Preliminary Information Memorandum

Greater Gabbard Offshore Transmission Assets

July 2009





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SUMMARY

In April 2009 Ofgem distributed a teaser document, "UK Offshore Transmission – Investment Opportunity", to investors outlining the opportunity to acquire offshore electricity transmission assets in Great Britain ("**GB**") under a new regulatory regime governing the ownership and operation of offshore electricity transmission. This regime is being developed jointly by the UK Government, through the Department of Energy and Climate Change ("**DECC**") and the GB energy regulator, the Office of Gas and Electricity Markets ("**Ofgem**").

This document is a summary of information provided by the developer and outlines specifically the opportunity for investors to acquire the transmission assets and become the licensed Offshore Transmission Owner ("OFTO") of the Greater Gabbard offshore wind project (the "Greater Gabbard Wind Farm"). The Greater Gabbard Wind Farm will consist of 140 Siemens 3.6MW wind turbine generators ("WTGs").

The transmission assets for the Greater Gabbard Wind Farm (referred to in this document as the "Greater Gabbard Transmission Assets") are currently owned and being constructed by Greater Gabbard Offshore Winds Limited ("GGOWL"), a joint venture ultimately controlled by Scottish and Southern Energy Plc ("SSE") and RWE AG ("RWE"), which has contracted construction of the Greater Gabbard Transmission Assets to a single turnkey contractor who, in turn, has sub-contracted the asset construction.

It is currently expected that construction of the Greater Gabbard Transmission Assets will be fully completed by March 2011. Once completed, the Greater Gabbard Transmission Assets will be transferred to the OFTO identified as the successful bidder through the tender process via a sale and purchase agreement.

The preliminary transfer value estimated by Ofgem on the basis of information provided to date (the "Estimated Transfer Value") of the Greater Gabbard Transmission Assets is £343.7 million. This Estimated Transfer Value includes the offshore substation platforms ("OSPs"). The Estimated Transfer Value is subject to adjustment, as described in the document entitled "Generic Preliminary Information Memorandum" and as further described below.





THE INVESTMENT OPPORTUNITY

1. Transmission Assets Overview

Location

The Greater Gabbard Wind Farm is to be located approximately 40km east of Harwich off the Suffolk coast in the East of England, as shown in Figure 1 below. The offshore connection points will be located on the two OSPs, located within the boundaries of the Greater Gabbard Wind Farm.

The Greater Gabbard Transmission Assets will connect to the transmission system at the 132kV substation at Leiston, Suffolk, approximately 0.5km inland. The onshore transmission licensee is National Grid Electricity Transmission ("NGET").

The Greater Gabbard Transmission Assets are located both inside and outside of UK territorial waters.

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Figure 1: Location of Greater Gabbard Wind Farm and Transmission Assets

Source: GGOWL

Timeline

Construction of Greater Gabbard Wind project commenced in May 2008 with work on the offshore transmission assets expected to begin in September 2009. The current expected date of delivery of the first part of the onshore connection by NGET is October 2009. Construction of the transmission assets is expected to be fully complete in March 2011, with the wind farm also being fully operational by this date.





Transmission Network Design

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

Table 1 – Greater Gabbard Network Design Features

Key Features		
Expected minimum service life	Main transmission components expected to be 25-40 years	
Capacity ratings	167MW for each of three export cables	

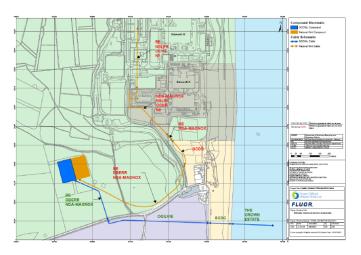
In November 2005, GGOWL signed both a Connection and Use of System Code ("CUSC") bilateral and a CUSC construction agreement with NGET for a 500MW grid connection at Sizewell.

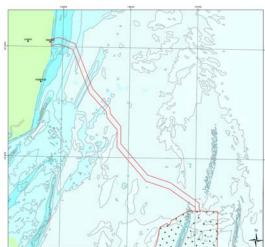
The transmission assets will include two OSPs, Inner Gabbard and Galloper, which will receive a maximum wind turbine output of 359.6MW and 144.4MW respectively. The system is designed such that all the energy from Galloper OSP is imported onto the Gabbard OSP before it is exported to shore.

Description of Transmission Assets

Figure 2 below shows the proposed onshore and offshore cable route for the Greater Gabbard Transmission Assets. Detailed final design of the offshore cable route is ongoing and the figure below shows the cable corridor in which the final route will lie.

Figure 2: Route of Greater Gabbard Transmission Cable





Source: GGOWL

An overview of the assets that GGOWL currently propose to transfer to the OFTO and which were used by Ofgem to derive the Estimated Transfer Value of the Greater Gabbard Transmission Assets, is set out in Table 2 below. Table 4 provides a more detailed list of equipment currently proposed for transfer.





Table 2: Asset summary

Asset	Description
OSPs	The OSPs' purpose is to house the necessary equipment for connection and switching of the wind turbine arrays. Main apparatus proposed to be transferred includes five 132/33kV transformers together with associated 132 kV and 33kV switchgear. In addition to this, the Galloper platform houses two reactors.
Subsea cables	The subsea cables connect the OSPs to the shore where they are joined to the onshore cables in a jointing chamber. The platform-to-shore connections will consist of three 3 core 132 kV cables, each 45.5km in length. In addition the Galloper and Inner Gabbard OSPs are connected by a single 3 core cable, 16km in length.
Onshore cables	The onshore cables link the subsea connections to the onshore substation. The onshore connections will consist of three underground 132kV cables, each 0.59km in length.
Onshore substation	The onshore substation houses the necessary equipment for connecting the onshore cable to the transmission or distribution network. It also accommodates associated reactive compensation equipment. Main apparatus proposed to be transferred includes 132kV switchgear and reactive compensation/harmonic filtering equipment
Spares	The current spares available for transfer are 1500m of 132kV subsea cable, 3 jointing and 2 termination kits for the subsea cable, one spare grating for a complete OSP and navigational lights.

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 Estimated Transfer Value.

Table 3: Proposed boundary points offshore and onshore

Boundary Point	Location
Offshore	Located at the 33kV busbar on the two OSPs
Onshore	Located at a position adjacent to National Grid's 132kV switchgear

Redundancy

There are three export cables sized specifically for the 500MW load of Greater Gabbard. If a fault occurs on one of the export cables or the associated transformers, then the electrical energy can be re-routed. However, the total energy exported will be constrained by the rating of the remaining export cables or transformer.

Contractual arrangements

Fluor Ltd has been awarded the balance of plant ("**BOP**") contract, covering the design, installation and erection of the WTGs. This BOP contract excludes the supply and commissioning of the WTGs.





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

Table 4: Key Contracts and Assets

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Services and Main Equipment List	Contract	Contractor			
OSP – construction:	Balance of Plant	Main contractor: Fluor Ltd Subcontracts: awarded			
2 x offshore substation structures					
OSP – mechanical and electrical equipment :	Balance of Plant	Main contractor: Fluor Ltd Subcontracts: awarded			
5 x 132/33kV transformers 2 x 30MVAr reactor (Galloper) 2 x 33/0.4kV transformers 3 x 33kV earthing transformer					
Subsea cables:	Balance of Plant	Main contractor: Fluor Ltd Subcontracts: awarded			
3 x 45.5km 132kV 3 core cables 1 x 16km 132kV 3 core cable					
Onshore cables:	Balance of Plant	Main contractor: Fluor Ltd Subcontracts: awarded			
3 x 0.585km 132kV 3 core cables					
Onshore substation:	Balance of Plant	Main contractor: Fluor Ltd Subcontracts: awarded			
3 x 132kV GIS circuit breakers 3 x 132/0.11kV transformers 3 x 132kV capacitor banks 3 x 145kV harmonic filters 3 x 132/13.9kV transformers 3 x 13.9kV 50MVAr SVC+					
3 x 13.9kV 43.1MVAr MSR 3 x 13.9kV 55.1MVAr MSC					

Consents and property rights

All necessary offshore consents and licences are in place for the construction of the Greater Gabbard Transmission Assets. These include an exercised option on a Crown Estate lease, Electricity Act (1989) Section 36 and Coastal Protection Act (1949) consents and a Food and Environment Protection Act (1985) licence. In addition to this, all necessary property rights for the onshore cable route have been agreed and secured.

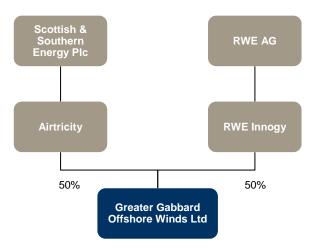




Ownership Structure

An overview of the ownership structure of the Greater Gabbard Wind Farm and the Greater Gabbard Transmission Assets is illustrated in Figure 3 below:

Figure 3: Ownership Structure



2. Preliminary view of Estimated Transfer Value

Ofgem, with input from its external advisers, has undertaken an exercise to determine the Estimated Transfer Value for the Greater Gabbard Transmission Assets summarised in Table 2 and 4 above, assuming the boundary points summarised in Table 3. The Estimated Transfer Value is intended to allow SSE/RWE to recover their economic and efficient costs of developing the Greater Gabbard Transmission Assets and, as such, may be subject to adjustment based on new or more detailed information becoming available to Ofgem, and upon final completion of the Greater Gabbard Transmission Assets.

For the purpose of commencing the tender process, Ofgem has established an Estimated Transfer Value of £343.7 million for the Greater Gabbard Transmission Assets.

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 Greater Gabbard Transmission Assets, to support the launch of the initial, pre-qualification ("**PQ**") phase of the first tender process.

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





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