

# Offshore Transmission: Cost Assessment for the West Of Duddon Sands transmission assets

## Decision

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**Contact:** Roger Morgan, Senior Manager,  
Stakeholder Engagement

**Team:** Offshore transmission

**Tel:** 020 7901 0525

**Email:** [roger.morgan@ofgem.gov.uk](mailto:roger.morgan@ofgem.gov.uk)

### Overview:

This document sets out the cost assessment for the West of Duddon Sands offshore transmission assets and the key principles that we have applied in our cost assessment process for the second transitional tender round. The Authority has granted an offshore transmission licence to WoDS Transmission plc, incorporated by the consortium of Macquarie Corporate Holdings Pty Limited, 3i Infrastructure plc and Frontier Power Limited.

WoDS Transmission plc has incorporated the assessed transfer value as set out in this report into their tender revenue stream. The appendices published alongside this report are available on the Ofgem website. They include correspondence between Ofgem and the developer as part of the cost assessment process and external consultants' reports.

## Context

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Ofgem and the Department of Energy and Climate Change have developed a regulatory regime for offshore electricity transmission. A key part of this regime is that an offshore electricity transmission licence will be granted to an Offshore Transmission Owner (OFTO) following a competitive tender process run by Ofgem. The transitional tender regime has been designed for projects that were under development, in construction or constructed at the time of the announcement of the regime<sup>1</sup>.

The Electricity (Competitive Tenders for Offshore Transmission Licence) Regulations 2013 (“the Tender Regulations”) came into force on 22 February 2013. The Tender Regulations set out the tender process framework for granting an OFTO licence, including how Ofgem will run future tenders under both the generator build and OFTO build options. The Tender Regulations apply to the WoDS transmission assets.

The Tender Regulations set out the requirement for the Authority to calculate, based on all relevant information available to it, the economic and efficient costs which ought to be, or ought to have been, incurred in connection with developing and constructing the offshore transmission assets in respect of a project. The Tender Regulations provide for an estimate, followed by an assessment of costs, in relation to offshore transmission assets.

Where the Authority has determined to grant an offshore electricity transmission licence to the successful bidder in respect of a particular project, the assessment of costs shall be used by the Authority to determine the value of the transmission assets to be transferred to the successful bidder. This value will be reflected in the revenue stream in the offshore electricity transmission licence granted to the OFTO.

This is the thirteenth cost assessment report for offshore transmission published by Ofgem, and the fourth relating to the second transitional tender round. It is also the last cost assessment report under the transitional tender regime.

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<sup>1</sup><http://www.ofgem.gov.uk/Networks/offtrans/pdc/cdr/cons2009/Documents1/Main.pdf>

## Associated documents

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- Kema report on benchmarking [Link](#)
- Ernst and Young report on Interest During Construction [Link](#)
- The Electricity (Competitive Tenders for Offshore Transmission Licences) Regulations 2013 [Link](#)
- Offshore Transmission: Tender Rules [Link](#)
- Interest During Construction for Transitional Tender Rounds [Link](#)
- Offshore Transmission: Guidance for Cost Assessment [Link](#)

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## Executive Summary

This document sets out Ofgem’s assessment of the economic and efficient costs which ought to have been incurred in connection with the development and construction of the transmission assets for the WoDS offshore transmission project (“the Project”). It also details the cost assessment process we have undertaken.

The cost assessment process involved the three key stages set out below:

- The initial calculation of costs based on the Developer’s initial estimate was £311m (“the initial transfer value”). This was communicated to the Developer and published in the preliminary information memorandum (PIM) in December 2012;
- The indicative estimate of costs was £296.2m (“the indicative transfer value”). The estimate was calculated as a result of further information regarding the development and construction of the Project being made available by the Developer and continuing analysis by Ofgem and its advisors. This updated calculation was communicated to the Developer in August 2013. The indicative transfer value was made available in the project information memorandum (IM) and was the transfer value assumed for the purpose of Invitation To Tender (ITT) stage submissions; and
- The assessment of costs is £268.9m (“the assessed costs”). This compares to the Developer’s final submission of £296.7m, a reduction of £27.8m. The assessment is the Authority’s calculation of the costs which ought to have been incurred in connection with the development and construction of the Project. This is also the amount to be paid to the Developer by the OFTO for the transmission assets (“the final transfer value”).

The key components of the initial, indicative and final transfer values, together with the Developer’s submission of the latter, are given in table 1 below, followed by a summary of the further breakdown for movements between the Indicative Transfer Value (ITV) and the Final Transfer Value (FTV).

Table 1: Summary of cost components

Category	Initial transfer value	Indicative transfer value	Developers proposed transfer value	Final transfer value
	Dec-12 (£m)	Aug-13 (£m)	Jul-14 (£m)	Mar-15 (£m)
Capex	219.9	219.1	231.9	215.1
Development	37.6	36.8	39.5	31.0
Contingency	33.5	20.3	0	0
IDC	17.9	17.9	23.2	20.7
Transaction	2.1	2.1	2.1	2.1
<b>Total</b>	<b>311.0</b>	<b>296.2</b>	<b>296.7</b>	<b>268.9</b>

### **Capital expenditure (Capex)**

The Capex component of the FTV decreased by £4.0m since the indicative transfer value, due to a number of increases and decreases and including Ofgem's efficiency decisions as set out below:

- An increase of £12.7m in costs for the onshore substation construction, onshore cable installation and project management.

This increase was offset by the following reductions:

- £5.9m in onshore civil engineering costs;
- £4.7m in foreign exchange losses;
- £3.3m in onshore substation project management costs;
- £1.1m for removing estimated costs that were not incurred;
- £0.9m in cost incurred for cable load out;
- £0.6m for removing pre-transfer Operation and Maintenance (O&M) costs; and
- £0.2m for re-allocating costs to generation assets.

### **Development costs**

The Project's development costs have decreased by £5.8m to £31m since the indicative transfer value. The decrease is mainly due to the reallocation of project management costs to generation and the removal of pre-transfer O&M costs found in project management.

### **Contingency**

The contingency allowed in the indicative transfer value has been mostly used in addressing additional Capex and development costs.

### **Interest during construction (IDC)**

The IDC amount has increased by £2.8m as a result of the extended construction period.

### **Transaction costs**

The transaction costs are composed of both internal and external resource costs arising from the Developer's participation in the tender process. The transaction costs have been assessed to be £2.1m.

### **Capital Allowances**

The Developer has confirmed that the incoming OFTO will be able to obtain the full benefit of all available capital allowances.

## **Final transfer value for the WoDS transmission assets**

In accordance with Regulation 4(2)(b) of the Tender Regulations, the assessed costs of the WoDS transmission assets are £268,895,686. The final transfer value as determined by the Authority under Regulation 4(6) of the Tender Regulations is £268,895,686.

# 1. The cost assessment process

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## Chapter Summary

The Tender Regulations set out the requirement for the Authority to calculate, based on all relevant information available to it, the economic and efficient costs which ought to be, or ought to have been, incurred in connection with developing and constructing the offshore transmission assets in respect of a project. This chapter sets out the process that we followed in carrying out the cost assessment for the Project.

## Overview of the cost assessment process

- 1.1. The Tender Regulations provide the legal framework for the process which Ofgem follows for the grant of offshore electricity transmission licences. This process includes calculating the economic and efficient costs of developing and constructing the offshore transmission assets to be transferred to the new OFTO.
- 1.2. The calculation of those costs shall be:
  - Where the construction of the transmission assets has not reached the stage when those transmission assets are available for use for the transmission of electricity, *an estimate* of the costs which ought to be incurred in connection with the development and construction of those transmission assets; and
  - Where the construction of the transmission assets has reached the stage when those transmission assets are available for use for the transmission of electricity, *an assessment* of the costs which ought to have been incurred in connection with the development and construction of those transmission assets.

## Cost assessment principles

- 1.3. The cost assessment principles and overall process we have adopted in relation to various cost categories for transitional tender rounds and the reasoning for such principles can be found in the document 'Offshore Transmission: Guidance for Cost Assessment'<sup>2</sup> (hereafter "the Guidance").
- 1.4. We have applied these principles in our cost assessment process for all the transitional projects. However, we have reviewed them where appropriate in light of the analysis undertaken in respect of project specific circumstances.

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<sup>2</sup> [Offshore Transmission: Guidance for Cost Assessment](#), Ofgem ref 183/12, Dec 2012



- 1.5. The remainder of this chapter describes some of the key elements of the cost assessment process. Chapter 2 provides the detail as to how these have been applied to the specifics of the Project.

## Data collection

- 1.6. To undertake cost assessments we gather and review a range of information and supporting evidence. These relate to the forecast and actual costs of developing and constructing the transmission assets that will transfer to the OFTO. Detailed cost information is provided by developers in the form of cost reporting templates, contract values, asset cost schedules and cashflows. Developers also provide supporting evidence to substantiate their cost submissions including, amongst other things, contract documentation, supplier payment lists and invoices and receipts.
- 1.7. The data collection to inform the cost assessment process for all transitional projects commenced in December 2008 and continued through the assessment process. Throughout this period we have worked closely with developers, gathering information relating to the following cost categories in the development and construction of the transmission assets:
- Capital expenditure;
  - Development costs;
  - Contingency provisions;
  - Interest during construction; and
  - Transaction costs.

## Process stages for cost assessment

- 1.8. The cost assessment process involves the key stages set out below.

### Initial transfer value

- 1.9. The initial transfer value is based on cost submissions by the developer for the project. This value is made available to bidders at the Pre-Qualification (PQ) or Enhanced Pre-Qualification (EPQ) stage of the tender process. The letter we send to developers at this time indicates that the calculation might be updated as a result of any further information provided by the developer and our continuing analysis.

### Indicative transfer value

- 1.10. We provide the ITV for the commencement of the Invitation to Tender (ITT) stage of the tender process. This value is used as an assumption underlying the tender revenue stream (TRS) bids submitted by bidders at the ITT stage. The letter we send to developers confirming the ITV indicates that the calculation might be updated as a result of any further information provided by

the developers and our continuing analysis. For all transitional projects where the transmission assets were not yet available for the use of transmission (being all projects other than Barrow), this letter provides comfort (subject to certain matters) that the minimum final transfer value the developer will receive for the transmission assets once their project is complete is 75% of the ITV.

### **Assessed costs**

- 1.11. Once the transmission assets are complete or are close to completion and the developer indicates that they have documentation to support an assessment, we commence an exercise to determine the assessed costs.
- 1.12. Following this assessment exercise, Ofgem sends the developer a draft cost assessment report setting out the amount of the assessed costs. This gives the developer the opportunity to correct factual errors and propose redaction of commercially sensitive information.
- 1.13. The draft report is also sent to the preferred bidder, to allow it to incorporate the assessed costs into their estimate of the TRS payable to the OFTO. This TRS amount, incorporating the assessed costs, is published in a consultation pursuant to section 8A of the Electricity Act 1989, by which the Authority proposes modifications to the standard conditions of the licence on a project specific basis (“the section 8A consultation”)
- 1.14. The draft cost assessment report is published alongside the section 8A consultation. The report remains in draft form until the conclusion of the section 8A consultation and the Authority has determined to grant an offshore transmission licence to the successful bidder.

### **Final transfer value**

- 1.15. The assessed costs are used by the Authority to determine the FTV, which is confirmed once the Authority has determined to grant an offshore transmission licence to the successful bidder. After licence grant the final cost assessment report and supporting appendices is published on the Ofgem website.
- 1.16. Ofgem normally finalises the assessment of costs prior to commencement of the section 8A consultation, with the section 8A TRS accounting for 100% of the FTV.

### **Cost assessment analysis**

- 1.17. We apply two tests when calculating the estimate and assessment of costs:

Test 1 - Assessing the accuracy and allocation of developer's cost submissions

- 1.18. As a first test, we check the accuracy of the data provided by the developer and the appropriateness of cost allocations, in particular, between the offshore generation and transmission assets. Throughout the cost assessment process developers provide cost information to us on an ongoing basis. Where we identify discrepancies in how the developer has allocated these costs we check with developers to assess if they have been allocated to the correct asset category and make adjustments accordingly.
- 1.19. To support the cost assessment process we undertake a forensic accounting investigation. The scope of this investigation is shared with the developer in advance. This investigation is based on the final costs that the developer provides to us and applies to a sample of contract costs. The actual sample for each project varies due to the different contracting strategies adopted by the developer and the specific needs of the project, but generally focuses on the most expensive contract and/or contracts which materially increase in cost.
- 1.20. The forensic accounting investigation scrutinises the cost allocations provided by developers. This may indicate the need for amendments to the developer's submissions to reflect, for example:
- The actual costs incurred (e.g. in respect of exchange rates on foreign currency payments); and
  - More relevant metrics for the allocation of shared service costs.
- 1.21. Where amendments in our opinion are required and in the absence of further evidence from the developer to substantiate the original allocation, we incorporate the recommended changes from the forensic accounting investigation.

Test 2 - Assessing if developer's incurred costs are economic and efficient

- 1.22. Under the second test, we seek to assess, through appropriate analysis, whether the costs have been economically and efficiently incurred by the developer. Where possible, we apply benchmarking and where industry wide cost indices are unavailable we review data from projects in the transitional tender rounds. This analysis includes benchmarking across the projects and analysis in relation to funding interest rates. We consider such approaches to be an important tool in assisting us in determining what the economic and efficient costs should be.
- 1.23. To inform the cost estimate exercise to derive the ITV we undertake a benchmarking exercise. This is carried out using comparable costs across all transitional projects and any wider industry data to identify any cost outliers across the main cost categories. Any cost outliers we identify through the benchmarking exercise are subject to further review.

- 1.24. This benchmarking exercise informs our communication to the developer in our letter which sets out the ITV.
- 1.25. We also consider the procurement processes adopted by the developer to obtain economic and efficient transmission asset costs. We note the differing procurement approaches taken by developers for transitional projects. We will keep the efficiency of developer procurement and contract management approaches under close review for future cost assessments.
- 1.26. When undertaking the assessment of costs to derive the FTV, where Capex or development costs have increased since the ITV, developers are asked to provide supporting documentation to justify these increases. Depending on the nature of the increase, we may undertake a technical investigation which focuses on, for example, a particular cost increase in a contract or multiple increases across several contracts.

## 2. WoDS Cost Assessment

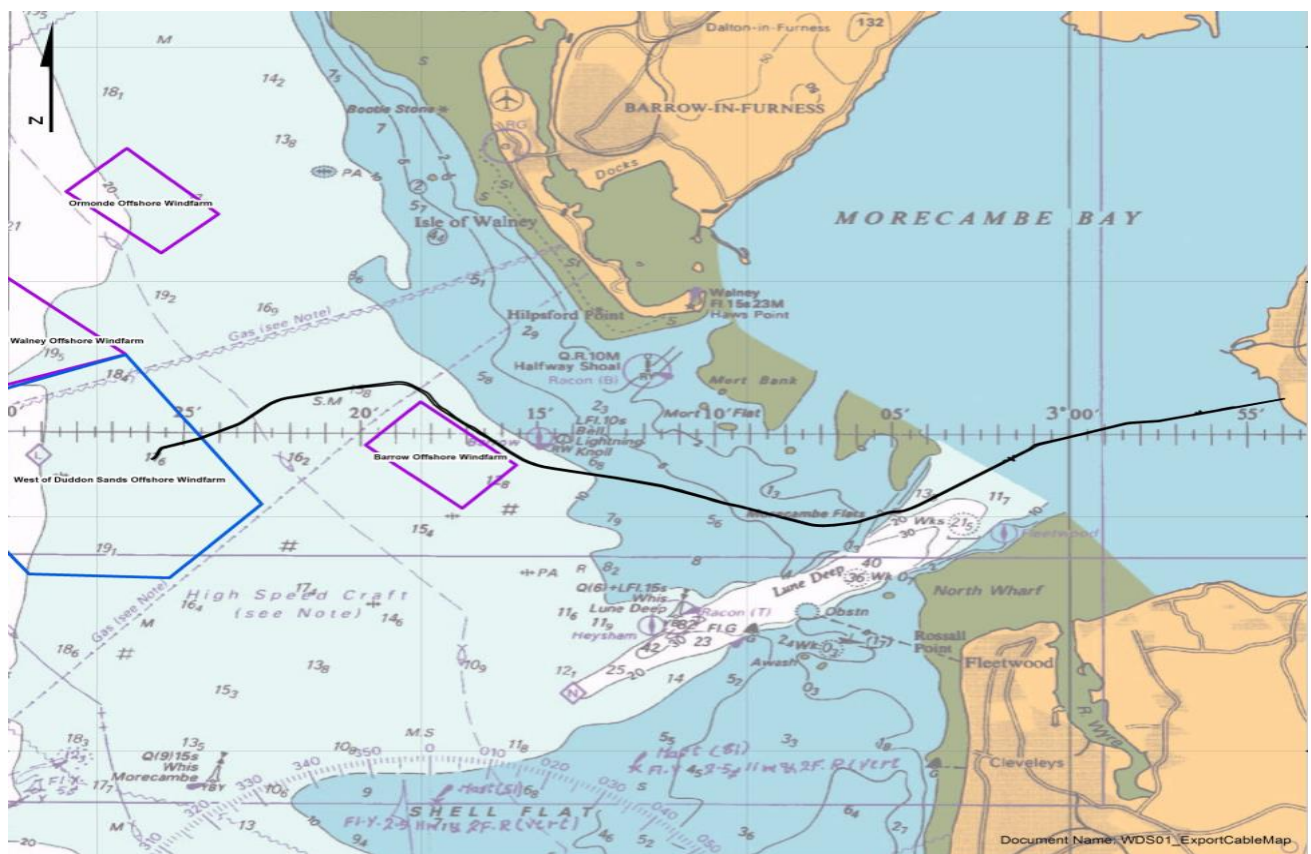
### Chapter Summary

This chapter summarises how we have undertaken our cost assessment for the WoDS transmission assets from the initial transfer value to the final transfer value, with an emphasis on the difference between the indicative and final transfer value. It provides a breakdown of the key cost categories that we have considered and highlights the decisions that we have made.

### WoDS Transmission Assets

- 2.1. The WoDS Wind Farm is located in the East Irish Sea, 14 km from Barrow-in-Furness, off the Cumbrian coast in northwest England, as shown in Figure 1 below. The WoDS Wind Farm consists of 108 3.6MW wind turbine generators, with a maximum output of 382MW at the OFTO point of connection to the onshore system<sup>3</sup>.

Figure 1 – Location of the WoDS Wind Farm and Transmission Assets



<sup>3</sup> The maximum possible output of the windfarm is 388.8 MW at the offshore platform. A maximum output of 382MW is allowed to be exported to the OFTO point of connection to the onshore system. The difference is attributed to cable losses. See page 4 of the PIM [link](#)

- 2.2. The WoDS Wind Farm is owned and financed by an unincorporated joint venture structure by two owners, namely Scottish Power Renewables (WoDS) Ltd (50%), and DONG Energy WoDS (UK) Ltd (50%) ("the Developer"). The transmission assets for the Project are currently jointly owned by the Developer.
- 2.3. The WoDS transmission assets connect to the WoDS Wind Farm at one offshore platform. The transmission assets that are transferring to the OFTO comprise of:
- One offshore platform and associated electrical equipment;
  - Two subsea export cables of approximately 41km each;
  - Two onshore cables of approximately 3km each; and
  - An onshore substation at Heysham (and two 400kV Switchgear bays within the existing NGET Heysham substation).
- 2.4. The boundary points for the WoDS transmission system are defined below:
- Offshore: Located at the 155/34kV transformer 34kV LV terminals; and
  - Onshore: Located between the 400kV main and reserve busbar clamps contained within NGET's Heysham substation.
- 2.5. The spares included in the transmission assets that are transferring to the OFTO include, amongst others, the following:
- A length of subsea cable;
  - 591m of 1000mm<sup>2</sup> and various lengths of 1600mm<sup>2</sup> onshore cable;
  - Various joints (transition, straight and cable repair joints);
  - Cable terminations; and
  - Other miscellaneous spares.

## WoDS cost assessment process overview

- 2.6. Since December 2012, we have worked with the Developer and our advisers to reach an assessment of the costs which ought to have been incurred in connection with the development and construction of the transmission assets. Set out below is an outline of the steps taken in the cost assessment process for the Project.
- September 2012 – December 2012: Ofgem analysis of the Developer information and benchmarking.
  - December 2012: Initial transfer value (£311m) published.
  - December 2012 – August 2013: Further information received from the Developer and analysed by Ofgem.
  - August 2013: Indicative transfer value (£296.2m) published.
  - August 2013 – May 2014: Ongoing construction.
  - May 2014 – July 2014: Cost updates provided by the Developer.

- July 2014 – November 2014: Cost discussions with the Developer.
- November 2014: Forensic accounting exercise completed.
- November 2014 – February 2015: Technical investigations completed
- February 2015: Developer provided final information to allow closure on issues raised by Ofgem and the forensic and technical advisors.
- March 2015: Draft cost assessment report released to the Developer for comment and the preferred bidder for information.
- June 2015: Draft cost assessment report published alongside the section 8A consultation.
- [TBC 2015]: The Authority determines the final transfer value when it determines to grant the licence to the successful bidder. The final cost assessment report is published after licence grant.

## Summary of indicative transfer value determination

- 2.7. The initial transfer value calculated in December 2012 was £311m. This value was based on information received from the Developer at an early stage in the construction and development of the Project. A number of the Developer's contracts were in the process of being finalised at the initial transfer value stage and these were considered in greater detail when the indicative transfer value was set.
- 2.8. The indicative transfer value of £296.2m was established in August 2013, comprising of the components listed in table 1. Our estimate was supported by our forensic accounting advisors, Grant Thornton ("GT"), and our technical advisors, Fichtner.

## Process for determining the assessed costs

### Accuracy and Allocation

- 2.9. The Project was constructed on a multi-contract basis. A forensic accounting investigation was undertaken by GT to ensure that the costs reported to us by the Developer were accurate, in that they represented the actual costs incurred by the Developer during the development and construction of the Project.
- 2.10. This investigation considered the main contracts in respect of the transmission assets for the following:
- The offshore substation supply and installation;
  - The offshore cable supply and installation;
  - The land cable supply and installation;
  - Onshore civil engineering works;
  - Onshore connection costs;
  - Geotechnical survey costs; and
  - Insurance costs.

2.11. We also checked that the costs were allocated to the correct asset category, in particular between generation assets and transmission assets. To assess whether the costs were allocated correctly we took into consideration the following:

- Metrics used when allocating costs between generation and transmission;
- The Developer's submissions using our cost reporting template;
- The findings of the forensic accounting investigation; and
- Cashflow payments related to the transmission assets.

### **Efficiency**

2.12. After costs had been appropriately identified and allocated, we performed an assessment of whether these costs had been incurred economically and efficiently.

### **Summary of assessment**

2.13. Following completion of the development and construction of the transmission assets, the Developer submitted costs amounting to a proposed final transfer value of £296.7m. Our assessment of the economic and efficient costs which have been or ought to have been incurred, in connection with developing and constructing the transmission assets, has established a final transfer value of £268.9m. Table 2 below provides a breakdown of the cost categories for the Project at each stage and change between the indicative transfer value, the Developer's submitted costs and the final transfer value. The FTV is inclusive of deductions as a result of the decisions Ofgem has made regarding the economic and efficient construction of the assets.



Table 2: Summary of cost categories

Category	Initial Transfer Value: Dec 2012 (£m)	Indicative Transfer Value: Aug 2013 (£m)	Final Transfer Value: Mar 2015 (£m)	Reasons for change between Indicative Transfer Value and Final Transfer Value
Capex	219.9	219.1	215.1	<p><u>Overall increases of:</u> £12.7m for onshore substation construction, onshore cable installation, project management and forex costs</p> <p><u>Offset by decreases of:</u> £5.9m in onshore civil engineering and land cable installation costs £4.7m in foreign exchange losses £3.3m in onshore substation project management costs £1.1m for removing estimated costs not incurred during construction £0.9m in waiting costs for cable load out £0.6m for removing pre-transfer O&amp;M costs £0.2m for reallocating costs from transmission assets to generation assets</p>
Development	37.6	36.8	31.0	<p><u>Overall increase of:</u> £2.6m in project management costs</p> <p><u>Offset by decreases of:</u> £5.9m for reallocating costs from transmission assets to generation assets as a result of shared cost allocation change £2.0m for removing pre-transfer O&amp;M project management costs £0.5m for removing estimated costs not incurred during construction</p>
Contingency	33.5	20.3	0	Contingency in the indicative transfer value was mostly used to in addressing additional Capex and development costs
IDC	17.9	17.9	20.7	IDC increase as a result of the extended construction period
Transaction	2.1	2.1	2.1	No change
<b>Total</b>	<b>311.0</b>	<b>296.2</b>	<b>268.9</b>	

2.14. The issues we have considered in setting the final transfer value are detailed below.

## Capex

2.15. The Capex element of the final transfer value is £215.1m. Overall the Capex has decreased by £4.0m from the indicative transfer value to the final transfer value. The majority of the Capex decrease is due to the reduction in onshore substation civil engineering and project management costs.

2.16. Table 3 below provides an overview of the Capex costs submitted by the Developer for the purpose of the final transfer value and the Capex costs allowed in the final transfer value.

Table 3: Capex cost submitted, included and not included in the final transfer value.

Category	Cost submitted by the Developer for final transfer value	Costs included in the final transfer value	Costs not included in the final transfer value
<b>Total Capex costs</b>	£231,921,224	£215,178,250	£16,742,974

2.17. GT undertook a forensic investigation of the highest value Capex contracts. The Capex contracts investigated were:

- JV Fabricom Lemants (Fabricom) and Scaldis Salvage & Marine Contractors (Scaldis) - offshore substation supply and installation;
- NKT Cables (NKT) – submarine cable supply;
- Visser & Smit Marine Contracting (VSMC) – submarine cable installation;
- NKT – land cable supply;
- Onshore civil engineering works and land cable installation; and
- National Grid Electricity Transmission (NGET) – connection costs.

### Accuracy and allocation of Capex costs

2.18. For the majority of Capex costs incurred on the Project, it was clear whether they should be allocated to the transmission or the generation assets in their entirety. For costs shared between generation and transmission assets, the Developer allocated certain proportions to the transmission assets using cost drivers, which differ depending on the nature of the work undertaken. Only those costs related to the transmission assets were allowed in the indicative and final transfer values.

2.19. In conducting our own analysis of these costs there were a number of items that were identified which we have discussed with the Developer. These items are set out below.

### Exchange rate movements

- 2.20. In accordance with the cost assessment principles set out in the Guidance, if a developer has hedged its foreign currency contracts, we will use that hedge rate for determining costs.
- 2.21. The contracts for the supply of the submarine cable by NKT, cable installation by VSMC and substation work by Scaldis and Fabricom were exposed to foreign exchange risk for 197.1m euros and 334m Danish kroner.
- 2.22. The Developer managed the exposure to foreign exchange movements through forward exchange rate hedges. The use of forward exchange rate hedges is consistent with the Guidance in respect of hedging for foreign currency movements. The Developer included a £7.7m exchange loss at the ITV stage. This value was then adjusted in their final cost submission for further foreign exchange losses. The submitted value increased to £9.4m.

### *Ofgem's view*

- 2.23. We agree that it was appropriate for the Developer to manage its foreign exchange exposures through the use of forward rates. We reviewed the Developer's foreign exchange dealings to ensure that they were calculated correctly and discovered some minor discrepancies. We also instructed the Developer to remove several trades that were included erroneously. This review has reduced the foreign exchange losses submitted by the Developer by £4.7m.

### Allocation of costs

- 2.24. As a result of our further discussions with the Developer after the publication of the indicative transfer value, certain costs have been re-categorised between transmission Capex and generation Capex. The net result of this is a £0.2m reallocation from transmission to generation costs.

### *Ofgem's view*

- 2.25. We have discussed these reallocations with the Developer and agree that the reallocations are appropriate.

### Operation and Maintenance (O&M) costs

- 2.26. The Developer's cost submission included costs in relation to O&M activities that it planned to carry out prior to the assets being transferred to the OFTO.

*Ofgem's view*

- 2.27. Following discussions with the Developer, we confirmed that the proposed O&M costs are not related to the development and construction costs of the transmission assets. Our cost assessment covers development and construction costs only. Accordingly, we have removed the £0.6m from the Developer's cost submission.

**Efficiency of Capex costs**

- 2.28. The Developer submitted increased Capex costs associated with onshore substation civil engineering works (and associated project management costs) and cable load out costs. For the purposes of informing our assessment of the efficiency of the Capex costs, we asked our technical consultant DNV GL to examine the onshore substation cost increases. We undertook further investigations to gain a better understanding of the issues to inform our views on whether the costs submitted by the Developer were economic and efficient. We have detailed below the main issues that were considered and how we have assessed these costs.

Onshore substation civil engineering works

- 2.29. The Developer contracted out the onshore civil engineering works. The scope of works included the building of the onshore substation and laying the onshore cable. The original contract price was £12.5m.
- 2.30. The Developer had concerns in May 2012 that the contractor was unable to meet the agreed construction programme. The Developer attempted to resolve these issues over the next 10 months. However, during this period, the contractor continued to miss agreed contract milestones. As a result, the civil engineering costs increased and led to delays to the Project's construction programme.
- 2.31. To manage potential further delays and costs escalations going forward, the Developer held further discussions with the contractor. As a result of these discussions and a realisation that that the contractor was unable to complete the works due to financial issues, a commercial deal known as a deed of settlement and variation ("the Deed") was agreed.
- 2.32. The Developer agreed an amount with the contractor for the works completed up to April 2013 ie just prior to the Deed being put in place. The agreed amount paid to the contractor was £7.5m. As part of the Deed, both parties agreed to a maximum additional amount of £9.6m to complete the remaining works. It was agreed any cost overruns above the £9.6m would be subject to a 50:50 cost share between the Developer and the contractor.
- 2.33. In addition to the Deed, a further £5.9m of which was a combination of cost overruns and variation orders shared between the Developer and the contractor were included in the Developer's final transfer value submission. This meant the total paid for the onshore civil engineering works was £23.7m. This is a significantly greater level of

cost than we have seen on other comparable projects for this type of activity. During Ofgem's assessment of the costs, the Developer informed Ofgem that a maximum of £23m would be paid to the contractor and proposed an adjustment to decrease costs by £0.7m.

*Ofgem's view*

- 2.34. Our advisors, DNV GL, reviewed the procurement process and the events leading to the subsequent overspend.
- 2.35. DNV GL noted that there were no exceptional requirements in respect of the civil engineering works that would explain the level of cost incurred. DNV GL considered that the highest bid was only £1.5m more than the successful bidder's.
- 2.36. In addition to taking advice from DNV GL, we considered representations direct from the Developer to explain the reasons for the escalation of costs. The Developer stated that once it became evident that the contractor was unable to complete the work to the agreed time and cost levels, it had acted prudently to address the issue while still keeping the overall wind farm project on schedule. It accepted that this entailed taking some decisions that added to the cost of the transmission civil engineering works; for example, proceeding with the commissioning of the first export cable before the civil engineering work on the second circuit was complete. This led to additional costs through variation orders and a significant increase in the Developer's project management requirements.
- 2.37. We recognise that the Developer attempted to minimise both Project delays and additional costs through the Deed. However, we are of the opinion that the Developer should have been able to cap the additional costs at the amounts agreed under the Deed, but this was not offered under the contract. At the time the Deed was agreed, significant progress had been made on the construction of the onshore substation and it may have been possible to forecast the remaining costs at that time. Some of the additional costs under the variation orders related to construction costs that could have been included in the scope of works under the original contract and agreed pursuant to the Deed. We are of the view that the additional amounts under the variation orders were not incurred economically and efficiently and therefore have not included the additional £5.9m in the final transfer value.

Onshore substation Project Management costs

- 2.38. The Developer included in its final submission an amount of £6.8m for onshore civil engineering works project management costs, which represent over 15% of the total onshore civil engineering contract cost.

*Ofgem's view*

- 2.39. DNV GL concluded that project management costs of 15% were excessive and a more typical percentage of such costs for this type of project would be in the range of 6-9%. These levels of project management costs are more consistent with those we have observed from other project cost submissions.
- 2.40. In light of this we have capped the PM at the higher end of DNV GL's range, recognising the issues encountered with the civil engineering contractor on this project. This reduces the Developer's submission by £3.3m.

Estimated costs not incurred

- 2.41. The Developer included estimates of some Capex costs at the ITV stage. In their final submission, the Developer included the actual costs that were incurred and some of the actual costs incurred were lower than the estimates. The Developer excluded £1.1m to account for these differences from their indicative cost submission.

*Ofgem's view*

- 2.42. We agree with the Developer's treatment of these costs and the reduction of the Capex costs by £1.1m is appropriate.

Cable load out costs

- 2.43. The Project's cable installation programme was phased and sections of cable were to be installed at different times. During construction, one of the subsea cables was damaged. The Developer procured an additional section of cable to carry out the repair of the damaged section. It considered collecting this additional section at the same time as it was going to collect the final batch of subsea cable.
- 2.44. The Developer's cable installation vessel arrived in Rotterdam ahead of schedule to load out the final batch of subsea cable to be transported to site and installed. It was the Developer's responsibility to confirm to the cable supplier, NKT, whether to load out the additional section of cable at the same time as the final batch of subsea cable. NKT gave the Developer a date by which they had to give instructions on how to proceed. The Developer did not confirm which section of cable NKT should load out first by this date. As a result, NKT postponed the loading and awaited further instructions from the Developer.
- 2.45. The lack of response from the Developer to NKT's request resulted in the cable installer VSMC claiming £0.9m for the delays incurred waiting in Rotterdam after the scheduled load out date.

*Ofgem's view*

- 2.46. The failure of the Developer to respond to one of its contractors which led to additional vessel standby costs in relation to VSMC was inefficient. Therefore we have not included the associated delay costs of £0.9m in the FTV.

Cable Supply

- 2.47. When we set the indicative transfer value we expressed concerns that the project's cable supply costs were high when compared to other projects. The Developer explained that the level of costs was influenced by market conditions at the time. We included the cost of £70.7m for cable supply but indicated that we would revisit this issue at the final transfer value stage. In the follow up discussions, we sought additional information on the cable design, for example, the chosen cable conductor size. We employed an external consultant who investigated this matter. We also investigated further the factors that influenced the level of costs submitted and reviewed the procurement process carried out by the Developer.

*Ofgem's view*

- 2.48. Our technical consultant BPP Cables investigated the factors that influenced the export cable design for the subsea and landfall sections. Indicative calculations by our consultant concluded that a smaller sized cable could have been sufficient for the project's subsea section. A smaller sized subsea cable was proposed by one cable supply bidder.
- 2.49. However, the Developer explained that the calculation was not in line with International Electrotechnical Commission calculation standards and the revised, compliant calculations resulted in the bidder proposing a larger cable size for the subsea section. After taking into consideration the conclusions of our consultant and the additional information provided by the Developer, we have concluded that the Developer has sufficiently justified their decision-making process in respect of the cable procurement and design and that the process was efficient.
- 2.50. We note the Developer's concerns regarding the market conditions that influenced the project's cable supply costs. Our analysis indicates that the costs submitted are within the range that can be reasonably derived from industry data at the time. We have therefore accepted that the subsea cable supply costs can be included in the final transfer value in this instance, but we will continue to review cable design in all future projects.

## **Development costs**

- 2.51. The assessed development costs for the WoDS transmission assets are £31.0m. These are costs incurred by the Developer which were outside the scope of the main construction contracts. Our cost assessment is informed by the outcome of GT's investigation and our own analysis. For the purpose of informing our cost

assessment, GT investigated the Project's development costs. The main outcome of the investigation was to confirm the basis for cost allocation metrics between the transmission and generation assets.

### **Accuracy and allocation of development costs**

2.52. When the indicative transfer value was set in August 2013, development costs were estimated at £36.8m. The Developer provided a final cost submission for development costs of £39.5m. The £2.6m increase in development costs for the onshore project management costs were offset by decreases as follows:

- For the Project's indicative transfer value, a ratio of 36:64 was used to allocate shared costs between transmission assets and generation assets. This metric was derived by taking the total cost of the transmission assets as a percentage of total wind farm costs. Through discussions with Ofgem, the Developer undertook a further review of its allocation metrics, which resulted in a revised allocation rate of 32:68. The Developer's final cost submission was subsequently amended and this resulted in a reduction of £5.9m. This was applied across all assets, including the offshore substation and the land cables; and
- The Developer included £2.0m project management costs associated with pre-asset transfer O&M in the development expenditure. As described previously, these costs have been excluded from the FTV as they are not related to the construction or development of the project. This has resulted in the removal of the £2.0m from the transmission costs.
- As a result of the review carried out on development costs, the Developer also removed £0.5m of estimated costs that were not actually incurred.

#### *Ofgem's view*

2.53. We have reviewed the detailed timesheets and estimates for project management supplied by the Developer and considered the rationale for these allocations. We consider that in light of the reallocations, costs have now been appropriately allocated. This has resulted in a reduction of £8.4m in the Developer's originally submitted final costs.

### **Efficiency of Development Costs**

2.54. We have considered the Developer's submission and the level of their proposed development costs. This included a £2.6m increase in respect of PM costs. Initially, we had concerns regarding the level of development costs incurred with a project of this size and complexity. After we reviewed the metrics used to allocate some of these costs and took into account the reduced allocation to the transmission assets, we now consider that the revised costs are appropriate.



## Contingency

2.55. The assessed costs do not contain a separate contingency value. The contingency provision of £20.3m at the indicative transfer value stage has primarily been utilised to deal with Capex and development cost increases.

## Interest during construction

2.56. The total IDC calculated for the WoDS transmission assets in the assessed costs is £20.7m. We reviewed the Developer's IDC submission which has resulted in a number of IDC changes. The net impact of these changes was a £2.8m increase from the indicative transfer value. This is a result of the extended construction timeline and increased Capex expenditure due to problems encountered with cable installation. However, this represents a £2.5m reduction to the Developer's IDC submission of £23.2m.

## Accuracy and allocation of IDC

### IDC rates used

2.57. The Project was constructed over the period March 2010 to August 2014. In July 2011, Ofgem consulted on the interest rate to be used to calculate the level of IDC for projects in the transitional tender rounds. We published our decision letter and explained that we will apply a capped rate of 8.5% from 1 December 2011. IDC incurred prior to this date is capped at a rate of 10.8%. A further consultation was conducted on the interest rate in 2013 and new cap was introduced from April 2014. Any IDC incurred after 1 April 2014 is capped at 8%.

2.58. Three different IDC rates have been applied across the period of the Project:

- 10.8% from March 2010 until November 2011;
- 8.5% from December 2011 until March 2014; and
- 8% from April 2014 to August 2014.

2.59. It should also be noted that the Developer corrected their IDC submission to reflect that they had applied the incorrect IDC rate of 8.5% when 8% should have been used. The resulting £0.1m reduction was outside of the Developer's final cost submission.

### Completion of transmission assets

- 2.60. In determining the Project's IDC we have discussed with the Developer the operational status of the transmission assets. In particular, we reviewed the IDC submission and identified that the Developer had requested IDC for the period January 2014 to the end of August 2014 on elements of the transmission assets that were in service and operational. IDC can only be recovered for financing costs incurred by a Developer in the period of developing and constructing the transmission assets. Part of the Project became operational in January 2014; therefore, we removed the IDC claimed on these operational elements. This resulted in a reduction of £1.1m.

### **Efficiency of IDC**

- 2.61. A 1km section of the Project's second export cable was damaged during installation in May 2013. Following inspections, the Developer decided to replace the damaged cable, the costs for which were not included in the Developer's final cost submission or in the FTV. The repair was to be carried out after all the export cables had been completed, but the Developer was unable to do this before the consenting window<sup>4</sup> closed in September 2013. The next window available for installation was April 2014. However, the Developer did not commence installation of the replacement cable until July 2014, citing difficulties in mobilising an installation vessel prior to this date.

#### *Ofgem's view*

- 2.62. We consider that the Developer should have been ready to begin installing the replacement cable in April 2014. We therefore conclude that IDC claimed in the period April to June 2014 should not be included in the final transfer value. This has reduced the IDC by £1.2m. IDC has been included for the remainder of the construction and commissioning work on the second export cable up until it was available for the transmission of electricity.
- 2.63. A further adjustment was made to the IDC to take account of the costs that had been disallowed from Capex. This reduced the IDC amount by a further £0.2m.

### **Transaction costs**

- 2.64. The indicative transfer value contained an estimate of the transaction costs of £2.1m at that time. The Developer has subsequently submitted a firm estimate of the transaction costs they expect to incur to asset transfer. The total of these items results in the transaction cost element of the Developer's submitted transfer value being £2.1m.

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<sup>4</sup> The consenting window was the period that Natural England would allow work to be carried out in the intertidal area; the allowed period was from 1 April to 31 August (this restriction was to avoid any impact on wintering birds).

### **Accuracy and allocation of transaction costs**

2.65. The Developer provided information regarding both internal and external costs. For their internal costs they provided information on the personnel who were involved and their day rate relating to the work undertaken and time spent on the tender process as opposed to the construction of the Project or generation activities. The external costs related to professional services in respect of the tender, e.g. legal, accountancy and technical. These totalled £2.1m.

#### *Ofgem's view*

2.66. We have concluded that the costs provided by the Developer were allocated appropriately and have included the £2.1m in the final transfer value.

### **Efficiency of transaction costs**

2.67. Transaction costs can only be provided to us by developers to a reasonable degree of accuracy towards the end of the tender process. The transaction costs submitted by the Developer represent approximately 0.8% of the total Capex and development costs. We have considered the types of resource costs incurred in relation to this Project's tender process and the level of transaction costs incurred appear reasonable in comparison with other projects.

### **Confirmations in relation to tax benefits**

2.68. The indicative transfer value was calculated on the basis that the purchaser would obtain the full benefit of all available capital allowances. If this was not the case for the final transfer value we would reduce the assessment of costs for an amount that reflects the value of the tax benefit retained by the Developer. For the final transfer value the Developer has confirmed that the purchaser will be able to obtain the full benefit of all available capital allowances and therefore it has not been necessary to reduce the assessment of costs.

## 3. Conclusion

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3.1. In conclusion, in accordance with Regulation 4 of the Tender Regulations, the Authority has assessed the economic and efficient costs which ought to have been incurred in connection with developing and constructing the WoDS transmission assets is £268,895,686.

## Appendices

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## Appendix 1 - Glossary

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### **A**

#### Authority

The Gas and Electricity Markets Authority

### **C**

#### Capex

Capital Expenditure - defined as the costs involved in the delivery, construction and installation (including civil works) of offshore transmission assets

### **D**

#### Developer

WoDS Wind Farm Limited

#### DNV GL

Det Norske Veritas Germanischer Lloyd

### **G**

#### GT

Grant Thornton

### **I**

#### IDC

Interest During Construction

#### IM

Information Memorandum detailing the projects details released to QTT bidders through the tender portal.

#### ITT

Invitation to Tender

### **M**

#### MW



## Offshore Transmission: Cost Assessment for the West Of Duddon Sands transmission assets

Megawatt

MVA

Megavolt-Ampere

**O**

OFTO

Offshore Transmission Owner

**P**

Project

The development and construction of the WoDS offshore transmission assets

PTRA

Post Tender Revenue Adjustment

**Q**

QTT

Qualification to Tender