



cutting through complexity

# Offshore Transmission: An Investor Perspective – Update Report

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## Foreword

This independent report has been commissioned by the Office of Gas and Electricity Markets (Ofgem) from KPMG and is an updated version of Offshore Transmission: An Investor Perspective (published December 2012) on the UK Offshore Transmission Regime.

In the UK, separate Offshore Transmission Owners (OFTOs) take responsibility for offshore transmission assets under long-term OFTO licences. Since its launch in 2009, the OFTO asset class has seen over £1.4 billion invested and attracted significant interest from the investor community. It is underwritten by a transparent regulatory framework overseen by Ofgem, with a strong track record to date, and the NAO estimates<sup>1</sup> that £8 billion of investment may be needed in OFTOs by 2020, with the prospect of significantly more in the years thereafter.

This Update Report looks at the Offshore Transmission regime from an investor's perspective. It provides an overview of OFTO assets, including related business factors, risk and financial considerations and an explanation of the supporting regulatory regime. It also includes a presentation of the existing and new business opportunities provided by these assets in the context of other familiar infrastructure asset classes such as onshore networks and PFI/PPPs.

It has been a pleasure to work for Ofgem in preparing this Report and we look forward to working with all stakeholders to making the Offshore Transmission regime a continued success.

**KPMG LLP**

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<sup>1</sup> Offshore electricity transmission: a new model for delivering infrastructure, June 22, p15, NAO (2012)



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## Executive Summary

Since its launch in 2009, the Offshore Transmission Owner (OFTO) asset class has quickly attracted significant interest from the investor community, offering solid returns on a relatively low risk profile underwritten by a stable regulatory framework overseen by Ofgem. The purpose of this report is to provide an update to the report published in December 2012 on the UK Offshore Transmission Regime, which provided an independent overview of the OFTO asset class and an understanding of the investment proposition provided by this new asset class.

Over £1.4 billion has been invested so far in the OFTO asset class from a wide variety of equity and debt investors. The Department for Energy and Climate Change (DECC) estimates that 10 GW of offshore wind capacity is achievable by 2020 given the announced strike prices<sup>2</sup>, which would deliver billions of pounds of further investment in the market.

<sup>2</sup> *Electricity Market Reform Delivery Plan*, DECC (2013)

The key characteristics of this unique and well-defined asset class include:

## **A long-term inflation-linked revenue stream**

A fixed 20-year revenue stream indexed to UK inflation underpinned by the OFTO's licence provides a stable revenue profile over the life of the investment.

## **No exposure to the generating asset**

The OFTO's revenue stream is unrelated to the generating asset's performance (or even presence). The OFTO needs only to ensure the transmission infrastructure is available to transmit regardless of the power actually generated.

## **Limited regulatory risk**

The UK government's policy to support offshore wind, Ofgem's track record in providing a clear regulatory framework with a transparent and evolutionary approach to any changes and the absence of periodic regulatory resets means less risk to OFTO investments from changes to the regulatory landscape.

## **Solid counterparty**

OFTOs receive their revenues from the National Electricity Transmission System Operator (NETSO), a ring fenced, Ofgem-regulated, investment grade rated business with a low risk profile.

## **Contained operational risks**

Fitch has described the day to day risk of the OFTOs as no higher than most UK availability-based PFI projects.

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## Opportunities for upside

Incentive mechanisms built into the regulatory framework provide OFTOs with opportunities to earn rewards through strong performance. Cost savings over the life of the assets can enhance shareholder returns.

## Opportunity to take on construction, or focus on operations and maintenance

The OFTO asset class is evolving and future projects might enable OFTOs to design, procure and construct infrastructure if desired (OFTO build) or to focus on operations and maintenance only (generator build). The generator elects whether to follow either the OFTO build or generator build model, depending on risk appetite.

## Multiple entry points

Access to the asset class is possible through either the competitive tender exercises (administered by Ofgem) or through secondary market access to existing projects. An investor could bid in its own right or via consortia, depending on the exposure to the asset class sought and on the investor's experience and expertise. Where appetite is strong, investors may choose to participate in seeking to influence windfarm developers to adopt the OFTO build approach, for example through visibly demonstrating their experience of delivering similar types of assets.

**Whilst the OFTO asset class bears similarities to other investment opportunities in the UK and elsewhere, it also has some unique characteristics. The evidence to date suggests that OFTOs offer strong returns relative to comparable asset classes with similar risk profiles.**

# 1 Introduction

Electricity generated from offshore wind is important to achieving the UK Government's target to provide 15% of the UK's energy needs from renewable sources by 2020. Ensuring that necessary infrastructure connecting these offshore windfarms to the onshore electricity grid is in place is equally critical to achieving Government's policy goals.

In many countries, responsibility for constructing and operating offshore electricity transmission assets falls to either the windfarm developer or to the onshore transmission operator (TO). In the UK, separate Offshore Transmission Owners (OFTOs), which are neither the windfarm developers nor the onshore TOs, take responsibility for the assets under long term licences. The licence guarantees revenues over a 20-year period subject to certain conditions (such as satisfying performance obligations). Therefore, OFTOs represent an investment opportunity in a precisely defined type of asset supported by a strong underlying regulatory regime. This creates a unique asset class, which can be an attractive component of any infrastructure investment portfolio.

The OFTO regime was established in 2009 by Government and Ofgem with the objectives of:

- Delivering fit for purpose transmission infrastructure to connect offshore generation;
- Providing best value for money to consumers; and
- Attracting new entrants to the sector<sup>3</sup>.

Pursuant to the objectives above, competitive tenders have been run for thirteen OFTOs to date, nine of which have been completed and licences granted, four of which are currently running. Beyond this, a significant pipeline of projects will be tendered from 2014 onwards. With strong government support for offshore wind, the pipeline of OFTO investment opportunities could result in billions of pounds of investment. The pipeline is discussed in more detail in Section 3.2 of this report.



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Figure 1.1: Timeline of the development of OFTOs



It is now four years since the first tenders for licences to operate the offshore networks were launched and more than two years since the first licence was awarded: OFTOs are now firmly established as an infrastructure asset class and have attracted over £1.4 billion of investment from a variety of sources.

In order to continue to attract the significant capital investment needed as well as to retain the confidence of the wide offshore transmission stakeholder group, Ofgem commissioned KPMG in 2012 to prepare the report *Offshore Transmission: An Investor Perspective* (published December 2012), which provided an independent overview of the OFTO asset class and an understanding of the investment proposition provided by this new asset class. This report constitutes an update to the original report. Since the original report, Ofgem has granted OFTO licences for a further three projects, with an additional £970 million invested in the OFTO market.

There are wide-ranging ongoing developments in the UK energy and infrastructure sectors. These include reforms to incentives for offshore wind generation through Electricity Market Reform (EMR), ongoing development of the interconnector investment market and the development of more co-ordinated offshore networks. Under EMR, the subsidy regime for renewable energy is shifting from the Renewables Obligations to Contracts for Difference (CfD),

whereby generators of renewable energy are guaranteed a fixed 'strike price' for the energy produced. Although this change in policy brings some uncertainty, there has been extensive consultation by DECC with the market over a long period, aimed at addressing these uncertainties. Furthermore, the published strike prices for offshore wind projects commencing in the period up to 2018/19 suggest there will still be a strong market for offshore wind in the UK. This serves to highlight the importance of securing the continued success of the OFTO asset class.

The report is structured to address three key questions:

- What is an OFTO? Section 2 answers this question by describing the OFTO assets, regulatory framework and licensing regime.
- What are the characteristics of an OFTO investment? Section 3 considers this question by providing an overview of the OFTO investment proposition based on the risks borne by investors and the rewards available; and
- How can OFTOs be invested in? Section 4 responds to this question by outlining the various ways the OFTO investment class might be invested in.

A Frequently Asked Questions section is also included as an Appendix.

*OFTOs are now firmly established as an infrastructure asset class that has attracted over £1.4 billion of investment from a variety of sources.*

## 2 What is an OFTO?

### 2.1 OFTO Assets

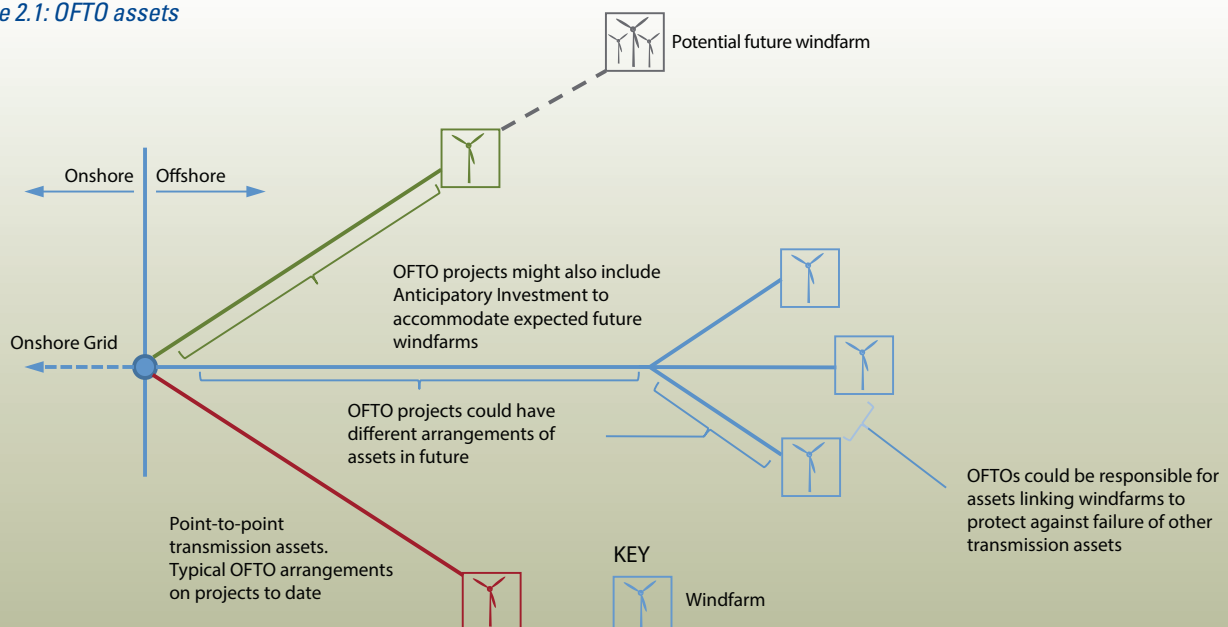
OFTO assets link offshore generation to the onshore network. Whilst there may be some variance from project to project, in terms of physical assets an OFTO will normally have ownership of offshore electricity transmission infrastructure (such as offshore substation platforms, subsea export cabling and onshore cabling), an onshore substation, and the electrical equipment relating to the operation thereof (e.g. transformers and communication equipment)<sup>4</sup>.

The OFTO infrastructure is expected to evolve, as Figure 2.1 illustrates. While connections to date have been point-to-point (i.e. from a single windfarm to an onshore substation), in future, more coordinated connections might emerge, including between windfarms, to provide greater redundancy and power switching options. Likewise, while offshore platforms have typically been monopile constructions to date, jacket and tripod structures may also emerge in time.

In technical terms, the asset ownership/interface boundary points are typically located at:

- i. the incoming low-voltage transformer circuit breaker cable terminations on the offshore substation platform; and
- ii. between the high-voltage busbar disconnectors and the high-voltage OFTO circuit breaker on the onshore substation.

Figure 2.1: OFTO assets



Source: KPMG

<sup>4</sup> In the UK, electricity conveyed at 132kV and above, including in offshore waters, is termed 'transmission'. Where electricity is conveyed below this voltage, it is considered to be 'distribution'.

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## 2.2 OFTO Licences

OFTOs are regulated by Ofgem through licences like other regulated networks in the UK. Ofgem’s role includes determining the appropriate regulatory arrangements and ensuring the smooth functioning of competitive tender processes to award licences for OFTO assets. The OFTO regime also has the support of the UK Government.

Under the competitive tender process, **an OFTO is granted a licence that provides a revenue stream in return for providing transmission services over a specific transmission system.**

In parallel to the process of confirming the licence, the OFTO will either acquire the relevant transmission system from the windfarm developer or begin constructing the asset directly (depending on whether the project is following a “generator build” or “OFTO build” model, described in more detail below). The licence also includes a range of terms that govern the OFTO’s operation (discussed in Section 2.3), including an availability incentive and the requirement to ensure compliance with a set of standard codes and frameworks applicable to the industry. This is similar to infrastructure investments where an investor holds a concession to operate an asset (e.g. a road, cable, or even airport) over a certain period of time.

**The licence is awarded following a competitive bidding process, where the successful bidder is selected based on its revenue request (known as the Tender Revenue Stream or TRS) as well as deliverability of its tender submission.** The TRS reflects the costs of performing the OFTO’s obligations and the costs of financing the investment.

The TRS is determined through Ofgem’s competitive tender process, where bidders take into account a pre-determined set of regulatory arrangements – discussed in more detail below – laid down in the OFTO licence. The licence terms include the amount of the TRS itself (determined after a

Preferred Bidder is appointed following the tender process) and specify how it will evolve over the licence period (e.g. the portion of the TRS that will be indexed to inflation). This limits Ofgem’s regulatory discretion around revenue allowances to much narrower bounds than for traditional onshore regulated energy networks.

Ofgem’s track record of providing regulatory certainty reduces the risk of any unexpected regulatory actions and may provide some comfort to investors around the evolution of the licence framework over time.

### The generator build option

Under the generator build option, the OFTO acquires operational assets from the offshore windfarm developer and is entitled to a stable, 20-year revenue stream in return for operating, maintaining and then decommissioning the transmission assets. Although the revenue stream is only initially applicable for 20 years, this could potentially be extended, depending on the technical life of the asset and investor appetite. An investor may take a view beyond the licence period as to whether the use of the transmission assets, the useful economic life of the windfarm and/or the scrap value of the assets may realise additional value.

For licences awarded in Tender Rounds 1 and 2, 100% of the TRS has been linked to UK Retail Price Index (RPI) inflation. **Ofgem has decided to allow bidders to choose the proportion of the TRS that will be linked to inflation for future tender rounds.** This enables the now mature bidding market to offer enhanced value by adjusting the way it hedges against potential cost increases over the licence period. Consumers also stand to benefit from smaller amounts of OFTO revenue inflating meaning that consumers are less exposed to increases in RPI over the lifetime of the offshore transmission projects. Ofgem is currently determining how ‘biddable indexation’ will operate, having set out its minded-to (i.e. preferred) policy option.

*Ofgem’s track record reduces the risk of any unexpected regulatory actions and may provide some comfort to investors around the evolution of the regulatory framework over time.*

Ofgem expects there to be a wide range of bids regarding indexation of the TRS, and anticipates bids with between 15% and 100% indexation to inflation<sup>5</sup> (see also Section 3.2 and Frequently Asked Questions).

The TRS reflects the operation and maintenance (O&M) costs, insurance costs, SPV management costs, decommissioning costs, taxes and financing costs related to the acquisition of the assets from the windfarm developer (e.g. debt service and hedging costs, as applicable, as well as returns to equity and subordinated debt, if applicable). Since OFTOs need to finance the Transfer Value as well as a range of up-front costs (e.g. bid fees, SPV establishment costs, pre payments of insurance etc.) the amount of capital injected into the OFTO will typically

exceed the initial asset value and will be a significant portion of the TRS.

Separately, Ofgem has made an amendment to **the Market Rate Adjustment (MRA) term in the OFTO licence, which now allows an adjustment to be made to the TRS to take account of public issuance bond spreads**. This enables the use of capital market solutions, such as the bond financing for Greater Gabbard, and helps support institutional investment in OFTO projects.

Figure 2.2 below indicates for a typical generator build project how the different costs make up the overall TRS. Financing costs are the most significant cost (as expected for an infrastructure asset) and operation-related costs account for around 20% of costs<sup>6</sup>.

### The OFTO build option

In the OFTO build option, the TRS awarded to the successful bidder would cover the costs of design, procurement and construction of the OFTO assets as well as the operational and maintenance costs. Under the generator build option, the design, procurement and construction costs incurred by the windfarm developer are included in the asset transfer value paid by the OFTO (subject to Ofgem determining the costs to be efficient and economic). However, under the OFTO build option, these costs are incurred by the OFTO directly. These costs might therefore represent approximately the same proportion of the TRS, as Figures 2.2 and 2.3 below illustrate.

Figure 2.2: Generator Build Tender Revenue Stream Breakdown



Source: Ofgem

Figure 2.3: OFTO Build Approximate Tender Revenue Stream Breakdown



Source: Ofgem

<sup>5</sup> Consultation on the generic Offshore Transmission Owner (OFTO) licence for Tender Round 3 published by Ofgem October 2013

<sup>6</sup> Offshore electricity transmission: a new model for delivering infrastructure, 22 June, p21 and p30 corroborate that financing costs comprised around 80% of the TRS and operating and maintenance costs 20%, NAO (2012)

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## 2.3 Performance Obligations

In addition to a range of financial incentives that encourage OFTOs to perform their duties, **a range of obligations are imposed upon OFTOs by their licences** and by a series of industry codes and standards.

The licence imposes a set of obligations upon the OFTO to operate assets in line with industry best practice. In order to monitor an OFTO's performance, a range of reporting requirements are imposed, including an annual data submission to Ofgem, in line with the Regulatory Instructions & Guidance (the RIGs).

The OFTO must also provide details of any reductions in service that exceed 21 days within 7 days, and must provide a written statement of compliance with best practice if availability is below 80% in a year or below 85% over two years.

Following under-performance of this nature, Ofgem may choose to engage in enforcement action to rectify any ongoing issues which remain unresolved. The ultimate sanction available to Ofgem in the extreme event of continued unsatisfactory performance is revocation of the OFTO licence, which removes the OFTO's revenue stream entitlement.

There are a number of industry codes and standards that underpin the electricity market in Great Britain and dictate performance standards that an OFTO must meet (e.g. around safety and around interface with other generators and other transmission and distribution providers). OFTO licensees are required to design and operate at least to the minimum requirements set out in the NETS Security and Quality of Supply Standard (SQSS)<sup>7</sup>. Many of these codes and standards have a long track record of being applied to onshore electricity grids in the UK and are well

understood across the industry and the investment community.

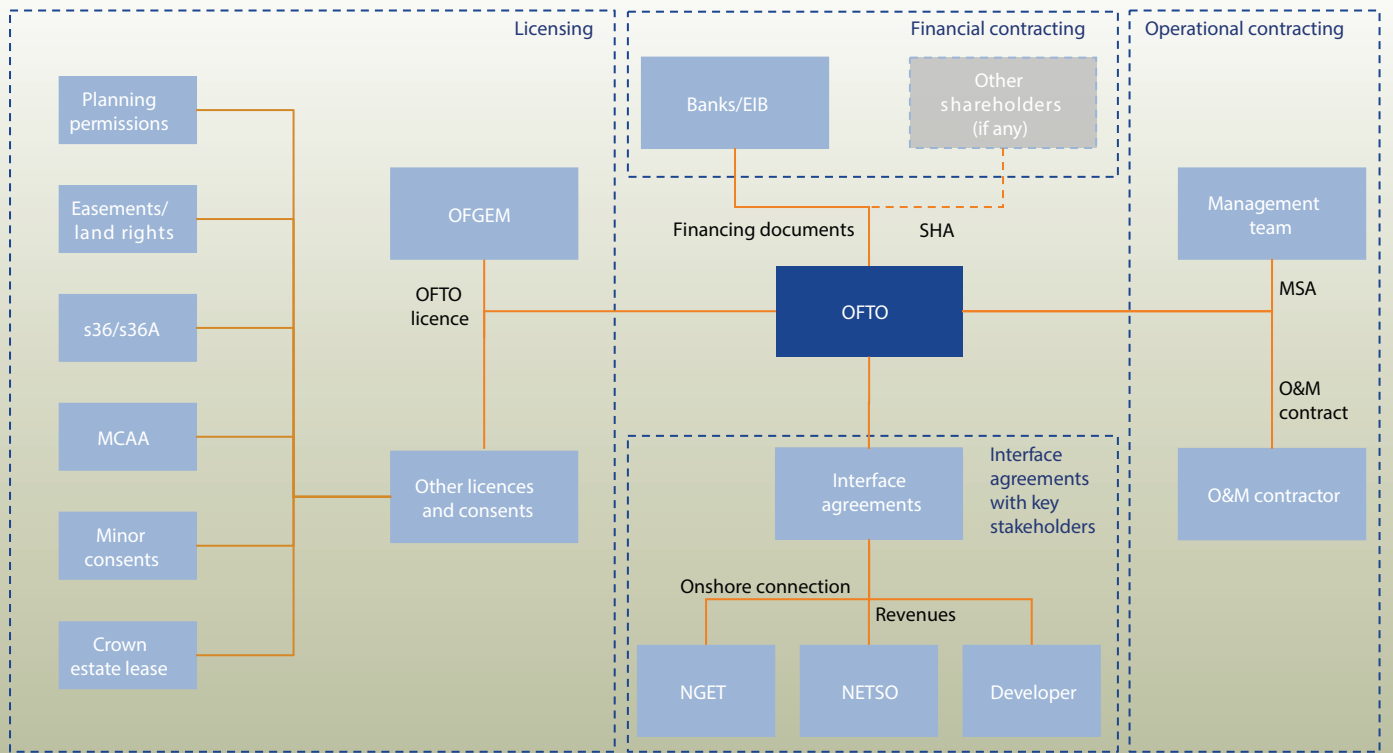
As Figure 2.4 illustrates, OFTOs also operate under the terms of:

- Crown Estate Leases, which provide the 50 year property rights OFTOs need to operate the offshore transmission assets. Offshore generators and OFTOs must have a Crown Estate Lease in order to place/retain their assets on the seabed – these leases are awarded by the Crown Estate, which (via the Energy Act 2004) administers use of the seabed out to 200 nautical miles from the coastline. To date, the Crown Estate has held three tender rounds to allocate offshore wind leases to windfarm developers.
- Interface Agreements, which govern the relationships between the OFTO and the generator (in terms of access rights, provision of services, and decommissioning etc.), the onshore transmission or distribution network and NETSO. Some interface agreements have an ongoing effect on the OFTO, while others only have a transitory impact around the date of the asset transfer.
  - The Transfer Agreement between the OFTO and the generator, which effects the transfer of the transmission assets to the OFTO and which specifies each party's obligations (e.g. transfer of funds), as well as transferring various contracts from the developer to the OFTO. The Transfer Agreement has no ongoing effect on the OFTO, though the transfer of assets, liabilities, warranties, wayleaves and consents transferred under the Transfer Agreement do have an enduring impact on the OFTO over the licence period.
  - The Transmission Owner Construction Agreement (TOCA)

*The licence imposes a set of obligations upon the OFTO to operate assets in line with industry best practice.*

<sup>7</sup> Other relevant industry codes include the Balancing and Settlement Code (BSC), the Connection and Use of System Code (CUSC), the System Operator-Transmission Owner Code (STC), the Grid Code and the Distribution Code and the Distribution Connection Use of System Agreement (DCUSA).

Figure 2.4: OFTO licensing and contractual arrangements



Source: KPMG

between the OFTO and NETSO, which specifies the terms of the connection to the onshore grid, such as the design, construction and operation of the assets, specifications of interface sites, and commissioning processes and consequently applies to the OFTO throughout the licence period (from Tender Round 3 onwards, all projects are required to connect through the national transmission grid).

- A range of consents (e.g. planning, environmental (Marine and Coastal Access Act (MCAA)), easements), which allow the OFTO to perform its transmission related activities. The MCAA consents are required to carry out works on the seashore below the high water mark and to carry out construction work within UK territorial waters. Consents under sections 36 and 36A of the Electricity Act 1989 are required by the developer in order to construct and operate the offshore

windfarm, but some of the obligations imposed may ultimately apply to the OFTO in respect of the transmission assets.

- Contractual arrangements with financiers, other shareholders (via a Shareholders Agreement (SHA)) and with the management team (under a Management Services Agreement (MSA)) and the O&M contractor and other service providers. As part of the tender process managed by Ofgem, the windfarm developers are given the opportunity to offer an O&M solution up to the interested bidding parties. A number of current OFTOs use the windfarm developers for the ongoing O&M. Other bidders have used independent providers for O&M services.

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*In order to monitor an OFTO's performance, a range of reporting requirements are imposed upon the OFTO, including an annual data submission to Ofgem.*

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### 3 What are the characteristics of an OFTO investment?

#### 3.1 Key characteristics of OFTO investments

OFTO assets are characterised by a 20-year inflation-linked revenue stream, simple performance-based incentives, build-in risk protections, a low risk profile (similar to PPP structures and other regulated network businesses) and a strong track record to date.

##### **20-year inflation-linked revenue stream**

Ofgem sets the OFTO's allowed revenue (the TRS) for a 20-year period at the time the licence is granted. Subject to the OFTO meeting its licence obligations, the licence cannot be revoked by Ofgem until the end of the revenue period, and then subject to 18 months notice being given.

The TRS is published in the OFTO's licence when it is granted, and there is no regulatory discretion to revisit this revenue stream over the course of the licence period. Unlike other energy networks regulated by Ofgem, there are no periodic resets of the price control and therefore there is no revenue at risk due to regulatory resetting of prices. In this respect, OFTOs are closer to PPP assets than to regulated utilities. This also means that the OFTO's revenue stream is stable over the licence period (though there are some scenarios where an OFTO may request a revenue adjustment, discussed in more detail below).

The TRS is linked to RPI inflation: for Tender Round 3, bidders are able to choose the proportion of the TRS that will be linked to inflation. Ofgem is currently determining how 'biddable indexation' will operate in practice (having set out its minded-to position), but anticipates that bidders may opt to index between 15-100% of their proposed TRS to inflation<sup>8</sup> (see Frequently Asked Questions for more discussion). Indexation to inflation may provide protection to investors from inflation, but it also means that the cash flows vary as inflation rates change.

Under the generator build model, adopted on all awarded licences to date, the OFTO's 20-year TRS reflects the costs of acquiring, operating and maintaining the assets. The O&M costs are based on the successful bid, while the acquisition price reflects on the assessment by Ofgem of the economic and efficient costs of developing and constructing the transmission assets incurred by the windfarm developer. Because final construction costs are not known when the tender process is run, Ofgem requires all bidders to assume an Indicative Transfer Value (ITV) when calculating their TRS submissions to ensure consistency of approach. The ITV is updated by Ofgem once the assets are fully constructed; the TRS is adjusted for this revised Final Transfer Value (FTV).

The TRS is ultimately effectively paid by consumers as part of their power bills. This is funnelled through the National Electricity Transmission System Operator (NETSO), a role currently held by National Grid Electricity Transmission (NGET). NGET is a separately licensed and regulated entity, subject to a number of ring fencing provisions including a requirement to maintain an investment grade credit rating. NGET is currently rated A3/A-/A reflecting its relatively low business risk profile.

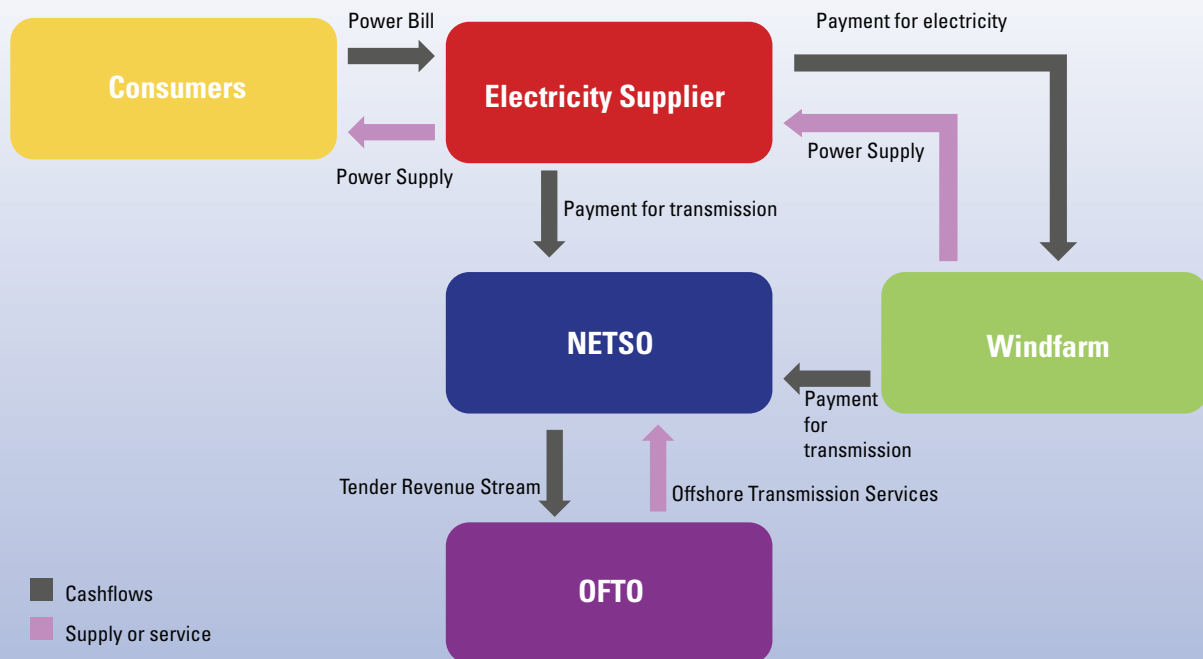
It is critical to note that the consequence of this arrangement is that the OFTO does not rely on the windfarm for any of its revenue.

<sup>8</sup> Consultation on the generic Offshore Transmission Owner (OFTO) licence for Tender Round 3 published by Ofgem October 2013



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Figure 3.1: Simplified Illustration of Cashflows and Services between Consumers, NETSO, Windfarm and the OFTO



Source: KPMG

### Simple, Performance Based Incentives

As with other regulated utilities, OFTOs are subject to a system of incentive regulation which rewards or penalises OFTOs for good or bad performance respectively. The incentive regime applied to OFTOs is somewhat simpler than the regimes applied to other utilities – there are relatively fewer and simpler incentive mechanisms in place for OFTOs. OFTOs are incentivised to perform as efficiently and effectively as possible through a range of mechanisms:

- **An availability incentive**, which awards bonus payments or imposes penalties if the OFTO is unable to achieve an availability target (which has usually been set to 98% on projects to date) – further details are discussed below.
- **TRS indexation**, which allows the TRS to be preserved in real terms over the lifetime of the licence, as a proportion of costs is typically

assumed to increase in line with inflation. Ofgem has decided to allow bidders to index a proportion of the TRS to inflation for Tender Round 3 onwards, the size of which will depend on their capital structure.

- **Competitive tender process:** bidders must submit the most competitive TRS and service proposal they can achieve to give themselves the best chance of winning the licence.
- **Fixed TRS for 20 years (in real terms)**, subject to a limited range of adjustment mechanisms: if the OFTO is able to outperform its own bid assumptions then it will be able to provide higher returns to equity investors, e.g. through operational efficiency or debt refinancing. For gains from debt refinancing, Ofgem has decided that it will introduce a gain sharing mechanism between OFTOs and consumers. It is currently

determining how the gain sharing mechanism will operate, and has set out its minded-to position of sharing refinancing gains 50:50 between OFTOs and consumers<sup>9</sup>. A fixed TRS also incentivises bidders to include a prudent amount of headroom in their bids, recognising there is uncertainty around costs over the 20 year period.

- **Level playing field for different types of financing**, including capital market solutions, achieved through adjustments to the TRS to take account of underlying market rates and public issuance bond credit spreads.

#### The availability incentive

OFTOs are subject to an availability incentive mechanism, whereby if availability of the transmission infrastructure decreases below a target level the OFTO is subject to a penalty in the form of lower allowed revenue. Equally, however, if the OFTO can achieve availability in excess of the target, bonuses in the form of additional revenue will accrue. The target level is measured against the lower of the Transmission Entry Capacity (TEC) of the connecting windfarm and the Normal Capability Limits (NCL) of the transmission system as stated in the OFTO's agreements with the System Operator.

Similar availability payments are known from the PPP market.

The mechanism is relatively simple and operates as follows:

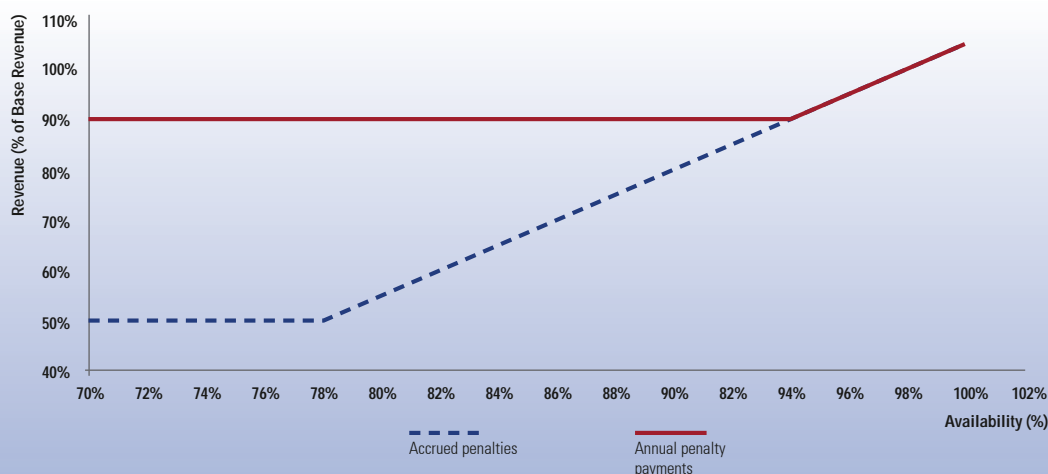
- Penalties up to a maximum of 10% of base revenue are imposed if availability drops by up to four percentage points below the target (e.g. if the target is 98% and availability falls to 94% or lower).
- If availability drops by more than four percentage points below the target, penalties are accrued up to a maximum of 50% of base revenue. These penalties are imposed over a period of up to five years: the maximum revenue reduction in any given year is 10% of base revenue.
- Rewards up to a maximum of 5% of base revenue are awarded if availability exceeds the target. These rewards are immediately available to investors under Round 2 (Transitional Regime) and Round 3 projects.
- For most projects to date the availability target has been set at 98% by Ofgem with existing licensees performing well above this level<sup>10</sup>.

Availability is measured against the capacity of the transmission infrastructure and is not a simple average across the 12 months of

the year because some months are afforded greater weight in the calculation recognising that these are months where offshore wind generation is likely to be higher. This means that reduced availability during periods of anticipated lower generation incur smaller penalties for the OFTO; scheduling planned maintenance of OFTO assets during these periods is one way OFTOs can maximise their performance against the availability incentive. Similarly, planning outages in line with generator's outage plans will also help to avoid undue penalties.

Round 3 introduces a capacity weighting mechanism to the availability incentive. This weights larger capacity outages more heavily than smaller capacity outages. OFTOs can maximise their performance against the availability incentive by planning their maintenance to enable them to take smaller capacity outages.

Figure 3.2: Illustration of Availability Incentive Mechanism



Source: KPMG

<sup>9</sup> Source: Ofgem

<sup>10</sup> See FAQ for further discussion.

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### Built-in Protections Against Risks

Ofgem has designed the regulatory regime so that OFTOs can manage the risks that they are best placed to manage and mitigate. In particular, since the TRS is fixed for a 20-year period (in real terms), the OFTO bears the risk (and gets the reward) of costs rising (falling) above (below) their expectations (i.e. the assumption submitted as part of the bid) and has a strong incentive to manage these costs as efficiently as possible<sup>11</sup>. At the same time, recognising that some costs are beyond OFTOs' control, and that there may be unforeseen events which impact on the OFTOs, Ofgem has included a range of mechanisms in licences which adjust the TRS in particular

circumstances. These risk protection mechanisms are shown below in Figure 3.3.

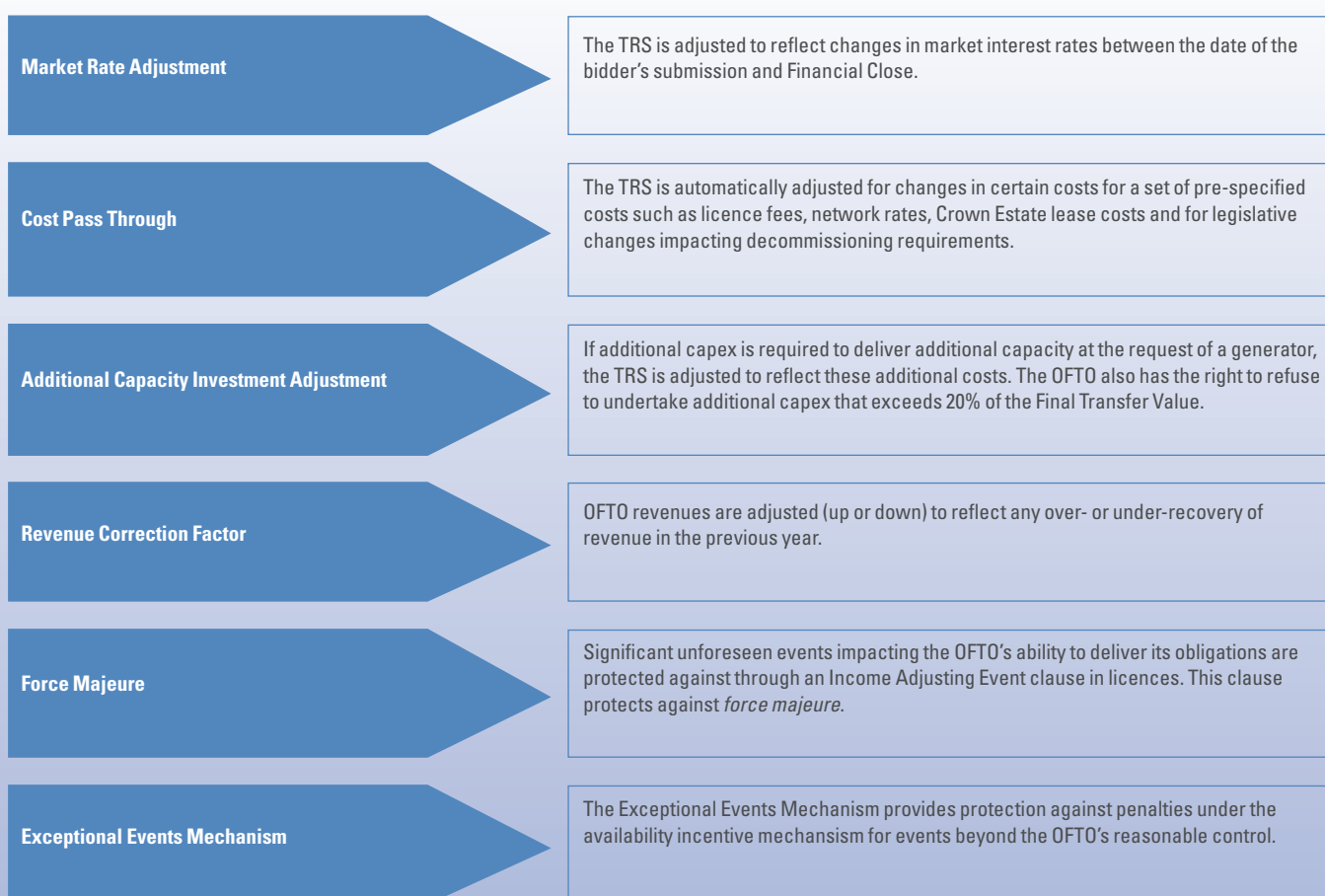
### Low Risk Profile

Taking into account the risk mitigation mechanisms inherent in the regulatory framework, Table 3.1 summarises the key risks around offshore transmission and which party bears those risks.

While investments in OFTOs are not risk-free, relatively few risks are borne directly by the OFTO and most of those risks are relatively small and/or can be passed on to third parties depending on the risk appetite of the OFTO investor.

The description of risks provided in Table 3.1 applies to the existing regulatory framework. Ofgem has recently announced a number of changes to the regulatory regime and is currently determining how these will operate. Some of these changes may affect the risk profile of the investments in the future, and these are highlighted in Table 3.1 (where relevant).

Figure 3.3: Risk Protection Mechanisms



Source: KPMG

<sup>11</sup> Ofgem will be implementing a refinancing gain sharing mechanism for Tender Round 3 projects and future tender rounds. See section 3.2 below and Frequently Asked Questions for further discussion.

Table 3.1: Offshore transmission risk allocation

Risk	Description	Risk allocation and mitigation
<b>Construction risk</b>	Cost overruns during construction, or failure to complete the assets on time (or at all)	<p><b>Risk is borne by the windfarm developer under the generator build option</b>, whereby the windfarm developer has responsibility for constructing and commissioning the assets.</p> <p>The risk is <b>borne by the OFTO under the OFTO build model</b>, whereby the OFTO has responsibility for constructing and commissioning the assets.</p> <p>The <b>windfarm developer decides whether to opt for a generator build or OFTO build model</b>, and bidders decide which projects suit their risk appetite.</p>
<b>Demand risk</b>	<p>Windfarm shuts down or generates lower amount of power than expected</p> <p>Higher or lower than expected demand for transmission capacity</p>	<p><b>So long as the OFTO makes the transmission assets available the OFTO is entitled to its revenue stream</b>, and is not exposed to the performance of the windfarm.</p> <p>The OFTO is under no obligation to offer terms to undertake additional capex to meet higher demand if the capex would exceed 20% of the original investment.</p> <p>No stranding risk is borne by the OFTO. If windfarm shuts down before end of OFTO revenue period, revenues for transmission services continue to be paid.</p>
<b>Operational risk</b>	<p>Unexpected asset failure due to technical reasons increase cost</p> <p>An unexpected increase in the cost of operating and maintaining the transmission infrastructure</p>	<p><b>Risk is borne by the OFTO, and that a failure to make assets available may result in penalties</b> under incentive mechanism (up to 10% of base revenue p.a.).</p> <p><b>The OFTO can mitigate this risk through maintenance contracts and insurance</b>, passing off some of the risk to other parties. Due diligence on assets prior to acquisition in the generator build model can also help to ensure fit-for-purpose assets are transferred to the OFTO.</p> <p><b>The exceptional events mechanism manages risks which impact availability</b> and can be demonstrably proved to be outside the OFTO's reasonable control.</p> <p><b>Risk borne by the OFTO that higher costs may decrease equity returns.</b></p> <p><b>The OFTO can mitigate this risk through medium term (5–10 year) fixed price O&amp;M contracts</b> with credible third party contractors.</p> <p><b>Linking contracts to RPI inflation</b>, as with the TRS, can also help to mitigate the risk of above inflation cost increases.</p>
<b>Force majeure</b>	Force Majeure events lead to increased costs and decreased availability	<p><b>The OFTO licence includes an Income Adjusting Event clause which protects the OFTO against force majeure.</b></p> <p>Since the System Transmission Owner Code (STC) definition of force majeure includes changes to industry codes (such as the STC, Grid Code or SQSS) the OFTO is protected against code change risk, albeit only for costs above a specified threshold level (which is dependent on project size and currently varies between £500,000 and £1 million).</p>
<b>Counterparty risk</b>	Risk of non-receipt of TRS	<b>TRS is received from NETSO, a ring fenced subsidiary of National Grid</b> , which is regulated by Ofgem and with an investment grade credit rating.
<b>Low inflation (or deflation) risk</b>	Lower than expected inflation reduces interest coverage ratios	<p><b>The OFTO bears the risk of inflation being lower than expected.</b> If revenue does not increase as quickly as expected, this may be detrimental to interest cover and other debt service ratios.</p> <p>Ofgem has decided to allow bidders to choose the proportion of their TRS that will be linked to inflation, which reduces the need for bidders to employ hedging agreements with financial intermediaries.</p>
<b>Financing costs</b>	Interest payable by OFTO may increase or decrease over project life	<p><b>The OFTO bears the risk of financing costs being higher than expected</b>, and gains from re-financing will be shared between the OFTO and the consumers. Re-financing at lower cost offers OFTOs potential upside, with the gains being shared.</p> <p>To mitigate against downside risk an OFTO can hedge its financing costs.</p>
<b>Tax risk</b>	Tax payable is higher or lower than expected over project life	<b>Risk borne by OFTO:</b> Any unfavourable change in tax legislation over the 20-year period is for the OFTO's account (and any favourable change, for the OFTO's benefit). Because there are no regular pricing reviews, there is no mechanism for the TRS to be adjusted to reflect changes in tax legislation.
<b>Change of Law</b>	Change in law imposes additional (or reduces) costs of OFTO	<p><b>Licence includes a clause which means some pre-specified changes in law</b>, such as in respect of decommissioning obligations, <b>are passed-through to the TRS.</b></p> <p>General changes in law, where not deemed an Income Adjusting Event, are borne by OFTO.</p>
<b>Change in Government policy</b>	Government decide that Offshore Wind is no longer a high priority	The OFTO is protected against this risk because a licence has been issued with a fixed revenue stream for 20 years. The licence can be revoked only if the OFTO is found to be in breach of its licence conditions.

Source: KPMG

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### Track Record of Investments

The experience to date has demonstrated that the OFTO asset class represents an investable proposition. Nine projects have now reached financial close, several more have had tenders run and Preferred Bidders appointed, and a very significant amount of capital (more than £1.4 billion) has been invested in the OFTO projects to date by a variety of debt and equity investors of different types and of different geographical backgrounds. £970 million of this has been invested in 2013 alone. The fact that this has been achieved during volatile and uncertain economic and financial conditions demonstrates the bankability of OFTOs.

The latest status of projects to date (under Tender Rounds 1 and 2) are summarised below. The projects have increased in size over time: Projects in Round 1 had an average transfer value of £127 million; Projects in Round 2 are expected to have an average transfer value of approximately £350 million. The TRS on projects which have reached financial close to date has been in the range of £5 million-£35 million per annum. This figure would be expected to increase broadly in line with the increases in the Transfer Values of future projects.

The £1.4 billion invested to OFTO projects to date has come from a variety of sources, including:

- Equity investors, including infrastructure funds and strategic investors from Europe, Asia and Australia;
- The European Investment Bank (EIB), which has committed over £1 billion to the OFTO assets;
- A wide range of commercial banks, such as Barclays, ING, Lloyds, BNP Paribas, Santander, National Australia Bank, as well as the introduction of investment from Japanese banks such as SMBC, Mizuho, BTMU, SMTB, the Development Bank of Japan and Shinsei; and
- The introduction of investment from Japanese banks, such as

SMBC, Mizuho, BTMU, SMTB, the Development Bank of Japan, MUFG and Shinsei; and

- Capital markets, such as the bond financing recently delivered on Greater Gabbard (also benefiting from the EIB's Project Bond Credit Enhancement (PBCE) product)<sup>12</sup>.

The fact that the funds have been provided by such a diverse investor base, which continues to bid for assets as they become available, demonstrates investors' appetite for OFTO investments and the bankability of this asset class.

### Comparable to PPP structures and other regulated network businesses

#### Comparison to PPP structures

OFTOs provide a long term, stable, RPI-linked revenue stream on a low risk investment and are capable of generating positive cashflows to investors from early in the project's operating phase. In this respect OFTOs have some parallels with projects let under the Private Finance Initiative (PFI) or Public Private Partnerships (PPP) as noted by Fitch<sup>13</sup>:

*"... The day-to-day risk profile of OFTOs is no higher than most UK private finance initiative (PFI) projects, which also use an availability-based revenue structure..."*

OFTO assets have many of the same benefits as traditional PPP assets, for instance long term availability-based revenue as well as an ability to pass through certain costs (as described earlier). However, there are a number of key differences between the OFTO asset class and typical PPP assets:

- PPP assets normally involve a construction element, making them more risky in that respect than OFTOs under the generator build model.
- For PPP assets only a proportion of the revenue stream (or unitary charge) is normally indexed to RPI inflation. Normally, the proportion of the revenue indexed matches the proportion of total

*OFTO assets have many of the same benefits as traditional PPP assets. For instance, long term availability-based revenue as well as an ability to pass through certain costs.*

<sup>12</sup> See section 4.2 for further discussion.

<sup>13</sup> UK OFTOs – Sound Credit Profile Expected Subject to Testing of Regulation, November 14, Fitch (2011). Recent reports from Fitch have reiterated similar messages for OFTOs, e.g. 2014 Outlook: Energy Infrastructure EMEA, December 10, Fitch (2013).

Table 3.2: Summary of Projects to Date

Tender Round	Project	Transfer Value	Annual Revenue	Selected Bidder	Status
1	Robin Rigg East and West	£65.5m	£6.5m	Transmission Capital Partners <sup>14</sup>	Licence granted (2 March 2011)
1	Gunfleet Sands 1 & 2	£49.5m	£6.0m	Transmission Capital Partners	Licence granted (19 July 2011)
1	Barrow	£33.6m	£4.8m	Transmission Capital Partners	Licence granted (27 September 2011)
1	Walney 1	£105.4m	£11.0m	Blue Transmission <sup>15</sup>	Licence granted (21 October 2011)
1	Sheringham Shoal	£193.1m	£17.9m	Blue Transmission	Licence granted (27 June 2013)
1	Ormonde	£103.9m	£10.6m	Transmission Capital Partners	Licence granted (10 July 2012)
1	Greater Gabbard	£317.0m	£24.8m	Equitix, AMP Capital and Balfour Beatty	Licence granted (26 November 2013)
1	Thanet	£163.1m*	n/a	Balfour Beatty	Preferred Bidder appointed
1	Walney 2	£109.8m	£11.8m	Blue Transmission	Licence granted (26 September 2012)
2a	London Array	£459.0m	£35.0m	Blue Transmission	Licence granted (10 September 2013)
2a	Lincs	£281.6m*	n/a	Transmission Capital Partners	Preferred Bidder appointed
2a	Gwynt y Môr	£346.0m*	n/a	Equitix and Balfour Beatty consortium	Preferred Bidder appointed
2b	West of Duddon Sands	£296.2m	n/a	n/a	Invitation to Tender (ITT) stage underway

Source: KPMG.

\* Transfer values are Ofgem's estimates for projects where a licence has not yet been granted.

14 Consortium comprising Transmission Capital, International Public Partnerships and Amber Infrastructure Group.

15 Consortium comprising Macquarie Capital Group, Barclays Infrastructure Funds Managements and Mitsubishi.

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## Regulated Onshore Networks

Investors in regulated UK utilities such as onshore electricity and gas transmission and distribution, water, rail and airports get a regulated rate of return on the regulated asset base (RAB). The rate of return (or Weighted Average Cost of Capital (WACC)) is periodically reset by an economic regulator, typically for a fixed period of time (the price control period) and according to well understood methodologies. RAB x WACC is part of the revenue entitlement of the regulated utility, along with allowances for operating costs, depreciation and tax. The rate of return achieved by investors depends heavily on the WACC set by the regulator, but can be enhanced by outperforming the regulator's assumptions in other areas, e.g. operating the business more efficiently than expected. Returns to investors can also be enhanced by performing strongly against various incentive mechanisms, typically focused on customer satisfaction or on performance against environmental targets, triggering bonus payments to the regulated utility (in the form of higher allowed revenue).

## Ownership Unbundling

Transmission system operators (TSOs), including OFTOs, have to be certified as ownership unbundled in accordance with the Electricity Act 1989. Ownership unbundling is the separation of gas and electricity transmission (ownership and operation) from generation, production and supply.

Information on Ofgem's procedure for processing applications for certification under the ownership unbundling requirements is available on the Ofgem website.

Ofgem encourages interested parties to seek legal advice on the meaning and application of the requirements.

All current OFTOs have been successfully certified.

costs represented by any elements of the contractors' underlying costs that are not fixed (to achieve a natural hedge). However, bidders can opt to index their preferred proportion of the TRS to inflation depending on their capital structures.

- In the event of termination, PPP investors may be entitled to compensation. For OFTOs, however, this is not required, as the revenue stream continues to be received even if the windfarm ceases to be operational (so long as the OFTO continues to meet its licence requirements).
- OFTO tender process is not run by the ultimate counterparty.
- The primary user of the OFTO assets is neither the counterparty nor tender process administrator.
- Obligations for OFTOs are dictated through licences and associated codes rather than through contract and have different governance mechanisms.

Given the above, the expected rate of return to OFTO investors may be lower than the returns available to PPP investors (in particular on projects where the latter bear construction risk). However, where PPP investors do not bear construction risk (e.g. on investments in already operational assets), one might expect the return to OFTO investors to be higher than for a PFI asset class, which is relatively more mature. However, other

factors and considerations will also be relevant to the expected rate of return, such as whether the bidder elects to follow the OFTO build option versus the generator build option.

The UK National Audit Office (NAO) has suggested the equity IRR on PPP projects since mid 2009 has been in a range of 8–9%<sup>16</sup>, whereas the rate of return requested by bidders for OFTO projects as of December 2012 (Tender Rounds 1 and 2a) have so far been in the range of 9-10%, according to InfraNews (10-11% according to the NAO, nominal, post-tax<sup>17</sup>).

The equity contributed to Round 1 and 2 projects usually comprises pin point equity (i.e. a small amount of ordinary share equity) and shareholder subordinated debt, though alternative solutions – including 100% equity financing – have also been adopted.

Returns to debt investors in OFTOs and PPP projects can also be compared. Publicly available information on projects that have reached financial close suggests margins on loans to OFTOs have typically been around 200-220 bps (over LIBOR) with tails around 12 months (see table below). Data compiled by KPMG suggests PPP projects have typically had similar loan arrangements, i.e. spreads have been between 200-300 bps, though tails have been slightly longer (at around 18-36 months). The NAO has suggested that the financing

<sup>16</sup> *Offshore electricity transmission: a new model for delivering infrastructure*, June 22, p29, NAO (2012)

<sup>17</sup> See *UK OFTOs: The Challenges of Meeting the Sectors £17 billion capex requirements*, 30 March, InfraNews (2012) and *Offshore Electricity Transmission: A New Model for Delivering Infrastructure*, June 22, p10, NAO (2012)

<sup>18</sup> *Offshore electricity transmission: a new model for delivering infrastructure*, 22 June, p27 which estimated that the premium over gilts on OFTO loans were 210 – 220 bps, while PPP loans had had premiums of 250 – 300 bps. The NAO suggested the premium on PPP projects may have been slightly higher due to the construction risks present on those projects which are absent from the OFTO projects considered, NAO (2012)

Table 3.3: Example OFTO debt financing terms from Tender Rounds 1 and 2<sup>19</sup>

Project	Debt amount	Debt type	Gearing	Tenor/maturity	Margin
Greater Gabbard	£304m	Bond issuance + EIB credit enhancement	87%	19 years	4.137% coupon (125 bps spread over UK gilts)
London Array	£419m	Term loan + £3m liquidity facility	Not available	19 years	Libor + 220 bps
Sheringham Shoal	£191m	Term loan + £6m liquidity facility	91%	19 years	Libor + 220 bps
Walney 2	£109m	Term loan + £5m liquidity facility	87%	19 years	Libor + 240 bps
Robin Rigg	£67m	Term loan	84%	20 years	Libor + 200 bps
Gunfleet Sands 1&2	£50m	Term loan	84%	19 years	Libor + 195 bps
Walney 1	£105m	Term loan	85%	19 years	Not available
Barrow	£35m	Term loan	81%	17.5 years	Libor + 220bps

Source: InfraNews website

Note: Figures are based on year 1 data and are approximate; Barrow's licence was for 18.5 years only

### Public private partnership

UK PPP is a well understood, liquid and mature asset class, with a two decade long track record of successfully delivering infrastructure projects (more than 800 deals have been signed) with demonstrated investor acceptance of the risk profile (debt and equity) as well as the project structure.

In a typical PPP structure, a government/public sector entity contracts with a private sector project company (typically a special purpose financing vehicle) that takes on the obligation to design, build, finance, maintain and operate an asset (e.g. a hospital or school building) for a fixed period of time (typically 30 years post construction) and to a pre-defined set of performance standards.

In return for discharging its obligations under the PPP contract, the private sector counterparty receives from the public sector/ government counterparty, a pre-defined payment stream (typically an annual 'service' payment in monthly instalments and which is set for the term of the agreement by upfront competitive bidding) and can suffer deductions and/or penalties for noncompliance with the required contractual performance standards.

It is important to note that in a typical PPP project, the payment to the private sector party does not depend on the level of usage of the asset by the public sector/ government counterparty (e.g. the number of patients in a hospital), but rather on the private sector party having made the asset available for use by the public sector/ government counterparty. Such PPP projects are therefore termed 'availability' type PPP projects as opposed to a PPP project in which the payment made to the private sector counterparty may depend on the level of asset usage (e.g. on a toll highway).

terms achieved by OFTOs to date were "competitive in the prevailing environment for medium to long term bank lending" and slightly lower than for PPP projects over the same period<sup>18</sup>.

### Comparison to other regulated network businesses

The regulated nature of the OFTO revenue stream and the type of assets (electricity transmission) mean that OFTOs are also at least partly comparable to 'traditional' regulated energy networks such as onshore electricity and gas transmission and distribution networks such as National Grid Electricity Transmission (NGET), Scottish Power Transmission Limited (SPTL) and Scottish Hydro Electric Transmission Limited (SHETL). Importantly, they are also regulated by Ofgem with the track record of regulatory history and practice even if the role of the regulator and regulatory discretion is more limited in the case of OFTOs. There are a number of important differences between OFTOs and traditional regulated network businesses including:

- Regulated network businesses typically have to undertake significant ongoing capex programmes to expand and reinforce their existing networks. This means network businesses bear construction risk and may be cash flow negative for many years. OFTOs, however, may or may not bear construction risk, depending on whether a generator build or OFTO build model has been pursued by the windfarm developer.
- Regulated networks are not exposed to the single asset risk in the same

way as an OFTO; failure by a single asset may have a much smaller effect on a network business comprising numerous assets than an OFTO, especially if the network is resilient to the asset failure.

- The absence of periodic price controls means that the OFTO does not face regulatory risk in the same way as the onshore networks. This also means that the OFTO cannot benefit from regulatory resets to accommodate significant changes in financial or operating costs.
- Finally the scale of operations means that most of the regulated utilities are much larger than OFTOs.

Given there are some factors that might make onshore regulated energy network businesses both riskier and less risky than OFTOs and that there are other differences between the investment propositions, it is difficult to assess how the rate of return on OFTOs should compare to the returns achieved on traditional regulated network businesses.

The returns on OFTOs (to date) appear broadly similar to returns on onshore energy network businesses: as noted earlier, the rate of return requested by bidders for OFTO assets has been around 9-11 % in post tax nominal terms, which is broadly in line with the 10-11 % equity IRRs that might be targeted by equity investors in traditional regulated network businesses<sup>20</sup>.

<sup>19</sup> Figures are from external sources and are not based on Ofgem data.

<sup>20</sup> *Offshore electricity transmission: a new model for delivering infrastructure*, p10, NAO (2012)



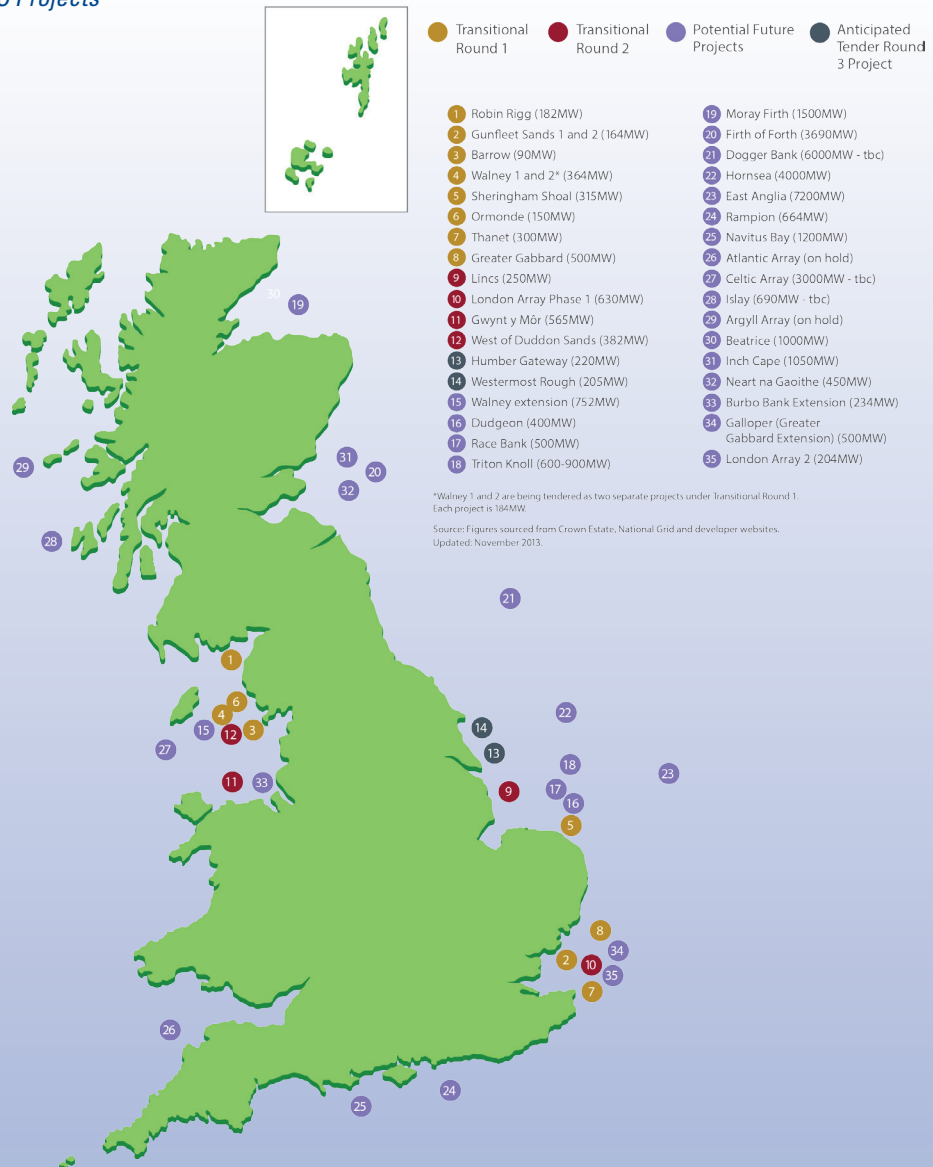
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### 3.2 Evolution of the regulatory regime

As outlined in Figure 3.4 below, there is a pipeline of future projects worth billions of pounds, representing significant opportunities for further investment in the asset class. The regulatory regime governing these and other future projects will continue to evolve and several regulatory changes have already been announced by Ofgem. This section

summarises some of the key regulatory changes that have been announced and/or are being decided on and how they may affect the investment proposition of OFTO assets.

Figure 3.4: Potential Future OFTO Projects



Source: Ofgem

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*The potential expansion of the role of an OFTO might make the investment proposition more attractive to certain types of investors.*

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### **Development of the OFTO build option**

As described above, in future Tender Rounds, windfarm developers may choose to follow the OFTO build option, whereby OFTOs would become involved in the procurement and construction of the transmission infrastructure rather than just the operation and maintenance.

Table 3.4 summarises the responsibilities of the OFTO under the OFTO build and Generator build options. Compared to the Generator build option, successful bidders under the OFTO build model would also take responsibility for:

- Detailed design work;
- Procurement of suppliers;
- Negotiation of construction contracts; and
- Delivering the build programme.

The OFTO would need to pay the developer for the economic and efficient costs of any assets transferred (such as preliminary works<sup>21</sup>).

The OFTO's revenue stream would only commence once the assets were completed. Revenues would then be earned for a fixed period.

The number of OFTO build projects that emerge over time will depend on the preference of windfarm developers (which are likely to include a diverse range of companies like Centrica, DONG, EDP Renovaveis, E.ON, Mainstream Renewable Power, RWE, Scottish Power, SeaEnergy, SSE, Statkraft, Statoil and Vattenfall). If a developer decides to ask Ofgem to appoint an OFTO to construct the assets, Ofgem will run a tender exercise (see Section 4) and prospective OFTOs will decide whether to bid or not – no party or existing OFTO will be required to take on construction risk that it does not wish to bear.

There may also be a pipeline of projects available to OFTOs that windfarm developers feel less willing to undertake; while the direct transmission link between the onshore transmission network and the offshore windfarm will be of obvious significance to the windfarm developer, a range of wider works may also need to be undertaken, but may be of lesser significance to windfarm developers. For example, interconnecting or secondary transmission links which are of benefit to several windfarms rather than for the benefit of a single windfarm may be candidates for OFTO build.

Given the difference in roles under the OFTO build option, an OFTO may have some additional opportunities, and also bear some additional risks around construction, interface/design and procurement, that an OFTO does not face under the generator build option.

There may also be additional opportunities for the OFTO to add value and enhance returns under the OFTO build model. For example, since the OFTO would provide its own detailed design of the assets to a specification (e.g. capacity) provided by the developer, innovative designs enabling the specification to be delivered at lower cost or to a higher standard could give a bidder an advantage over its competitors. Similarly, an ability to negotiate with and manage suppliers and contractors could enhance a bidder's submission.

The returns available to OFTO investors could be expected to evolve in line with the risk profile of the opportunity. All else being equal, the investment proposition under an OFTO build scenario might evolve closer to traditional PPP projects, most notably by allowing the OFTO to take on construction, design and procurement roles typically also taken on by PPP investors. Returns available to debt and equity investors in an OFTO build project

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<sup>21</sup> Preliminary works might include, for example, acquisitions of planning permissions, consents, wayleaves, easements, leases, topography and seabed surveys, environment and archaeological surveys and impact assessments.

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may also more closely resemble those available to PPP investors.

The potential expansion of the role of an OFTO might make the investment proposition more attractive to certain types of investors. For example, contractor equity (where the equity bidder is also the construction contractor) might view the equity investment as an additional area to earn returns (i.e. over and above contractor profit margin), as emerged in the PFI market over time. Involvement in construction might also introduce the possibility of the involvement of institutions such as export credit agencies and development banks/agencies (e.g. the European Investment Bank (EIB), Nippon Export and Investment Insurance (NEXI), Japan Bank for International Cooperation (JBIC), etc) that contractors may approach to finance debt.

**Table 3.4: Potential OFTO Responsibilities under the OFTO build option versus the generator build option**

Activity	Generator Build	OFTO Build
Obtain connection agreement	Generator	Generator
High level design	Generator	Generator
Preliminary works	Generator	Generator
Detailed design work	Generator	OFTO
Procure suppliers	Generator	OFTO
Negotiate construction contracts	Generator	OFTO
Deliver the build programme	Generator	OFTO
Operate	OFTO	OFTO
Maintain	OFTO	OFTO
Decommission	OFTO	OFTO

Source: KPMG

### Potential advantages of an OFTO build option

Whether developers opt for the OFTO build model depends on several factors and considerations, but there are a number of potential advantages of this option:

- The developer will not need to finance the construction of the offshore transmission infrastructure, freeing up balance sheets to finance windfarm construction or other projects. This financing benefit may be particularly valuable if balance sheets become more stretched in the future if a single developer develops multiple, large projects simultaneously;
- The developer may be able to project finance their windfarm without the complication of having to sell off the transmission assets at a later date;
- Given that around 8% of the costs spent by windfarms on assets transferred to OFTOs so far have been disqualified by Ofgem<sup>22</sup>, there may be some financial benefit to the windfarm developer off an OFTO build exercise as the windfarm would no longer face this risk;
- The combination of design, construction, long-term operation and financing might deliver lower cost outcomes overall; and
- It creates the opportunity to bring in further transmission expertise to the process.

An OFTO build exercise may also, depending on the regulatory framework, insulate the windfarm developer from delays in the construction and installation of the cables, though Fitch has suggested that outsourcing transmission asset construction to a third party may be a credit negative for windfarms<sup>23</sup>.

### Other regulatory developments

As discussed above, Ofgem has announced a number of regulatory changes that will apply to future generator build tender rounds. Ofgem is currently determining how these will work and has set out its initial positions as follows:

- **Biddable indexation:** Future bidders will be able to choose the proportion of their TRS that will be indexed to RPI inflation. Ofgem expects that bidders may choose to index between 15–100% of the TRS to RPI inflation, and is currently determining how the licence drafting will be updated to implement this amendment and how to evaluate bids with different proportions of indexed revenue.
- **Debt refinancing gain sharing:** Gains from refinancing of debt will be shared, either through an annual adjustment to revenues over the remaining life of the default 20-year revenue period or as a lump sum. Ofgem's minded-to position is that gains will be shared 50:50 between OFTOs and consumers, and is currently determining the parameters necessary for calculating the refinancing gain as well as the licence drafting.
- **Availability incentive:** A capacity weighting mechanism will be introduced to weight outages based on the proportion of capacity available during a particular outage, with higher capacity outages penalised more heavily. This is intended to incentivise OFTOs to take smaller capacity outages where economic to do so. Ofgem is currently determining how this will be reflected in the licence drafting and what the detailed parameters of the mechanism will be.
- **Financial security:** the licence requires OFTOs to procure financial

security at least 4 years and 3 months before the end of the licence term, maintained until the end of the licence term. Ofgem have advised that the security should be lodged with an institution with a credit rating equivalent to at least "A-" in a country with a credit rating of at least "A". Starting from Tender Round 3, Ofgem are proposing that the security should be increased for each year it is in place in line with base transmission revenue.

- **Interest during construction (IDC):** An allowance is made for the cost of financing the development and construction of electricity transmission assets under the generator build model. IDC is currently treated using a cap approach, whereby a cap is published for all projects reaching Final Investment Decision (FID). The cap is currently set at 8% (on a nominal pre-tax basis) for projects that reach FID from 1 April 2014. The cap will be reviewed annually, although revisions will not affect projects that reached FID in the financial year prior to the revision. This mainly affects the developer as it determines the level of IDC that it is remunerated for via the Transfer Value. OFTOs are compensated for any change in the Transfer Value through the TRS.

In considering some of these changes, particularly such as biddable indexation of the TRS and the refinancing gain share mechanism, it is important to be mindful of how lessons from PPP and other sectors might be appropriately applied to OFTOs.

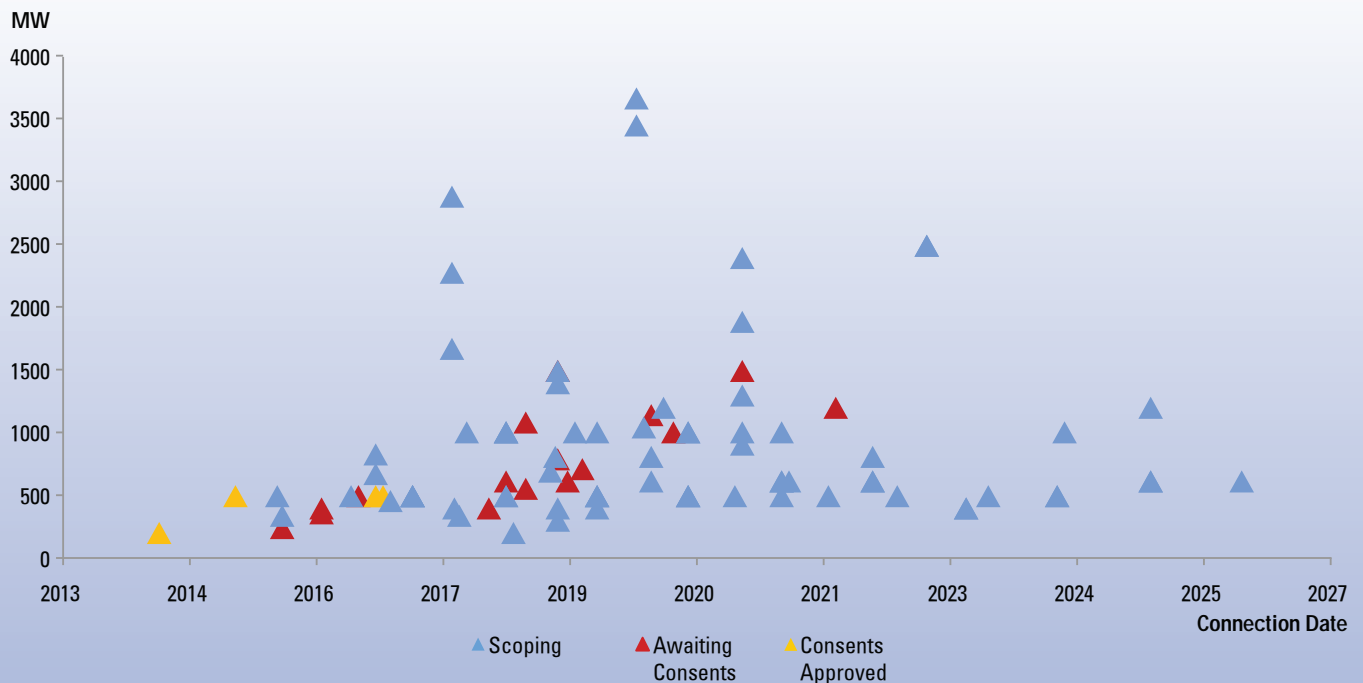
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### A Significant Pipeline of Investment Opportunities

The pipeline of future OFTO investment opportunities is presented below in Figure 3.5<sup>24</sup>. While there is always some uncertainty around future projects (given some projects are only at the planning stage of development or earlier), the trend of projects to date suggests that future projects may be larger in size. This is mostly due to greater anticipated capital investment requirements to meet the challenges of deeper water, greater distance from shore and more complex connections. The timing of future OFTO opportunities is somewhat uncertain. Connections data (shown below) suggests around 48 GW of capacity could be generating by around 2020, significantly more than the Department of Energy and Climate

Change's (DECC) expectations, which estimates that 10 GW of capacity is achievable by 2020<sup>25</sup>. The introduction of the CfD policy regime also means there is less certainty over the size of the pipeline. Nevertheless, it is clear that there is a substantial pipeline of offshore wind projects and associated OFTOs, with offshore wind projects commencing in the period until 2018/19 continuing to receive strong support via the published strike prices. The NAO estimates that £8 billion of investment would be needed in OFTOs by 2020, suggesting Ofgem may be running up to £1 billion of tenders for OFTO projects annually to the end of the decade<sup>26</sup>, with the prospect of continued volume thereafter.

Figure 3.5: Connections data showing potential future OFTO opportunities



Source: KPMG analysis of National Grid TEC register data

24 Based on data from the TEC register

25 Electricity Market Reform Delivery Plan, DECC (2013)

26 Offshore electricity transmission: a new model for delivering infrastructure, June 22, p15, NAO (2012)

## 4 How can OFTOs be invested in?

Investors can invest in the OFTO asset class in a variety of ways including:

- Primary market: investing in either debt or equity
- Secondary market: by buying in to or refinancing existing assets.

This section outlines the tender process and criteria of a successful bid for those involved in bids (and the potential differences between the generator build and OFTO build options) and describes the current state of the secondary market (both in terms of debt and equity investment).

### 4.1 The tender process

#### Under the generator build option

The tender process for the transfer of the OFTO assets under the generator build option has run alongside the asset construction process. There are a number of key stages running from tender launch to financial close. The process took about 12 months from Pre-Qualification (PQ) to appointment of a Preferred Bidder for most of the Round 1 projects, but has taken longer on some Round 2 projects due to construction delays and because some projects were tendered relatively earlier to enable the PQ process to be run jointly for a number of projects (reducing costs for bidders).

Ofgem expects to run the tender process later for future projects, when more detailed project information will be available to bidders earlier on in the process. This is expected to reduce the timescales for the tender process and improve efficiencies for participants. Ofgem also plans to run a combined PQ/Qualification to Tender (QTT) stage (see below) for Tender Round 3, again with the intention of increasing efficiencies.

For generator build projects, the tender process consists of the following steps:

- i. Pre-qualification (PQ): Bidders are required to submit summary information on their experience and

capabilities (the PQ Questionnaire) which demonstrates they are capable of:

- Taking over the ownership of the OFTO assets for the Project it has tendered for; and
- Assuming the responsibilities and duties associated with being an Offshore Transmission Licensee. The first tender round received 29 PQ submissions across the nine projects.

#### > Based on PQ submissions Ofgem identifies a long list of bidders

- ii. Qualification to Tender (QTT): Bids are based upon generic and project-specific information memoranda and are assessed against a number of criteria that are a combination of financial and operational criteria. For Tender Rounds 2a and 2b, these criteria were:
  - Project IRR and Tender Revenue Stream
  - Financing Strategy
  - Financial and Shareholding/Bidder Group Structure
  - Commercial Risk Management
  - Proposed Takeover Plan
  - Management and Operational Capability Statement
  - Transfer Agreement
- iii. For Tender Round 3, Ofgem anticipates running an 'enhanced' PQ rather than separate PQ and QTT stage. The enhanced PQ will incorporate many key aspects of the QTT.

#### > Based on QTT submissions Ofgem identifies a short list of bidders

- iv. Invitation to Tender (ITT): A shortlist of bidders (typically 3-5) is provided with access to a data room to complete detailed due diligence and finalise their tenders. For projects in Tender Rounds 1 and 2, the detailed evaluation process was conducted

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over four distinct sequential stages shown below.

### > Either: Preferred and reserve bidder announced or BAFO

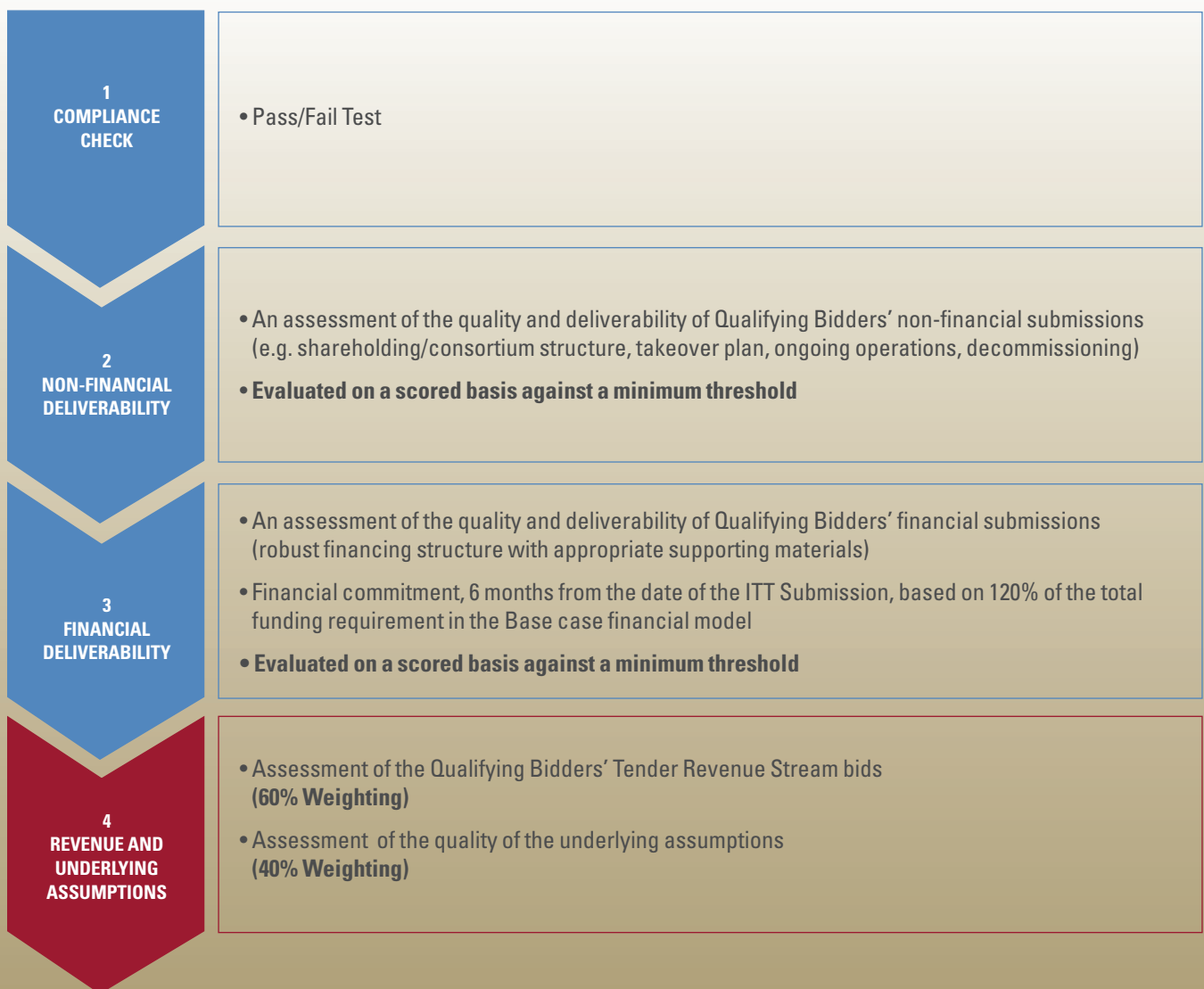
- v. Best and Final Offer (Optional) (BAFO): Some or all shortlisted bidders may be required to resubmit their tender proposals where it has not been possible to identify a preferred bidder at the ITT stage. In Round 1 the Preferred and Reserve

bidders were selected for eight of the nine transmission projects based on the ITT stage. For the Ormonde project the ITT stage was inconclusive so three bidders were selected to submit Best and Final Offers prior to selection of a Preferred Bidder. A similar process was run for the London Array project, as part of Round 2.

### > Preferred and Reserve Bidders announced and Licence Grant

Once a preferred bidder is appointed, there is a period for confirmatory due diligence, final credit approvals and finalisation of the transfer documentation. The PB process is followed by a 28 day Section 8a Consultation (on modifying the Licence to incorporate OFTO specific provisions). Any outstanding matters

Figure 4.1: Bid evaluation and deliverability check process for projects to date (generator build)



Source: KPMG

arising from this are dealt with prior to Licence Grant. Financial close occurs immediately thereafter. In total, this process has taken as little as seven months (e.g. for Robin Rigg) for projects that have reached financial close to date, but in other cases more than 24 months have passed without reaching financial close due to construction and commissioning delays affecting the projects.

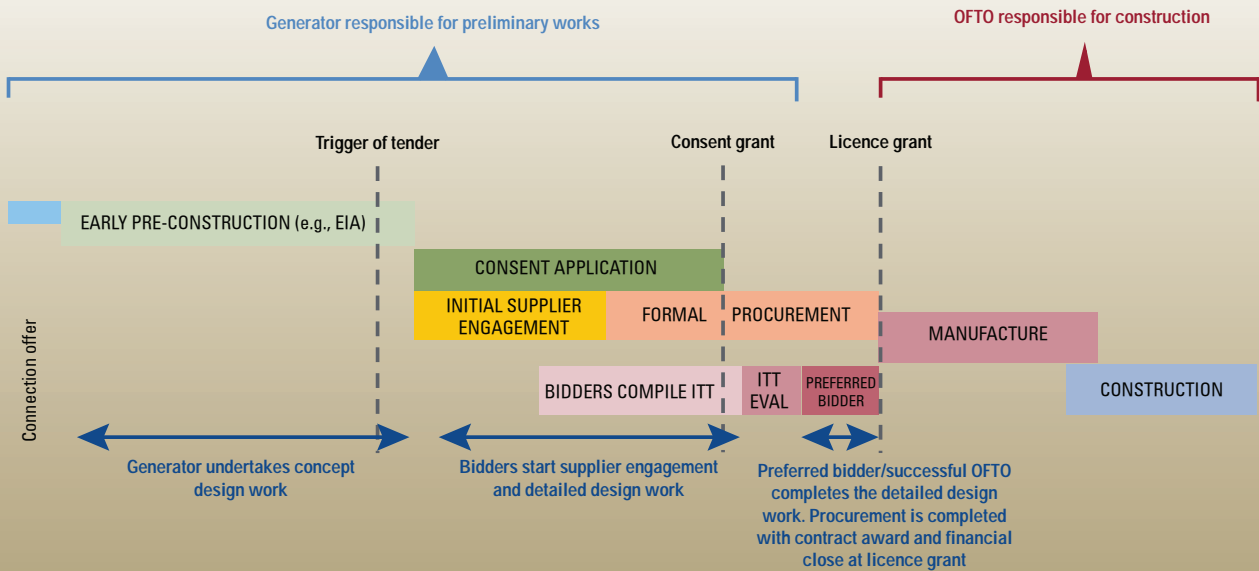
Ofgem has reviewed the timings of the tender process for Tender Round 3 and anticipates running the process later so that more detail is available to bidders earlier on. The aim is to minimise time from PB appointment to licence grant/ financial close.

**Under the OFTO build option**

OFTOs would become involved at a much earlier stage in the development of the project in the OFTO build option in order to engage with suppliers and undertake detailed design work (as Figure 4.2 illustrates). Consequently, the tender process would need to commence earlier. Ofgem has estimated that the tender process might take 15 to 18 months from ITT to licence grant.

Bids may become more complex and innovative, so more weight may need to be placed on the deliverability of the proposals and less weight on the TRS itself.

Figure 4.2: Indicative OFTO Build process



Source: Offshore electricity transmission: updated proposals for the enduring regime, May 22, p37, Ofgem (2012)



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## 4.2 Developing a successful bid

### Under the generator build option

As noted above, a bid is evaluated on the basis of the TRS proposed and on the deliverability of the proposals included in the bid. In order to put together a successful bid, investors need to give careful consideration to a range of issues including:

- Financial structuring: gearing, type and cost of debt, and structuring of equity;
- Asset takeover planning; and
- Operations and maintenance: whether to outsource O&M functions or not, structuring of contracts

with third parties to mitigate risks effectively.

### Innovative financial structures may be adopted

Bidders have flexibility over the financing structure they put forward as part of their bid, so long as the deliverability of the proposal is convincing and the proposal enables the investor to put forward a competitive TRS. A range of structures have been put forward in bids so far under Tender Rounds 1 and 2:

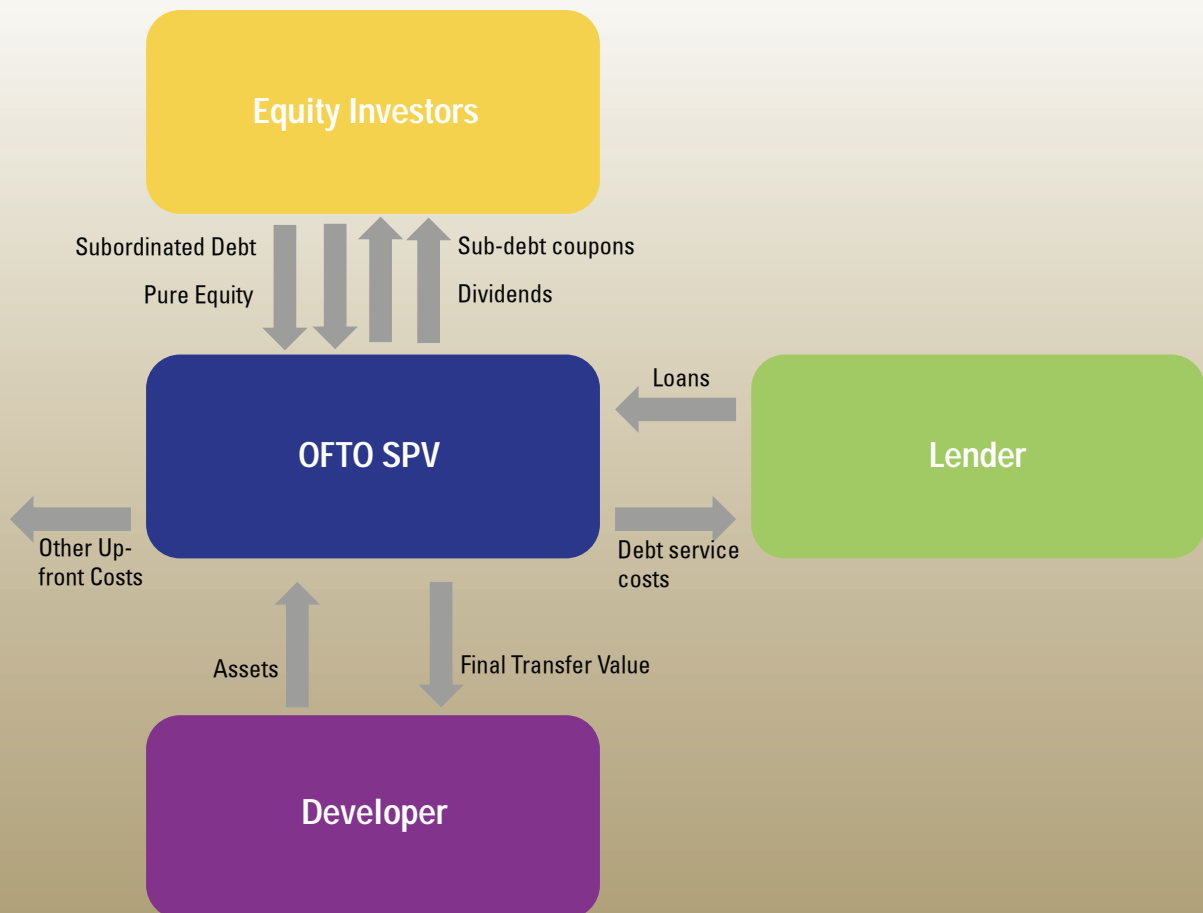
- Highly leveraged project finance type structures with a mixture of equity, shareholder subordinated loans and long term senior debt (sometimes with reserve facilities to cover short term liquidity needs). When these structures have been used, equity

has usually been structured into a sub debt component and pin point ordinary share equity; and

- Lower leveraged project finance type structures where equity has constituted a majority (and in some cases all) of the capital invested. Where lower leverage is used equity investment sizes may be more attractive (by making them larger) to some investors than under a highly leveraged approach.

Those projects financed using a highly leveraged project finance type structure (as illustrated by Figure 4.3) have typically involved gearing of 80–90% from a variety of commercial banks and the EIB<sup>27</sup>.

Figure 4.3: Illustrative financing structure of a highly leveraged project financed OFTO



Source: KPMG

While structures put forward so far have involved project financing through Special Purpose Vehicles (SPVs), on balance sheet corporate financed solutions might also be possible.

Most bidders for OFTO projects have so far been part of consortia, but other parties have bid on a standalone basis and there is no requirement to be part of a consortium. While each project and circumstances are different, bidders might consider:

- **Bidding in their own right**, which provides the greatest amount of control over the bid process and bid submission, but also requires the greatest equity commitment. Bidders might draw on external advisers to provide expertise around particular issues (e.g. technical, legal or financial) to make bidding easier.
- **Forming a consortium** to provide access to additional capital and/or involve expertise, bidding in conjunction with other partners might be advantageous.
- **Joining an existing consortium** might be beneficial to new market entrants, as it may provide the opportunity to take advantage of the experience of those that have already been directly involved in OFTO bidding.

To access debt on the most competitive terms, bidders may react to changing financial market conditions by:

- **Exploring different sources of bank finance** as the banking market changes and the identity of lenders to the OFTO industry may change. For example, several Japanese banks have recently entered the OFTO market, including SMBC, Mizuho, SMTB, the Development Bank of Japan, MUFG and Shinsei. These and other Japanese and Asian lenders offer an alternative source of bank finance.

### Access to bond markets

The debt financing market continues to evolve and strengthen following the Global Finance Crisis. In general, credit spreads are reducing along with the development of wider institutional debt products. In the UK, the development of an active private placement institutional debt market, alongside a commercial bank market, has meant long term financing has still been available. There has been a re-emergence of a monoline insurer providing credit enhancement as well as the delivery of project bonds in the public markets. In addition, the Government has introduced the UK Guarantees scheme to provide credit support through a guarantee to infrastructure projects and the EIB has introduced the Project Bond Credit Enhancement (PBCE) product. Therefore, the debt market is currently very active and offers a broad range of products to borrowers.

The features of OFTO investments (i.e. operational asset, long term stable availability based revenue and strong regulatory regime) have led to the asset class being recognised by rating agencies as having a good credit rating (around BBB+ without credit enhancement<sup>28</sup>), and hence there should be a good level of support from institutional investors for OFTO assets.

Financing through bond markets has recently been delivered on the Greater Gabbard project, whereby the OFTO issued £304 million of senior secured bonds to finance the acquisition of the offshore transmission assets.

As well as being the first example of an OFTO accessing capital markets to meet its financing needs, Greater Gabbard is also the first project in the UK to be a recipient of the EIB's Project Bond Credit Enhancement (PBCE) product. Moody's have given the bonds a provisional credit rating of (P)A3 (A-), incorporating a one-notch uplift to reflect the credit enhancement from the EIB.

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*In order to access debt on the most competitive terms, bidders will need to react to changing financial market conditions.*

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*Synergies between OFTOs may be explored by appointing the same contractors to operate or manage multiple projects or by insuring multiple OFTOs with the same party. The potential for maintenance and repair costs to be reduced through the use of a common pool of spare parts or joint procurement of ships might also be areas for consideration.*

The use of the institutional investor market (either private or public) for OFTO projects is likely to continue, whether through the EIB PBCE product, the UK Guarantees structure or without credit enhancement, given the underlying credit rating. These options are likely to compete alongside commercial bank debt leading to genuine competition between debt products.

Another option that OFTOs may also explore is the refinancing of projects through bond issuance, though ring fencing provisions in project licences may make this difficult to implement. This is discussed further in Section 4.3 below.

#### **Operations and maintenance, insurance and tax**

Bidders might opt to put forward competitive bids by:

- **Installing an experienced management team** that understands the particular challenges of operating OFTOs, or by **risk sharing through contracting with third parties**, e.g. O&M contractors may be willing to accept penalties associated with the availability incentive mechanism in return for receiving bonus payments for exceeding the availability target. The windfarm developer may be willing to provide O&M services. Wherever contractors are used, bidders will also need to consider whether fixed price medium term contracts offer the best value for money: periodic renegotiations may represent an opportunity or a risk, depending on the level of competition which emerges for providing the contracted services.
- **Putting in place insurance as efficiently as possible** (both in terms of price and coverage). Property Damage, Business Interruption and Third Party insurance might all be required in some form as a result of industry standards or financiers' requirements. Minimising prices

through brokers or by self insuring can be important to securing a competitive advantage, while optimising insurance coverage so that it dovetails with protections in the licence and in other contractual arrangements and construction warranties may secure a competitive advantage without affecting the risk profile of the business. Bidders will also need to form a view about the appropriate risk buffer to include in their insurance cost projections, taking into account how they expect the insurance market to evolve over time, e.g. how liquid it will be, how many participants there will be, how pricing might be affected by any claims made.

- **Exploring the potential for additional revenue** from non-regulated activities such as providing reactive power services, i.e. services to help manage grid voltage levels.
- **Ensuring that their bids contain robust tax assumptions.** The UK headline corporate tax rate, currently 23%, has been reducing in recent years and current expectations are that this trend will continue. The tax rate was reduced from 24% in prior year and is also due to reduce to 21% as of April 2014 and to 20% as of April 2015 (though this may depend on the outcome of UK elections). However, the UK does not currently grant tax relief for expenditure on buildings and structures and so the effective tax rate on profits is likely to be higher than the headline rate. There will be a need for bidders to analyse expenditure in terms of the tax rules. At current 2013 rates, tax depreciation can be claimed on qualifying plant and machinery at rates of 18% or 8% per annum, reducing balance basis, depending on whether it has a useful economic life of less than or more than 25 years. The UK is relatively generous in the tax deductions granted for financing costs when compared to

some other jurisdictions, however, the UK tax rules are complex in this regard and will need to be considered carefully when formulating a bid. The UK does not levy withholding tax on dividend payments made in the ordinary course of business, but 20% withholding tax applies to interest payments, which may be reduced if for example, an exemption or a relevant double tax treaty applies.

- **Synergies between OFTOs** is an area that may be explored, e.g. by appointing the same contractors to operate or manage multiple projects or by insuring multiple OFTOs with the same party. The potential for maintenance and repair costs to be reduced through the use of a common pool of spare parts or joint procurement of ships might also be areas for consideration.

#### **Under the OFTO build option**

Those who elect to bid for future OFTO build projects as they arise should consider the following points in order to help develop a successful bid:

- **Project size might be larger:** larger and more complicated consortia may be needed, especially for an OFTO build option, to provide the capital and expertise required to deliver the projects. This may mean that the parties which have bid for OFTO licences to date may not be the same as the parties which bid for future OFTO licences.
- **Supply chain management:** demonstrating ability to work in partnerships with reputable and reliable potential suppliers to deliver reliable, innovative solutions that achieve value for money for consumers and which provide confidence on the deliverability of plans could be advantageous. Experience and track record at procuring and managing suppliers, including manufacturers, could be important to demonstrate.

- **Secondary market:** Investors might also enter the OFTO asset class by buying out an existing equity investor or to provide debt finance through a refinancing of existing debt.
- **Construction delivery:** credible plans to mitigate and manage construction risks through contractual arrangements and appropriate risk sharing could add value for consumers. Different contractual arrangements might be possible including engineering, procurement and construction (EPC) or 'turn-key' contracts, or a package of bilateral contractual arrangements as has been common to date on offshore windfarm projects.
- **Risk mitigation:** aside from managing and sharing the risks associated with the supply chain and construction, the underlying financial strength and resilience of bids would be expected to impact the deliverability of bids and consequently how much value for money they are likely to be delivering.

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## 4.3 Secondary market

Investors might also enter the OFTO asset class by buying out an existing equity investor or by providing debt finance through a re-financing of existing debt. The development of the secondary market could have positive ramifications for the OFTO asset class, not least because it would allow capital to be recycled and would enable the investor base to diversify further.

### Equity

To date, effective liquid secondary markets have not yet emerged, partly due to the preferences of existing investors. The majority of investors to date have been long term asset owners, who generally seek to retain the OFTO investments for their attractive risk profile. However, signs of an embryonic secondary market for OFTO equity can be seen, for example in Mitsubishi Corporation's acquisition of a 50% stake in the Walney 1 project from Macquarie Group in December 2011. This was facilitated by Macquarie Capital Group effectively offering short term equity in the consortium alongside Barclays until its stake could be sold to a long term holder<sup>29</sup>. Mitsubishi, together with Barclays Infrastructure Fund, has subsequently also acquired a 50% stake in the Walney 2 and Sheringham Shoal projects. Such developments may be replicated elsewhere as investors seek to review asset portfolios and/or restructure OFTO holdings.

Acquiring an existing equity stake may be attractive to investors because:

- The need to participate in the Ofgem run bidding process may be circumvented; and
- Access to an existing consortium's knowledge and experience may be gained, benefiting future bid submissions.

Experience from other markets such as PPP suggests that an active secondary market could be expected to emerge in the future<sup>30</sup>. In the case of PPP, many projects have changed hands on secondary markets. Likewise, there are numerous examples of secondary market transactions in onshore regulated utility networks.

The extent to which the secondary equity market develops may be dependent on a number of additional factors, including (but not limited to):

- Developments in the longer term financing market for OFTO assets (for cost and equity returns enhancement purposes);
- Competing alternatives in the infrastructure investments sectors, including other regulated onshore networks (particularly for new entrants and financial or industrial/strategic investors); and
- Related developments in the UK OFTO regulatory regime.

### Debt

Secondary market activity for debt investors could also emerge if acquisition loans are refinanced. Whether existing equity investors would seek to refinance existing debt depends on a range of factors, such as the presence of margin step-ups in existing loan documentation, as well as the general evolution of financial markets.

Ofgem has announced that a refinancing gain sharing mechanism will be employed for future Tender Rounds, and is currently consulting on how the gain sharing mechanism will be implemented. Though it is not yet clear what effect this will have on investment/financing decisions, refinancing gains have typically been treated as a potential upside and are only one of a number of drivers of investment.

*Investors might also enter the OFTO asset class by buying out an existing equity investor or by providing debt finance through a refinancing of existing debt.*

<sup>29</sup> InfraDeals web site

<sup>30</sup> *Offshore electricity transmission: a new model for delivering infrastructure*, June 22, p29, See NAO (2012)

Investors may be keen to tap new financing sources if they emerge and are priced competitively. For example, investors could be expected to try and access alternative sources of commercial bank debt if a divergence in lending appetite emerges: banks from Asia, which appear willing to continue to lend at long tenor and at lower margins, may emerge more prominently in refinancings as new capital regulations impact on European lenders. Other alternative sources of capital might include direct pension fund investment, infrastructure funds, debt funds or insurers. Government-sponsored funding vehicles are also starting to develop, whereby outbound investment activities of national corporates/funds (e.g. from Asia) are facilitated in order to enhance their competitiveness in auction processes.

Another possibility, which is yet to be seen in the OFTO context but has been reasonably common for PFIs in the past, may be for investors to access bond markets in future. Whether an investor would decide to access capital markets might depend on several factors:

- The size of the projects: the small size of projects under the first Tender Rounds have meant that any bond issuance would also be relatively small and potentially not cost competitive once transaction costs are taken into account. This may change as projects increase in size under future tender rounds.
- The availability of credit enhancement facilities: credit enhancement facilities, such as guarantees or swaps, increase the ability to finance projects through capital markets. The EIB's PBCE product, delivered on Greater Gabbard, provides an example of how the underwriting of infrastructure lending enhances the attractiveness to lenders and thereby reduces borrowing costs for project sponsors. This initiative now being available for OFTOs could help develop the use of bond financing

and other forms of capital market financing.

- The ability to finance multiple OFTOs jointly: that relatively few projects have closed to date may mean investors have not yet explored this possibility in depth, but the ability to issue larger bonds secured against revenues arising from a portfolio of OFTO projects might provide investors with another route to refinancing. It is also possible that rating agencies might view debt secured against a portfolio of projects marginally lower risk as single asset risk would be reduced. Ring fencing provisions in OFTO licences – which effectively mean default by one project cannot be allowed to affect the financing of another project – may limit the ability of investors to leverage against a portfolio of projects. However, it may be possible for investors to structure financing in a way that respects the ring fencing provisions whilst securing the benefits of the portfolio effect. Investors would only seek to create such financing structures if there were economic benefits to doing so.

Although the potential exists for the development of a secondary market for OFTOs, experience from the UK PPP market demonstrates that refinancing debt is not always straightforward (structurally), particularly when long term arrangements are in place, e.g. for hedging. Crucially, OFTO owners will only look to refinance if there is an economic benefit. A general downward trend in credit margins may contribute to such an economic benefit, though this may be partly offset by increases in interest rates in the medium term. Refinancing may also not be as the most economic solution if capital market/institutional lending solutions were to develop.

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*OFTOs are now firmly established as an infrastructure asset class that has attracted over £2 billion of committed investment from a variety of sources.*

## Appendix 1: Frequently Asked Questions

#	Question	Answer
<b>Regulatory regime</b>		
1	Will biddable indexation mean that revenues are no longer linked to RPI inflation?	<p>Not necessarily – bidders can opt to index their preferred proportion of the Tender Revenue Stream (TRS) to inflation depending on their capital structures.</p> <p>Ofgem anticipates that bidders may choose to index between 15-100% of the TRS, and submissions will be assessed in real terms in order to compare submissions with varying levels of indexation.</p>
2	Will a refinancing gain sharing mechanism reduce investor returns?	<p>Refinancing gain sharing will apply to gains from the refinancing of 'external debt', which includes bank and capital markets debt and excludes elements such as shareholder debt and subordinated loans. Gains from debt refinancing are usually considered as potential upsides in investment decisions.</p>
3	Will a capacity weighting mechanism increase the risk of outage penalties?	<p>Capacity weighting is designed to incentivise OFTOs to minimise larger outages and plan maintenance work accordingly.</p>
4	How is interest during construction treated in the OFTO regulatory regime?	<p>In the case of the generator build option, interest during construction (IDC) is included in the asset transfer value paid by the OFTO and reflected in the TRS. IDC is currently treated using a cap approach, whereby a cap is published for all projects reaching Final Investment Decision (FID).</p> <p>The cap is set at 8.0% (on a nominal pre-tax basis) for projects that reach FID from 1 April 2014. The cap will be reviewed annually, though revisions will not affect projects that reached FID in the financial year prior to the revision.</p> <p>As such, the OFTO pays for the cost of capital during the construction phase, although it is not exposed to the movements in underlying rate.</p>
<b>Financing</b>		
5	How might available funding change for future projects?	<p>Projects of different size/type will likely attract different financing solutions. Projects to date have been financed by varying levels of debt and equity investment.</p> <p>Debt terms to date have fallen between the following ranges:</p> <ul style="list-style-type: none"> <li>• Gearing levels: typically around 80% to 90%</li> <li>• Loan amounts: wide range (between £30-420 million)</li> <li>• Margins: typically around 200 to 220 bps above Libor</li> <li>• Loan tenors: typically the term of the OFTO licence (with a one-year tail)</li> </ul> <p>The Greater Gabbard project was financed through the issuance of project bonds, with a one step credit enhancement from the European Investment Bank (EIB) Project Bond Credit Enhancement (PBCE) product. This was the first UK project to receive the EIB PBCE product and to be financed in this way. The bonds have a maturity of 19 years (similar to term loans on other projects) with a coupon of 4.137% (125 bps spread over UK gilts).</p> <p>As part of the EIB's Europe 2020 Product Bond Initiative, the PBCE product is designed specifically to stimulate the use of capital markets financing solutions on large-scale infrastructure projects. Ofgem has amended the Market Rate Adjustment (MRA) term in the OFTO licence to allow an adjustment to be made to the TRS for public issuance bond spreads. This facilitates the use of bond financing on OFTO projects and may lead to more bidders seeking to make use of credit enhancement facilities.</p> <p>The EIB PBCE product is expected to be available for Tender Round 3 OFTO projects. The pilot phase of the PBCE product ran until 2013 with funding of EUR 230 million. To be eligible for the next phase (the next 'multi-annual financial framework'), suitable projects will need to reach financial close before the end of 2016.</p> <p>Other forms of financial products may also be available for future OFTO projects, such as the UK Guarantees scheme (offered for West of Duddon Sands), which is an HM Treasury scheme designed to promote investment in crucial infrastructure projects. There is also a range of further funding options available to sponsors that could help create healthy competition.</p>



#	Question	Answer
<b>Tender process</b>		
6	How long does the tender process take?	For Tender Round 3 projects, the tender process is being run later than for Tender Round 2 projects in order to maximise the project information available to bidders earlier on in the process and increase efficiencies. The process is anticipated to take 12 months from the start of the Invitation to Tender stage to financial close.
7	What changes will be implemented to the tender process?	For Tender Round 3, Ofgem anticipates running an ‘enhanced’ PQ process rather than separate PQ and QTT stages. The enhanced PQ will incorporate several key aspects of the QTT, and this is expected to reduce the time required for the tender process.
<b>New market entrants</b>		
8	There are few successful bidders for OFTO projects to date – is there a level playing field in the market?	<p>The number of bidders involved in projects to date is roughly in-line with expectations given that OFTOs are still a relatively new asset class. As the regulatory regime continues to evolve and new investors become more familiar with the asset class, it is reasonable to expect that the market will ‘open up’ and new market entrants will emerge.</p> <p>For example, the development of the OFTO build model may attract different consortia than the generator build model, with differing appetites for construction risk. Likewise, the evolution of the secondary market may provide new routes for investors to gain access to the asset class and develop experience in the asset class.</p> <p>Ofgem remains committed to attracting new entrants to the market to ensure effective competition and to enable ongoing innovation.</p>
9	Is it too late to become involved in the OFTO market?	<p>The projects tendered to date amount to approximately 4 GW of installed capacity. The government has signalled continued support for offshore wind generation up to 2020 through the Contracts for Difference (CfD) strike prices, and DECC estimates that 10 GW of offshore wind capacity is achievable by 2020. Furthermore, the amount suggested by connections data is potentially greater than this (see Figure 3.5 in Section 3.2 of the main report).</p> <p>Most data therefore suggests that opportunities for investment in the OFTO market are likely to increase over the coming years. However, it is important for potential investors to monitor market and regulatory developments closely to identify the most appropriate opportunities.</p> <p>Experience over the last few years also suggests that the wider EU offshore transmission market may provide opportunities for potential UK market entrants to gain experience and improve their position bidding for UK OFTO projects.</p>
<b>Unbundling regulations</b>		
10	What is the position of the regulations if you own generation assets?	Depending on the size of the generation assets owned and the ownership structure, it may be permissible to also hold transmission assets. Ofgem advises parties to obtain their own independent legal advice.
<b>Why to get involved</b>		
11	What are the key characteristics of OFTO assets that make them an attractive investment?	<p>The key characteristics of the OFTO asset class that make it an attractive investment opportunity include:</p> <ul style="list-style-type: none"> <li>• OFTOs receive a long-term inflation-linked revenue stream, which they continue to receive for the term of the licence as long as the transmission assets continued to be available.</li> <li>• OFTOs face limited regulatory risk as they are not exposed to periodic price reviews, and are supported by an established regulatory process.</li> <li>• OFTOs are not exposed to the generating asset, which gives the OFTO additional protection from political or regulatory uncertainty.</li> <li>• OFTOs have opportunities for upsides (e.g. through achieving operational efficiencies).</li> <li>• OFTOs have a solid counterparty, as the NETSO is ring-fenced, regulated, investment grade business.</li> </ul>





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