dowsing offshore wind farms. The Project includes a single 33kV/132kV offshore substation indicated by the black dot within the boundary of the Lincs wind farm in Figure 1 below. The project is linked to the onshore electricity transmission system by two 132kV export cables running along the seabed and coming ashore near Guys Head within the Greater Wash area and connecting to a 132kV/400kV substation approximately 9km inland at Walpole, Norfolk. The Project is ultimately connected to the national grid at the 400kV National Grid Electricity Transmission (NGET) Walpole Substation. The onshore transmission licensee is National Grid Electricity Transmission.

Figure 1 below shows the location of the Wind Farm and Transmission Assets.



Source: Independent Lenders' Engineer's Report, Lenders' Technical Adviser 2010



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Timeline

The manufacture of export cables commenced in 2009 and the preliminary construction and fabrication works commenced on the onshore and offshore substations in Spring 2010.

Installation of the turbine foundations began in March 2010 and are scheduled for completion in December 2011; The installation of wind turbines is scheduled from March 2012 until December 2012. The offshore substation will be installed in-situ from August 2011 until January 2012; with all cable installation activities (array, collector and export) commencing April 2011 and completing March 2012.

Installation of the Transmission Assets is expected to complete January 2012 with the wind farm being energised March 2012 and fully commissioned and wholly operational March 2013.



Transmission Network Design

Table 1 summarises the key transmission network design features of the Transmission Assets:

Table 1 – Lincs Wind Farm Network Design Features

Key Features	
Expected minimum designated service life	Main transmission components: 20-40 years
Capacity ratings	250 MW

The Project's transmission system will have a rated capacity of 250MW; the wind farm will have a total installed capacity of 270MW. The transmission entry capacity from offshore to onshore is 250MW; the connection agreement is made with NGET with an offered connection date of 1st July 2011. A generation licence was obtained in September 2010.

The Project has entered into its obligations under the CUSC via a CUSC Accession Agreement, effective from 2005. The Project is subscribing to the standard CUSC code as summarised in the following referenced National Grid document: <u>http://www.nationalgrid.com/NR/rdonlyres/87720CE3-B779-4C89-9B51-</u> <u>7F3833423B2F/9646/CUSCSummary15.pdf</u>







Description of Transmission Assets

Figure 3 below shows the proposed route for the onshore cable.



Source:RES Drawing No. 01515D69116-02

An overview of the assets that LWFL currently propose to transfer to the OFTO and which were used to derive the Initial Transfer Value of the transmission assets, is set out in Table 2 below. Table 4 provides a more detailed list of equipment proposed for transfer.





Asset	Description	
OSP	The OSP's purpose is to house the necessary equipment for connection and switching of the wind turbine arrays. The main apparatus proposed to be transferred to the OFTO includes two 132/33kV transformers, associated 132kV and 33kV switchgear and one standby diesel generator.	
Subsea cable	Two 3-core 132kV cross-linked poly-Ethylene cables each 48km long will connect the OSP to the shore where they are joined to the onshore cable in a Transition Joint Bay. In open water the cables are 630mm ² Cross Sectional Area (" CSA ") and across the intertidal sea-defence crossing they are 1000mm ² CSA. Each cable system has a rated transmission capacity of 135MW.	
	data.	
Onshore cable	The onshore cables link the subsea connections to the onshore substation. The connections will consist of two sets of three single-core 132kV copper underground cables, each 12km in length.	
	Optical fibres are installed separately to the onshore cable – not as an integrated bundle.	
Onshore substation	The onshore substation houses the necessary high voltage switchgear for connecting the onshore cables to the transmission network, the harmonic filters and associated reactive compensation equipment.	
	Main apparatus proposed to be transferred to the OFTO includes two 400/132kV transformers, 400kV and 132kV switchgear, harmonic filters and static and dynamic reactive compensation equipment and all associated auxiliary equipment.	
Spares	Provisional list of spares for transfer includes: 400m of 630mm ² subsea export cable	

Table 2 – Asset summary

Table 3 below sets out the current offshore and onshore boundary points proposed by the developer. These have been used for the purposes of calculating the Initial Transfer Value.

Boundary Point	Location
Offshore	Located at the 33kV collector cable connections at the OSP 33kV switch board.
Onshore	Located at the connection between the NGET 400kV busbar and the 400kV busbar disconnectors.

Table 3 – Proposed boundary points offshore and onshore





Redundancy

Electrical redundancy will be provided by two 240MW rated offshore transformers, two 300MW rated onshore transformers, and in both cases swithchgear is rated to match these maximum capacities. There are two subsea cables each rated at 125MW and two land cables with a rated capacity slightly in excess of 125MW. The switchgear is configured to allow appropriate operation and switching between the transformers at both the onshore and offshore substations.

Contractual Arrangements

LWFL has adopted a multi-contract strategy for the realisation of the Project. LWFL has awarded all major contracts for the Project. LWFL strategy has partly been to reduce interfaces and therefore have generally appointed single contractors for the engineering, supply, fabrication / construction / installation of each discrete package of works as appropriate. These contracts are generally of a bespoke form with lump sum remuneration based upon the achievement of agreed milestones.

Table 4 sets out the main contracts, current contract status and assets proposed for transfer.

Services and main equipment list	Contract	Contractor
OSP - construction: Steel lattice jacket and topside platforms	Design & Supply Installation	Siemens Transmission & Distribution Ltd (STDL) (with McNulty) Scaldis
OSP - mechanical and electrical equipment: 2 x 132/33kV 240MVA transformers 5 x 132kV switchgear bays 15 x 33kv switchgear bays 2 x earthing transformers 2 x 33kV 40MVA reactors	Design, supply and Installation	Siemens Transmission & Distribution Ltd (STDL)
Offshore cables: 2 x 48km 3 core cables	Supply Installation	Nexans Sub Ocean Limited (SOL)
Onshore cables: 2 x (3 x 1c) circuits 12km length	Supply and Installation	Siemens Transmission & Distribution Ltd (STDL) (with Prysmian)
Onshore Substation: 2 x 132/400kV 300MVA transformers 2 x 132kV 40MVA reactors 7 x 132kV switchgear bays 1 x 400kV 'Teed' switchgear bay 1 x SVC'plus' 13.9kV (Static VAR Compensation System) 2 x 132kV Harmonic Filters	Design, supply and Installation	Siemens Transmission & Distribution Ltd (STDL)

Table 4 – Key Contracts and Assets





Consents and property rights

The Project has all the necessary onshore and offshore consents in place for construction of the Transmission Assets. These include a Crown Estate lease, Section 36 Electricity Act (1989), CPA consent and a FEPA licence.

In addition to this, all necessary property rights for the onshore cable route have been agreed and secured.

There are other ancillary consents that are required ahead of construction, such as DECC approval of the decommissioning plan and consent to deposit drill arisings. These are at various stages in the process of gaining approval, which the project management team are progressing in accordance with the project's requisite schedule for delivery.

A separate Transport and Works Act Order ("**TWAO**") and Food and Environment Protection Act ("**FEPA**") application has been made for the 'LID6' turbines (additional 20MW) which are currently close to determination.

Ownership Structure

Centrica plc ("**Centrica**"), through a subsidiary, acquired the Project in December 2003 from Renewable Energy Systems Limited.

On 23 December 2009, Centrica Renewable Energy Limited, a wholly owned subsidiary of Centrica, agreed to sell 50% of its shareholding in LWFL to a joint venture vehicle. Lincs Renewable Energy Holdings Limited, owned as to 50% by DONG Wind I (UK) Limited and as to 50% by Siemens Project Ventures GmbH. Centrica has also established Centrica (Lincs) Wind Farm Limited to act as an intermediate holding company for its shareholding in LWFL.

An overview of the ownership structure of the Lincs wind farm and Transmission Assets is illustrated in Figure 4 below:



Initial Transfer Value

Ofgem E-Serve will calculate the economic and efficient costs which ought to be, or ought to have been, incurred in connection with developing and constructing the Transmission Assets. The assessment of these costs will be used to determine the transfer value.

For the purpose of commencing the tender process, applicants should assume an Initial Transfer Value of £310.5 million for the Transmission Assets summarised in Table 2 and 4 above. This value has been provided from LWFL's cost forecasts, assuming the boundary points summarised in Table 3. Ofgem E-Serve has not yet reviewed this cost forecast information. Ofgem E-Serve will be undertaking a detailed review of the information as part of its calculation







of the estimate of the economic and efficient costs and will provide this estimate as the indicative transfer value at the qualification to tender stage.

CONTACT DETAILS

The information in this document is provided for information purposes only. It is designed to provide prospective OFTOs, lenders and advisers with certain high-level information related to the Transmission Assets, to support the launch of the initial Pre-Qualification stage of the tender process.

All enquiries or communications, including requests for additional information, should be sent to tendercoordinator@ofgem.gov.uk.





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