Overview of Great Britain’s Offshore Electricity Transmission Regulatory Regime

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Minister of State’s Foreword

The UK is the world leader in offshore wind and we have ambitious plans to increase generation from this source fourfold by 2020. Using our domestic wind resource helps to ensure our sources of energy are more diverse and more secure and is a critical part of the move to a low-carbon economy.

It is both a green investment opportunity and a driver for more green jobs in the UK. Offshore wind has the potential to create 70,000 new green jobs and bring economic benefits and investment to the UK of up to £8bn in annual revenues by 2020.

The competitive approach for licensing the new offshore grid outlined in this document will promote innovation and deliver lower costs. The offshore transmission regulatory framework has been designed to be flexible and to deliver the co-ordinated offshore grid we need as economically and efficiently as possible.

The Government will ensure the regime delivers the co-ordinated network we need and to deliver a vision for network development out to 2020 and beyond. We look forward to continuing to work with the electricity industry as we extend the transmission grid out into the seas around our shores.

Ofgem will shortly run the first tenders to appoint Offshore Transmission Owners (OFTOs) for projects in the first tender round. We are keen to see both existing transmission companies and new entrants participate in this significant market opportunity and bring new thinking into this crucial and dynamic sector.

We are grateful to all those who took the time to share their views as we refined our proposals. This is an outstanding opportunity for the UK and the launch of the tender process is a key step forward.

Lord Hunt of Kings Heath, OBE

Minister of State at the Department of Energy and Climate Change
Chief Executive Officer’s Foreword

The challenge to meet the Government’s 2020 environmental targets is as substantial as it is exciting. That is reflected in the unprecedented scale of offshore transmission network construction needed to connect new offshore renewable generation to the national electricity grid. The first three Crown Estates rounds are estimated to require investment in grid infrastructure of up to £15 billion.

A new regulatory regime for offshore transmission networks has been developed, in partnership, by Ofgem and the Government. It provides a framework to encourage the new investment needed to deliver those networks. And it creates a huge opportunity – for new entrants and companies already active in the GB market – to invest in offshore transmission assets under a long-term and low-risk regulatory regime.

Furthermore, awarding assets through a competitive tender process provides Ofgem with the opportunity to utilise competitive forces to deliver fit-for-purpose connections at the best value for offshore generators and consumers.

This new and world-leading approach offers innovative and effective ways to navigate the rapidly changing landscape of the energy industry, while ensuring that we continue to protect the needs of current and future consumers.

Alistair Buchanan, CBE

Chief Executive Officer, Ofgem

Member of the Gas and Electricity Markets Authority
1. Background and Introduction

The Government has set an ambitious target for the deployment of renewable energy over the next decade. By 2020, the Government expects that 15 per cent of the UK’s energy needs will be met from renewable sources. This means that around 30 per cent of our electricity may come from renewables.

In order to achieve this substantial deployment of green energy in the timeframe, the Government has established a policy framework to support investment in renewable generation. The Renewables Obligation\(^1\) is the main form of support for large scale renewable electricity. Offshore wind will play an important part in meeting our renewable energy and carbon emission targets and improving energy security by 2020 and afterwards, towards 2050. This is supported by the Crown Estate’s leasing programme for offshore generation sites, particularly for Round 3 projects\(^2\).

These critical steps in mitigating the effects of climate change are reliant on the development of offshore electricity transmission networks to bring the renewable energy into the homes and businesses of energy consumers in Great Britain. In total, the investment in grid infrastructure to connect Rounds 1, 2 and 3\(^3\) of offshore wind could be up to £15 billion.

A step change in network investment of this kind calls for a more dynamic approach to the development of transmission networks: an open, competitive approach that is built on encouraging innovation and new sources of technical expertise and finance. This is why the Government, together with Ofgem\(^4\) has

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\(^1\) http://www.berr.gov.uk/energy/sources/renewables/policy/renewables-obligation/page15630.html  
\(^2\) http://www.thecrownestate.co.uk/round3  
\(^4\) The Office of Gas and Electricity Markets. The terms Ofgem and the Authority (the Gas and Electricity Markets Authority) are used interchangeably in this document.
developed the competitive offshore transmission regulatory regime that is presented in this document. It will underpin the Government’s renewable energy targets because it places the requirements of renewable generators and GB electricity consumers at the forefront.

By running an open competitive tender for the rights to own and maintain new offshore transmission infrastructure, generators will be partnered with the most efficient and competitive players on the market, resulting in lower costs and higher standards of service for them, and ultimately, consumers.

This statement follows an extensive period of consultation with industry\(^5\) where the Government and Ofgem have progressively considered the available options and refined the detail of our policy proposals. This process of consultation culminated in the publication of a final consultation\(^6\) on the regime in March 2009 where we presented our policy proposals and sought views in particular on a small number of remaining issues.

We have considered all the responses received to our previous consultations. Details of the changes that we\(^7\) have made as a result of responses to the final consultation are set out in a separate Annex alongside a summary of responses to that consultation.

Ofgem will shortly commence running the first set of tenders to appoint new offshore grid companies (Offshore Transmission Owners – OFTOs) for projects. This will be for projects falling within the ‘transitional’ regime which, broadly speaking, are projects where construction will have begun prior to commencement of the offshore regime.

\(^5\) A full history of the previous consultation documents is provided on the DECC and Ofgem websites.

\(^6\) Government response to ‘Offshore Electricity Transmission – A further joint Ofgem/DECC Regulatory Policy Update’

\(^7\) “We” refers to the Government and Ofgem except where it is obvious from the context that one or other body is the one being referred to.
The Government, Ofgem, the National Electricity Transmission System Operator and The Crown Estate will also continue to work together to ensure that the offshore transmission network develops in an efficient, co-ordinated and economical fashion.

This document is a joint statement by the Government and Ofgem presenting the regulatory regime for Offshore Electricity Transmission in Great Britain in advance of implementation at ‘Go-Active’\(^8\) (planned for 24 June 2009).

The Government and Ofgem would like to thank all those parties who have contributed to the development of the regime over the past four years.

\(^8\) At ‘Go-Active’ the modifications to codes and licences will be made to enable the first tender exercises to be run and OFTOs to be identified.
2. Regulatory Framework

This section provides a summary of the key features of the new regime. Following ‘Go-Active’ of the new regime on 24 June, and use of the Secretary of State’s powers hence forward, the detail that will govern the new regime will be found in the standard industry framework documents.

Our approach to licensing offshore transmission involves the competitive award of new licences whilst, where possible, extending the principles of the onshore regulatory framework for the grid network in Great Britain. We believe this approach will guarantee consistency with the regulatory arrangements onshore, and that the additional benefits of competition will ensure that costs of developing offshore grid connections are minimised. Under the new regime risks will be shared appropriately between the National Electricity System Operator (NETSO), OFTOs, offshore generators and consumers. Furthermore, the regime has been designed to enable a co-ordinated approach to the development of the offshore and the onshore network. The Government is extending the role of National Grid Electricity Transmission plc (NGET) as system operator offshore (NETSO) which will extend the scope of its work in respect of the development of an efficient, co-ordinated and economical system of electricity transmission.

The competitive tender process, which has been developed to ensure the timely and effective selection of OFTOs, will be open to all companies as qualified by Ofgem. This has the potential to attract a significant number of new entrants to the sector bringing innovative solutions to the design, build and financing of the new offshore grid we need. The regulations underpinning the tender process have recently entered into force as The Electricity (Competitive Tenders for Offshore Transmission Licences) Regulations 2009.

In the new regime each connection, as specified by an offshore generator through its connection agreement with the NETSO, will be awarded to a licensed OFTO. The OFTO licence will be granted by the competitive tender process which will be run by Ofgem. This tender process will allocate the

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9 SI 2009 No. 1340: http://www.opsi.gov.uk/si/si2009/uksi_20091340_en_1
transmission licence to the party who provides the best value bid for the construction\textsuperscript{10} and maintenance of fit-for-purpose transmission assets. The tender process will also determine the allowed regulated revenues of the OFTO for a 20 year period\textsuperscript{11}.

In developing the offshore transmission regulatory framework, the Government and Ofgem have, where possible, extended the principles of the onshore regulatory framework offshore. There are a number of multilateral codes\textsuperscript{12} that underpin the electricity market. The Government took powers in the Energy Act 2004 so that the Secretary of State would be able\textsuperscript{13} to make changes to the transmission licence and industry codes for purposes connected with offshore transmission\textsuperscript{14}. DECC and Ofgem have consulted extensively on change proposals for offshore transmission. In conjunction with this final statement, the Secretary of State’s decision notices have been issued to document owners and published on the DECC website.

In line with our approach, offshore generators connected to and/or using the transmission system will be required to accede to (and therefore comply with) these codes. NGET (National Grid Electricity Transmission plc) will include such requirements when offering contractual terms to a party applying to it for connection to and/or use of the transmission system. Licensed generators also have licence obligations to comply with these multilateral codes.

Once the transmission licence has been granted, an OFTO will be, therefore, be subject to licence and code obligations which are generally consistent with those of onshore transmission owners (TOs).

\textsuperscript{10} Construction will only be carried out by the OFTO under the Enduring regime

\textsuperscript{11} Except in limited cases where a tender process does not involve robust competition or an OFTO of Last Resort mechanism is used.

\textsuperscript{12} Relevant multilateral codes include BSC, CUSC and Grid Code.

\textsuperscript{13} Using powers under sections 90 and 91 of the Energy Act 2004.

\textsuperscript{14} Changes have been proposed to the transmission licence (including the GBSQSS), BSC, CUSC, DCUSA, Distribution Code, Grid Code and STC.
This section provides an overview of the regulatory framework describing:

A. The Competitive Tender Process
B. Key OFTO Relationships
C. Licence and Code Obligations
D. OFTO Entitlements
E. The Role of the National Electricity Transmission System Operator (NETSO).
A) The Competitive Tender Process

Under the offshore transmission regulatory regime, Ofgem will be responsible for conducting tender exercises to select OFTO licensees. Following their separate consultation on the design of the tender process, Ofgem expects to publish a final statement on the tender process in June 2009. This section provides an overview of the key features of the competitive tender approach.

Eligibility to bid for and own offshore transmission assets

Subject to the following constraints, the competitive tender process to appoint OFTOs is open to all interested parties. The constraints are as follows:

NGET, as National Electricity Transmission System Operator, is prohibited from owning, or seeking to own, offshore transmission assets, given that it is likely to have privileged access to information that would put it at a competitive advantage as regards others in the market place. Other National Grid entities can bid for and own offshore transmission assets, but these interests are subject to requirements for business separation from the National Electricity Transmission System Operator; and

The EU Energy Third Package\textsuperscript{15} will, when the unbundling requirements are transposed into UK law in early 2012, largely prohibit companies from owning and operating both transmission and generation/supply assets. Member States will have three options - ‘full ownership unbundling’ and the ‘Independent System Operator (ISO)’ and ‘Independent Transmission Operator (ITO)’ models. These latter models permit vertical integration existing on entry into force of the Directive to continue, provided certain arrangements are in place to ensure the effective independence of the transmission system operator. In addition, a derogation exists which permits undertakings to remain vertically integrated provided they can demonstrate to the regulator and the Commission that there is more effective independence of the transmission system operator than in the ITO model. However, before transposition, it is possible for generators to bid for, own and operate offshore transmission assets, provided the OFTO business complies with current financial ring-fencing and business separation requirements.

\textsuperscript{15} http://ec.europa.eu/energy/gas_electricity/third_legislative_package_en.htm
Type of OFTO

The fundamental role of an OFTO is to operate the transmission assets to ensure offshore generators can connect to the onshore grid. The precise nature of this role will depend on whether the OFTO is granted a licence in respect of a ‘transitional’ or ‘enduring’ project\textsuperscript{16}.

Transitional projects are, broadly speaking, those projects where construction of the assets has begun prior to the commencement of the offshore transmission regulatory regime. There are a number of specific criteria that a project must meet in order to be tendered as a transitional project. These criteria have been set out previously by Ofgem in their tender consultation documents and include, amongst other things, that:

- Either the project is constructed by the ‘Go-Active’ date (expected to be 24 June 2009); or
- If not constructed, the project has achieved financial close (or an equivalent, such as a firm investment commitment) by ‘Go-Active’; or
- If it has not achieved financial close (or equivalent) by ‘Go-Active’, it has done so by ‘Go-Live’\textsuperscript{17} (expected June 2010).

If a project does not meet these criteria, it is an enduring project.

For transitional projects, the role of the OFTO is to finance, own and operate an asset that has been/will be constructed by the generator developer. The generator developer will transfer ownership of the completed transmission asset to the OFTO at a price set by Ofgem’s cost assessment.

For projects in the enduring regime, the OFTO will also design, finance and construct the transmission assets as well as operate and own them. The first tenders for enduring projects are expected to be run in summer 2010.

\textsuperscript{16} The Government and Ofgem decided that there should be two categories of project in order to avoid any regulatory gap during the development of the regime. The policy was introduced to reduce the risk that generator developers might delay construction of their projects whilst the regulatory regime was finalised.

\textsuperscript{17} ‘Go-Live’ commencement of sections 89 and 180 of EA2004 and section 44(3) of EA2008 switching on the whole regulatory regime for offshore transmission.
The Transitional Projects

The tables below indicate the projects\(^\text{18}\) that Ofgem expects to qualify for the first and second transitional tender rounds, based on information provided by project developers. However, Ofgem notes that these projects are still required to meet all qualification pre-conditions in order to ensure that they qualify as transitional projects. Following this, each will need to meet the required tender entry pre-conditions before they enter the tender round.

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The first transitional tender process is expected to commence in summer 2009, and will involve tenders for those projects that have met the transitional qualification pre-conditions by a date specified by Ofgem, and subsequently met the tender entry pre-conditions.

The second transitional tender process is expected to commence in mid-2010, and will involve tenders for those projects that have met the transitional qualification pre-conditions after ‘Go-Active’, and subsequently met the tender entry pre-conditions.

Based on information provided by the developer of the relevant offshore wind farm, Ofgem will first determine a provisional transfer value, prior to commencement of the transitional tender processes. The provisional transfer

\(^{18}\) These projects are either linked to a single offshore windfarm development or a group of geographically adjacent offshore windfarm developments with a common parent company and with similar timetable requirements.
value will equate to the price that bidders should assume they must pay the developer to acquire the completed transmission assets.

The provisional transfer value will be subject to a review, once construction of the transmission assets is complete. This will establish a final transfer value (which will not be less that 75% of the provisional transfer value) which will then be paid by the OFTO to the developer upon transfer. Where there are any differences between this and the provisional transfer value, Ofgem expects to adjust the OFTO’s revenue stream accordingly.

The terms of transfer will include assignment of relevant construction warranties, and seller’s warranties to be negotiated between the seller and the OFTO.
B) **Key OFTO Relationships**

We now highlight each of the key relationships that the OFTO will have. The diagram below gives a summary of these relationships.

**Ofgem** – The OFTO will be licensed following the competitive tender process run by Ofgem described above. The licence issued by Ofgem sets out a series of obligations that the OFTO must meet, but also contains the detail of the OFTO’s revenue entitlements based on the outcome of the tender process.

The OFTO will be required to demonstrate compliance with certain licence conditions throughout the period in which their licence is in force, in particular relating to availability performance.

**NETSO** – The OFTO will receive the regulated revenues set out in its licence from the National Electricity Transmission System Operator. These revenues will be recovered by the NETSO through transmission charges (for more on the NETSO see section E).

**Government** – The OFTO will need to ensure that all necessary consents have been gained from the relevant government departments to enable it to run its business. Such consents may be obtained by the generator and transferred to the OFTO.
**Crown Estates** – The OFTO will be required to hold a Crown Estates lease in order to place its transmission assets on the seabed.

**Offshore Generator** – For transitional projects the transmission assets that have been built by the generator will need to be transferred to the licensee that is selected as a result of the competitive tender process run by Ofgem. A Sale and Purchase Agreement (SPA) will be used by developer and successful bidder to define the terms for the transfer of the transmission assets and associated rights and liabilities to the newly licensed offshore transmission owner (OFTO). In the event that the generator and appointed OFTO can not agree to such terms, the Authority may use powers granted to it under the Energy Act 2008 to transfer ownership of the asset to the OFTO.
C) **Licence and Code Obligations**

In addition to the key relationships explained above, it is important to note that the OFTO will have its obligations defined by licence and codes requirements along with its entitlements and incentives (covered in the next section). These obligations largely mirror existing onshore arrangements.

**Licence obligations**

All transmission licensees have duties, under the Electricity Act 1989, to “develop and maintain an efficient, co-ordinated and economical system of electricity transmission”.

This over-arching duty is built upon by specific obligations in the transmission licence, through licence terms, standard and special conditions:

- **Terms**: These set out, among other things, the geographical area in which the licence applies and its duration. The terms are fixed by the Authority upon grant of the licence and may not be subsequently altered, except as provided for by specific primary legislation.

- **Standard Conditions**: These cover obligations of all transmission licensees. For example, this section of the licence includes an obligation for licensees to comply with the System Operator - Transmission Owner Code (see below), which sets out certain contractual obligations that exist between different transmission licensees, and obligations in respect of financing and business structure.

- **Special Conditions**: These conditions cover matters that are specific to a licensee, such as the manner in which it is remunerated, and any performance obligations it may have.

**Codes Obligations**

As for onshore TOs, an OFTO will be required to accede to the System Operator – Transmission Owner Code (STC). The OFTO will be required to accede to the STC at the preferred bidder\(^{19}\) stage i.e. shortly before its transmission licence is granted. The development of the offshore regime has required the Secretary of State to amend the STC (along with other relevant codes, agreements and licences) using the power under sections 90 and 91 of the Energy Act 2004. DECC and Ofgem have consulted extensively on the

\(^{19}\) Further information on our tender process and the preferred bidder can be found on Ofgem’s website at:
http://www.ofgem.gov.uk/Networks/offtrans/Pages/Offshoretransmission.aspx?sid=frontpage
proposed changes they believe it appropriate for the Secretary of State to make. These changes have been published on the DECC and Ofgem websites.

http://decc.gov.uk

http://www.ofgem.gov.uk
D) OFTO Entitlements & Incentives

20 year revenue stream

The OFTO’s revenue will be predominantly made up of the 20 year revenue stream determined by its bid during the tender process, based upon its calculation of the costs of financing, operating, maintaining (and in the case of enduring projects, designing and building) the transmission assets.

OFTOs will receive their regulated revenue stream payments from NGET (the National Electricity Transmission System Operator). NGET will calculate and levy the charges payable by the offshore generator for the transmission service, according to its published Use of System charging methodology. Ten per cent of the OFTO’s revenue stream will be exposed to the performance incentive set out below.

This revenue stream will not be subject to periodic regulatory review over the 20 year price controlled period. At the end of the initial 20 year period the revenue stream may be reviewed and extended, or alternatively the licence could be revoked or a further tender could be run. The action taken at the end of the 20 year period would be dependent on the ongoing demand for the assets and the view of the Authority as to the most sensible course of action at that time.

Importantly, the OFTO’s revenue stream will be based on asset availability, rather than asset utilisation. So in other words, as long as the asset is available to transmit electricity back to the onshore grid, the OFTO will be entitled to its full revenue stream irrespective of the quantity of energy that the generator is producing.

Revenue adjustments

The revenue stream of OFTOs will be subject to a number of adjustments for certain pre defined events, the cost of which cannot be predicted in advance. These adjustments have been designed to ensure that OFTOs assume those risks that they are best able to manage.

The revenue adjustment mechanisms are:

- For transitional projects, adjustment to the revenue stream to reflect any required changes to the provisional (‘ex ante’) transfer value, to take account of actual allowed costs (the ‘ex post’ cost assessment, or final transfer value) after construction;

- Full indexation of the revenue stream to the Retail Price Index;

http://www.nationalgrid.com/uk/Electricity/Charges/chargingstatementsapproval
• Supplementary revenue for investment in additional transmission capacity that is required by the generator modifying its connection agreement with NGET. This additional revenue will only be allowed provided that the additional capital expenditure investment does not exceed 20 per cent of the initial capital costs or transfer value of the transmission assets; and

• Pass-through of certain predictable, but difficult to pre-estimate costs, including changes to expected decommissioning costs (e.g. due to legislative changes), code changes, lease costs, licence fees and Ofgem tender costs.

**Performance incentive**

OFTOs will be incentivised to maintain very high levels of asset availability throughout the 20-year revenue period, in order to limit financial losses to generators from network outages. The key features of this incentive are:

• The maximum exposure of an OFTO’s annual revenue to the performance incentive is 10 per cent;

• An availability level of 98 per cent will be the default setting, but some degree of flexibility will be allowed in the tender process for alternative parameters to be defined by the Authority. Such variations in targets would be informed by the generator’s preference as to these parameters;

• A ‘banking mechanism’ will give the performance incentive sufficient ‘bite’ for the OFTO to fix both short- and longer-term faults and will also allow the OFTO to manage outage risk between years; and

• Generators will have the opportunity to request that the performance incentive is seasonally-weighted, that is to create stronger incentives for OFTOs in periods of the year where the value of potential lost generation (through network faults) is higher due to higher spot market prices.

In addition to the performance incentive, OFTOs will be required to post a ‘performance bond’ which will help to ensure that the performance incentive continues to operate effectively in the later stages of the 20 year revenue stream period.

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Additional services

OFTOs will also be able, like other regulated entities, to perform certain related, unregulated services such as contracting maintenance services to other offshore parties and providing additional\(^\text{22}\) reactive power services to NGET.

\(^{22}\) Additional to mandatory obligations defined in the STC.
E) The Role of the National Electricity Transmission System Operator

The Government announced NGET as offshore GBSO designate in August 2006. The Secretary of State will implement this decision at ‘Go-Active’ by extending NGET’s licensed area offshore. The extension of NGET’s licensed area will extend NGET’s current system operator role offshore. From ‘Go-Active’, NGET will be able to offer terms of connection to and/or use of the transmission system to offshore generators in respect of a transmission system connection point at an offshore location. The extension of NGET’s system operator role will extend the scope of NGET’s work in respect of the development of an efficient, co-ordinated and economical system of electricity transmission, to include the new offshore transmission connections.

In addition to this, the extension of NGET’s role has required Ofgem to make a series of changes to its special licence conditions through normal governance processes. NGET has consented to new special conditions C1, C2 and C3 which provide for enhanced business separation arrangements, as part of its transmission licence. These have been put in place to offer certainty to the market that NGET, in its system operator role, could not give preferential treatment to any party in the tender process.

Furthermore, Ofgem are to shortly consult on another new special licence condition, C4, which would require NGET to produce an annual ‘Offshore Development Statement’. This statement would set out a range of future scenarios for the development of the offshore transmission system based on information available and provided to NGET. The purpose of this statement is to provide information in the public domain about the likely impact of possible future scenarios on the transmission system. We consider that such information could be useful to offshore developers when making strategic decisions in respect of offshore generator projects.
3. What Happens Next?

This document is the final statement from DECC and Ofgem before implementation of the proposed regulatory regime begins. This section sets out the high-level milestones and key dates we currently have planned.

June 2009

Ofgem expects to issue final statement on the tender process

24 June 2009

'Go-Active': modification of codes and licences to enable the first tender exercises to be run and OFTOs to be identified

Summer 2009

Ofgem consultation on, and publication of, guidance notes for OFTO of Last Resort Direction

First tender exercise commences

June 2010

'Go-Live': switching on the whole regulatory regime for offshore transmission

23 'Go-Live' is expected to be one year after the ‘Go-Active’ date.
4. Contacts and Further Information

If you have any enquiries about the offshore transmission regulatory regime, please contact the following DECC or Ofgem staff members.

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