ofgem E-Serve Promoting choice and value
for all gas and electricity customers

Offshore Transmission: Cost Assessment for the London Array transmission assets

Decision

Publication date:
10 September 2013

Contact: Roger Morgan, Senior Manager Developer Engagement
Team: Offshore Transmission
Tel: 020 7901 0525
Email: roger.morgan@ofgem.gov.uk

Overview:

This document sets out our cost assessment for the London Array transmission assets and the key principles that we have applied in our cost assessment process for the second transitional tender round. The Authority has used the assessment of costs to determine the value of the London Array transmission assets. The Authority has granted an offshore transmission licence to Blue Transmission London Array Limited, incorporated by the consortium of Barclays Infrastructure Funds Management Limited (acting in its capacity as manager of Barclays Integrated Infrastructure Fund) and Mitsubishi Corporation.

Blue Transmission London Array Limited 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 referred to in this document.

Context

Ofgem and the Department for Energy and Climate Change (DECC) have developed a regulatory regime for offshore electricity transmission. A key part of this regime is that offshore electricity transmission licences will be granted to Offshore Transmission Owners (OFTOs) 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[1].

The Electricity (Competitive Tenders for Offshore Transmission Licences) Regulations 2010 ("the Tender Regulations") provide the legal framework for the process which Ofgem run for the grant of offshore electricity transmission licences in the first and second transitional tender rounds. 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 in the transitional regime. The Tender Regulations provide for an estimate and 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 successful bidder.

This is the eighth cost assessment report for offshore transmission published by Ofgem, and the first relating to the Transitional Tender Round 2 projects.

Associated documents

- Kema report on benchmarking Link
- Ernst and Young report on Interest During Construction Link
- The Electricity (Competitive Tenders for Offshore Transmission Licences) Regulations 2010 Link
- Offshore Transmission: Tender Rules Link
- Interest During Construction for Transitional Tender Rounds Link
- Offshore Transmission: Guidance for Cost Assessment Link

[1] http://www.ofgem.gov.uk/Networks/offtrans/pdc/cdr/cons2009/Documents1/Main.pdf

Contents

Executive Summary

This document sets out Ofgem's assessment of the costs which ought to have been incurred in connection with the development and construction of the transmission assets for the London Array offshore transmission project. It also details the cost assessment process we have undertaken.

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

1. The initial calculation of costs was £475.7m ("the initial transfer value"). This was communicated to the developer and published in the preliminary information memorandum (PIM) in November 2010.
2. The initial transfer value was updated to £428.4m ("the indicative transfer value") as a result of further information being available and continuing analysis. This updated calculation was communicated to the developer and published in the project information memorandum (IM) in November 2011.
3. We have assessed that the cost of developing and constructing the transmission assets is £461.6m ("the assessed costs"). We have determined that the amount of £2.7m shall be deducted from the assessed costs for capital allowances and therefore the amount to be paid to the developer by the OFTO for the transmission assets is £458.9m ("the final transfer value").

The key components of the initial transfer value, indicative transfer value, assessed costs and the final transfer value are given in table 1 below, followed by a summary of the reasons for change between the indicative transfer value and the assessed costs.

Table 1: Summary of cost components

Category	Initial transfer value: November 2010 (£m)	Indicative transfer value: November 2011 (£m)	Assessed costs (£m)	Final transfer value (£m)
CAPEX	374.9	345.4	343.9	343.9
Development	31.9	31.2	48.8	48.8
IDC	68.9	51.8	66.5	66.5
Transaction	0	0	2.4	2.4
Capital allowances	0	0	0	-2.7
Total	**475.7**	**428.4**	**461.6**	**458.9**

CAPEX

The assessed costs CAPEX is £1.5m less than the indicative transfer value CAPEX. This included increases of:

- £12.1m for standby vessel costs associated with Nexans cable supply delays;
- £5.5m for variations to the original contract value for export cable jointing, terminations and independent cable survey;
- £1.8m for contractor project management costs due to cable installation delays; and
- £1.2m for costs associated with onshore substation repairs.

These increases were offset by reduction of:

- £17.2m for a reallocation to development costs;
- £3.6m to reflect removal of assets as result of changes to the offshore boundary point;
- £0.7m due to a correction to the onshore transformer cost; and
- £0.6m for miscellaneous increases in contract costs.

Development costs

The increase in the development costs is mainly due to the re-allocation of £17.2m (net) of CAPEX costs to development costs. There was also extra project management work due to construction delays causing an increase in development costs. This was partly offset by a change in the ratio of common costs between the transmission assets and the generation assets.

Interest during construction (IDC)

The IDC amount has increased as a result of a longer construction period, and an increase in development costs.

Transaction costs

The transaction costs are composed of both internal and external resource costs of the tender process for the developer as well as tender fees that the developer has paid to Ofgem through the tender process. We have assessed these costs to be £2.4m.

Capital Allowances

The developer has confirmed that the purchaser will not be able to obtain the full benefit of all available capital allowances for the London Array project. Therefore, to determine the final transfer value, an amount of £2.7m has been deducted from the assessed costs to take account of the benefit retained by the developer.

Final transfer value for London Array

In accordance with Regulation 4(2) (b) of the Tender Regulations, the assessed costs of the London Array transmission assets is £461,618,457. The final transfer value as determined by the Authority under Regulation 4(6) of the Tender Regulations, reflecting the adjustment to the assessed costs for capital allowances is £458,904,457.

1. The Cost Assessment Process

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 in the transitional regime. This chapter sets out the process that we followed in carrying out the cost assessment for London Array offshore transmission assets (hereafter 'London Array').

Cost assessment principles

1.1. The cost assessment principles we have adopted in relation to various cost categories for transitional rounds and the reasoning for such principles can be found in the document 'Offshore Transmission: Guidance for Cost Assessment'[2] (hereafter 'the guidance'). We intend to apply these principles in our cost assessment process for all the transitional projects. However, we may need to vary them or apply additional principles where appropriate in light of the analysis undertaken in respect of such projects.

Overview of the cost assessment process

1.2. The Tender Regulations provide the legal framework for the process which Ofgem will run for the grant of offshore electricity transmission licences. This process includes assessing the economic and efficient costs of constructing and developing the offshore transmission assets to be transferred to the new OFTO.

1.3. 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

[2]www.ofgem.gov.uk/publications-and-updates/offshore-transmission-guidance-cost-assessment

incurred in connection with the development and construction of those transmission assets.

1.4. The remainder of this chapter details the process and principles that we apply to all transitional round projects, including London Array. Chapter 2 provides the detail as to how these have been applied to the specifics of the London Array project.

Data collection

1.5. To undertake this exercise we have gathered and reviewed a range of information and supporting evidence. Detailed cost information was provided by the developer in the form of cost reporting templates, contract values, asset cost schedules and cash flows. These relate to the actual/forecast costs of construction contracts and development costs related to the transmission assets being transferred to the successful bidders.

1.6. The data collection to inform the cost assessment process commenced in September 2010 and has continued to date. Throughout this period we have worked closely with the developer of the offshore transmission assets. The information we have gathered relates to the following cost categories that are involved in the development and construction of the transmission assets:

- Capital expenditure;
- Development costs;
- Interest during construction; and
- Transaction costs.

1.7. The developer has also provided supporting evidence to substantiate their cost submissions including, amongst other things, contract documentation, supplier payment lists and asset schedules.

Process stages for cost assessment

1.8. The cost assessment process for all of the transitional projects involves the key stages set out below.

Initial transfer value

1.9. The initial transfer value calculated in November 2010 was based on cost submissions by the developer for the project. That value was made available to bidders at the Pre-Qualification (PQ) and Qualification to Tender (QTT) stages of the tender process. The letter we sent to the developer at that time indicated

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. In November 2011, we provided the indicative transfer value for the commencement of the Invitation to Tender (ITT) stage of the tender process. That value was used for the tender revenue stream bids submitted by bidders at this stage in the tender process. The letter we sent to the developer in November 2011 indicated that the calculation might be updated as a result of any further information provided by the developer and our continuing analysis. For all projects other than Barrow, that letter also provided comfort (subject to certain matters) that the minimum transfer value the developer would receive for the transmission assets once their project was completed would be 75% of the indicative transfer value.

Assessed costs

1.11. Once the transmission assets are complete or are close to completion and the developer has indicated that they have documentation to support an assessment, we commence an exercise to determine the assessed costs.

1.12. A draft of the cost assessment report, including the amount of the assessed costs, is sent to the developer and the preferred bidder for the relevant project. This enables either of these parties to comment on the factual nature of the report prior to the cost assessment being finalised by Ofgem.

1.13. The assessed costs are then incorporated by the preferred bidder into their tender revenue stream (TRS) for the purposes of the section 8A licence consultation and we do not expect any changes to the assessed costs after this point. The draft cost assessment report is published alongside the section 8A licence consultation.

Final transfer value

1.14. The assessed costs is then used by the Authority to determine the final transfer value, 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 is published on the Ofgem website.

1.15. 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 final transfer value. Where the assessment of costs is to be finalised after

commencement of the section 8A consultation, the section 8A TRS would continue to reflect the indicative transfer value.

1.16. Where the Authority completes the assessment of costs after the section 8A consultation and sufficiently in advance of Licence grant, the post tender revenue adjustment term (contained in amended standard condition E12-A3 of the OFTO Licence) (PTRA) may be utilised at Licence grant in order to enable a transfer of assets for 100% of the final transfer value. If, under exceptional circumstances, this is not possible then Ofgem may determine that deferred consideration would be paid by the OFTO to the developer on conclusion of our cost assessment and we would utilise a PTRA term after Licence grant to reflect the final transfer value. A provision to use the PTRA term post-licence grant would need to be included in the amended standard conditions to enable this to happen.

Cost assessment analysis

1.17. We have applied two tests throughout the cost assessment process and have been supported throughout this process by Grant Thornton as financial adviser and KEMA and SKM as technical advisers.

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

1.18. As a first test, we have checked the accuracy of the developer's data and the appropriateness of cost allocations, in particular, between the offshore generation and transmission assets. Throughout the cost assessment process the developer has provided cost information to us on an ongoing basis. Where we have identified discrepancies in how the developer has allocated these costs we have checked with the developer to assess if they have been allocated to the correct asset category and made adjustments accordingly.

1.19. To support the cost assessment process we have also undertaken a forensic accounting investigation. The scope of this investigation was shared with the developer in advance. This investigation was based on the final costs that the developer has provided to us and was applied 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 focussed on the most expensive contract and/or contracts which had material increases in costs.

1.20. The forensic accounting investigation was undertaken primarily to validate the cost allocations provided by the developer. This may have indicated the need for amendments to the developer's submissions to reflect, for example:

- the actual costs incurred (eg in respect of exchange rates on foreign currency payments); and

- more relevant metrics for the allocation of shared service costs.

1.21. Where amendments were in our opinion required and in the absence of further evidence from the developer to substantiate the original allocation, we incorporated the recommended changes from the forensic accounting investigation.

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

1.22. Under test two we sought to assess through appropriate analysis whether the costs had been economically and efficiently incurred by the developer. Where possible, we have sought to apply benchmarking and where industry wide cost indices were unavailable we have reviewed data from other projects within the transitional tender rounds. This analysis has included benchmarking across the projects (see 1.23 below) and analysis in relation to funding interest rates. We consider such approaches to be an important tool in assisting us in ensuring these costs are economic and efficient.

1.23. To help us calculate the indicative transfer value we undertook a benchmarking exercise using comparable costs across all projects in the transitional tender rounds to identify any cost outliers across the main cost categories. Any cost outliers identified through the benchmarking exercise were then subject to further review. This exercise examined individual cost categories including:

- total cost of transmission assets as a percentage of overall project cost;
- total cost of transmission assets per MW kilometre;
- cost of offshore substation per secure MW;
- cost of offshore substation (platform and electrical) per installed MW;
- cost of submarine cable supply and installation per kilometre;
- cost of transformer per MVA;
- cost of reactive equipment per kilometre of cable; and
- development cost as a percentage of transmission assets.

1.24. This benchmarking exercise informed our communication to the developer in our letter of November 2011 which set out the indicative transfer value.

1.25. We have also considered the procurement processes adopted by the developer to obtain economic and efficient transmission asset costs. We have noted the differing procurement approaches taken by the developer for the transmission assets in the transitional tender rounds. We will keep the efficiency of developer procurement and contract management approaches under close review for future cost assessments.

1.26. Where CAPEX or development costs have increased since the indicative transfer value was set, the developer was to provide supporting documentation to justify why these increases occurred. Depending on the nature of the increase,

we have undertaken a technical investigation which focussed on, for example, a particular cost increase in a distinct contract or multiple increases across several contracts.

2. London Array Cost Assessment

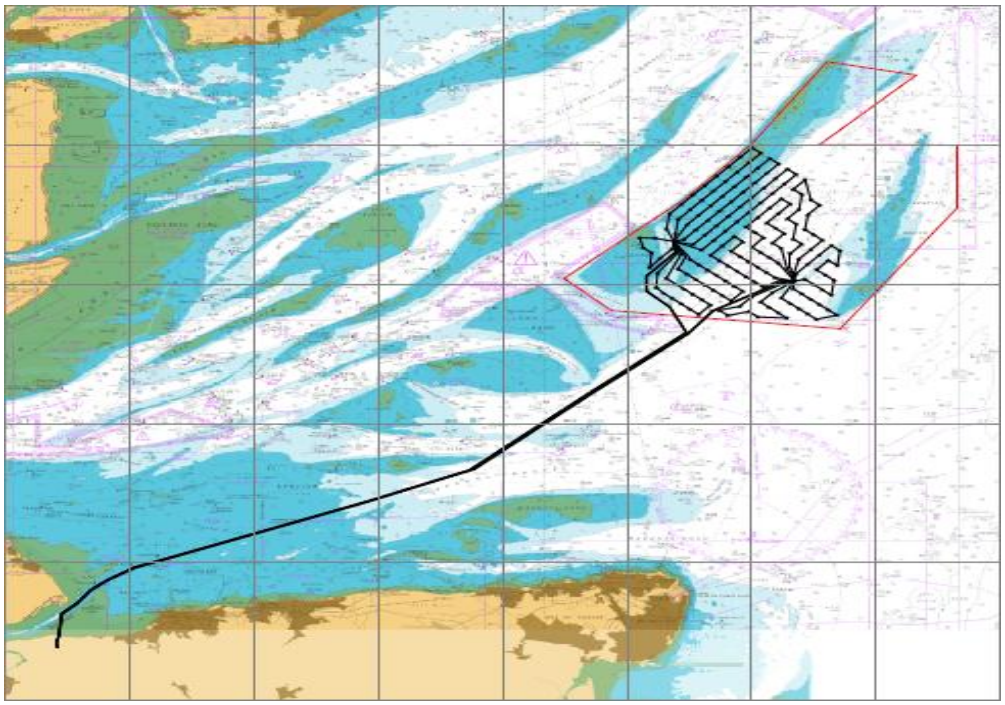
Chapter Summary

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

London Array transmission assets

2.1. The London Array Wind Farm is located in the Thames estuary, approximately 20km from the Essex and Kent coasts. The London Array Wind Farm consists of 175 Siemens 3.6MW wind turbine generators (see figure 1), with an installed capacity of 630MW. The London Array transmission assets became fully operational in December 2012.

Figure 1: Location of the London Array transmission assets



Source: London Array

2.2. The London Array project has three parent 'Participant' companies in an unincorporated joint venture. The Participants (and their respective interests) are Dong Energy (comprising Dong Energy London Array Limited and Dong Energy London Array II Limited) (50%), E.ON Climate and Renewables UK London Array Limited (30%), and Masdar Energy UK Limited (20%).

2.3. The London Array transmission assets connect to the London Array wind farm at two offshore platforms. The transmission assets that are transferring to the OFTO comprise of:

- two offshore platforms and associated substations;
- four subsea export cables each of a total length of approximately 54km;
- four 132kV onshore cables; and
- an onshore substation at Cleve Hill[3].

2.4. The project's transmission and generation boundary points are defined below:

- Offshore: Located at the 33kV breakers at transformer lower voltage (LV) terminals where the metering will be located; and
- Onshore: Located at the 400kV breakers bus bar clamps within the National Grid Electricity Transmission's 400kV substation.

2.5. Spares will be transferred to the OFTO according to the agreement with the developer.

London Array cost assessment process overview

2.6. Since September 2010, we have worked with the developer and our advisers to reach the assessed costs which will be used by the Authority to determine the transfer value of the transmission assets. The bullets below outline the steps that have been taken in the cost assessment process for the London Array project.

- September 2010: Developer Information Request (DIR) sent to developer.
- October 2010: Developer submits DIR.
- October – November 2010: Ofgem analysis of developer information and benchmarking.
- November 2010: Initial transfer value (£475.7m) published.
- December 2010 – October 2011: Further information received from developer and analysed by Ofgem.
- November 2011: Indicative transfer value (£428.4m) published.

[3] The electrical equipment at Cleve Hill will be transferred to the OFTO, but the ownership of the site at Cleve Hill remains with London Array.

- December 2011 – September 2012: Cost reporting updates performed with developer over the course of the construction of the project, up to the final cost submissions.
- October 2012 – December 2012: Forensic accounting and technical investigations.
- January - February 2013: Closure on issues raised by the forensic and technical consultants.
- July 2013: Draft cost assessment report released to developer for comment and preferred bidder for information.
- July 2013: Draft report published alongside a consultation on the licence under section 8a of the Electricity Act 1989.
- September 2013: Authority determines the transfer value when it determines to grant the licence to the successful bidder. Final cost assessment report will be published after licence grant.

Summary of indicative transfer value determination

2.7. The initial transfer value in November 2010 was £475.7m. This was based on capital expenditure and development costs of £406.8m and IDC of £68.9m. This was an estimated value, 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 stage and these were considered in greater detail when the indicative transfer value was set.

2.8. We established an indicative transfer value of £428.4m in November 2011. This was based on capital expenditure and development costs of £376.6m and IDC of £51.8m. The difference from the initial transfer value is due to cost changes arising from our assessment of the accuracy and allocation of the developer's cost submissions, and assessing if the developer's incurred costs are economic and efficient. Our assessment was assisted by the Grant Thornton investigation (which assessed accuracy and allocation issues).

Process for determining the assessed costs

2.9. In chapter 1 we set out the two tests that were applied to the costs submitted by the developer for determining the assessed costs. These were to assess:

- the accuracy and allocation of the costs; and
- whether these costs were incurred economically and efficiently.

2.10. These two tests were applied to the developer's CAPEX, development, IDC and transaction costs submissions. In this chapter we identify the outcomes of applying these tests.

Accuracy and Allocation

2.11. The London Array project was constructed on a multi contract basis. A forensic accounting investigation was undertaken by our adviser Grant Thornton 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 period.

2.12. This investigation covered the three main contracts in respect of the transmission assets, those being: (1) the cable supply; (2) cable installation; and, (3) onshore and offshore substations.

2.13. In addition to the contract analysis we asked Grant Thornton to conduct a review of the internal project management costs.

2.14. We also checked that the indirectly incurred costs were allocated to the correct asset category and that they had been allocated correctly between generation and transmission. To assess whether the costs have been allocated correctly we have taken into consideration the following:

- metrics used when allocating costs between generation and transmission;
- developer's submissions using our cost reporting template;
- the findings of the forensic accounting investigation and review; and
- cash flow payments related to the transmission assets.

Efficiency

2.15. After costs had been appropriately identified and allocated, we performed an assessment of whether these costs had been incurred economically and efficiently. We took into consideration the following:

- the findings of the forensic accounting investigation and review of internal project management costs by Grant Thornton;
- the findings of the technical investigation by Sinclair Knight Merz (SKM); and
- our decision following consultation on IDC for offshore transmission assets.

Project specific issues

2.16. The London Array project experienced issues that have led to increased costs being incurred, mainly in relation to delays in the cable delivery, cable installation processes and commissioning of the onshore substation. In assessing the costs for the project, we have discussed in detail with the developer:

- the accuracy and allocation of costs between the transmission and generation assets;
- the causes of the additional costs being incurred; and

- the decisions and actions that were taken by the developer in light of the project issues and whether these costs have been economically and efficiently incurred.

2.17. These issues are discussed in further detail in subsequent sections of the report.

Cost summary

2.18. Following completion of construction and development of the transmission assets, the developer submitted costs amounting to a proposed transfer value of £479.3m[4]. 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 £458.9m. Table 2 on the next page provides a breakdown of the changes in cost for the main components of the project between the initial transfer value, the indicative transfer value, the assessed costs and the final transfer value.

[4] The developer's original submission contained a spreadsheet error which underestimated its IDC claim by £3.8m. The £479.3m quoted above reflects the developer's submission after this error had been rectified.

Table 2: Summary of cost breakdown history

Category	Initial Transfer Value: November 2010 (£m)	Indicative transfer value: November 2011 (£m)	Assessed costs (£m)	Reasons for change between Indicative transfer value and assessed costs
CAPEX	374.9	345.4	343.9	Increases of: £12.1m for standby vessel costs associated with cable supply delays. £5.5m for variations to the original contract value for export cable jointing, terminations and independent cable survey. £1.8m for contractor project management costs due to cable installation delays. £1.1m for costs associated with onshore substation repairs. Offset by decreases of: £3.6m to reflect removal of assets as result of changes to the offshore boundary point. £0.7m due to a correction to the onshore transformer cost. £0.6m for miscellaneous changes in contract costs. Note there is also a net reallocation from CAPEX to development costs of £17.2m.
Development Costs	31.9	31.2	48.8	Increase of: £10.6m for project management costs due to project delays. £0.8m for miscellaneous property and consent costs. Offset by decreases of: £5.3m for removal of insurance costs. £3.2m for the change in the transmission asset allocation percentage. £2.5m for the sale of unused land at Cleve Hill farm and Graveney Farm. Note there is also a net reallocation from CAPEX to development costs of £17.2m.
IDC	68.9	51.8	66.5	The IDC amount has increased as a result of a longer construction period, and an increase in development costs.
Transaction	0	0	2.4	Transaction costs have been added as they are assessed at the end of the cost assessment process.
Total (Assessed costs)	**475.7**	**428.4**	**461.6**	
Capital allowances	0	0	-2.7	The developer has confirmed that the OFTO will not be able to obtain the full benefit of all available capital allowances; therefore, a reduction of £2.7m has been made.
Total (Final transfer value)	**475.7**	**428.4**	**458.9**	

2.19. The issues we have considered in setting the assessed costs are detailed below.

CAPEX

2.20. The CAPEX element of the assessed costs is £345.2m, which is £1.5m lower than the CAPEX element of the indicative transfer value.

Accuracy and allocation of CAPEX costs

2.21. Our adviser, Grant Thornton, undertook a forensic investigation of the three highest value CAPEX contracts. These accounted for 86% of the total CAPEX costs submitted by the developer at the time the investigation was undertaken. The CAPEX contracts investigated were:

- Nexans Norway AS (Nexans) – export and land cable supply;
- Visser & Smit Marine Contracting Limited (Visser & Smit) – export and land cable installation; and
- Siemens Transmission and Distribution Limited (Siemens) – onshore and offshore substation.

2.22. For the majority of CAPEX costs incurred on the project, it was relatively clear whether they should be allocated to the transmission or the generation assets in their entirety. Where costs were split between generation and transmission assets, the developer allocated the percentage 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 initial transfer value, indicative transfer value and the assessed costs.

2.23. In conducting our own analysis of these costs there were a number of items that were identified which we have discussed in detail with the developer. These items are discussed below.

Change of boundary point

2.24. During the course of the discussions between the developer and the preferred bidder, the offshore boundary point has changed. This has necessitated the removal of 33kV switchgear, an insulated bus bar and associated offshore earthing auxiliary transformers from the developer's submission.

Ofgem's view

2.25. We have discussed this matter further with the developer and confirmed the equipment that is to remain with the generator. As these assets will not transfer to the OFTO we have removed £3.6m from the developer's CAPEX submission.

Onshore transformer cost

2.26. The developer's indicative transfer value submission incorrectly stated an onshore transformer cost as a Euro (€) value, rather than the correct Sterling (£) value. In doing so the developer had understated the true cost of the onshore transformer equipment, which was subsequently corrected for the assessed costs.

Ofgem's view

2.27. As part of our analysis for the assessed costs we have correctly stated the onshore transformer cost. This has resulted in a CAPEX reduction of £0.7m from the developer's submission.

Allocation of costs

2.28. Since publication of the indicative transfer value, we have continued to liaise with the developer on cost allocations between the overarching cost categories of CAPEX and development costs. As part of these discussions, we have agreed to re-categorise certain costs between CAPEX and development costs. The net result of this is a £17.2m reallocation from CAPEX to development costs.

Ofgem's view

2.29. We have discussed each of these reallocations with the developer and agree that the reallocations are appropriate.

Efficiency of CAPEX costs

2.30. The developer has submitted additional CAPEX costs associated with an electrical failure at its Cleve Hill onshore substation (hereafter referred to as "the Cleve Hill incident") and export cable delays, including vessel standby costs.

2.31. For the purposes of informing our assessment of the efficiency of the CAPEX costs, our technical adviser, SKM, investigated these increases. We undertook further investigations to gain a better understanding of the issues, and to inform our views on whether the additional costs proposed by the developer were economic and efficient. We have detailed the main issues and our views on how these costs should be assessed below.

The Cleve Hill incident

2.32. On 28th March 2012, a cable on the Cleve Hill onshore substation experienced a failure. The cables and terminations had been fully tested and commissioned and had been in service for 127 hours. The main contractor to London Array for the

onshore and offshore substations was notified of the incident, and alongside its subcontractors, commenced an investigation to determine why the failure occurred.

2.33. Investigations found that the failure was most likely due to a defect in the cable termination. Following further investigation, all six cable terminations were recommended for replacement.

2.34. To replace all six cable terminations London Array considered a number of options, which included options for repair under warranty and repair by an alternative contractor.

2.35. In analysing each of the options, London Array considered the technical, commercial and programme implications. Based on this analysis, it decided the best option was to replace the existing cable and terminations with alternative contractor's cable and terminations, which were completed partly under warranty at an additional cost[5] of £1.1m.

Ofgem's view

2.36. London Array provided us with the technical evaluation of each of their assessed options for dealing with the Cleve Hill incident, and minutes of discussions with Siemens and the project board's Executive Committee, highlighting that due process had been taken in reaching their decision. The London Array analysis showed that the approach pursued saved significant time on the overall project programme, and gave the project additional assurance as to the integrity of the final cable connection and associated terminations.

2.37. We consider that the Cleve Hill incident was not foreseeable and, as evidenced by the analysis provided to us, the developer took immediate and prudent action in both determining why the failure occurred, and appraising the options to rectify the incident. It pursued its contractors for appropriate compensation to contribute to the rectification of the issue and demonstrated that the solution chosen was economic and efficient taking into account the integrity of the final cable connection, timetable implications and the actual cost. On that basis, we have decided to include the additional cost in the assessed costs.

[5] The original contractor also bore additional cost for this replacement work.

Cable manufacture issues and associated vessel standby costs

2.38. The developer faced additional costs due to cable manufacturing issues, which caused vessels to be placed on standby. The net cost increase submitted by the developer in this respect was £12.1m.

2.39. All of these costs relate to cable supply delays. The developer was informed that the cable would be delayed due to faults identified during factory acceptance testing (FAT). Restoring the cable to a suitable condition required additional works including the replacement of new joints. The developer also undertook an independent cable survey. The replacement joints and independent survey resulted in an increased cost. The additional works also led to an increase in the contractor's project management costs. The vessel that had been scheduled to collect the cable was already engaged on another project and was retained on that job until the cables were due to be repaired, to minimise incurred costs.

2.40. When the vessel arrived to collect the cable, there were still cable related issues that needed repair at the factory. The cable vessel was placed on standby whilst these issues were resolved. The developer's contract meant that it was liable for the vessel standby costs; however the developer was able to claim liquidated damages from the cable manufacturer, which offset a proportion of the vessel costs arising from the late delivery of the cable.

2.41. The delay in cable supply resulted in cable installation being carried out during the winter rather than the planned summer period. This led to additional costs arising from: vessel standby as the project experienced adverse seasonal weather conditions; new equipment costs for the colder conditions; and, an incident involving a jack up vessel. To meet contractual commitments the developer was obliged to pay these costs.

Ofgem's view

2.42. We requested information from the developer to substantiate the vessel standby costs and associated increases, in order to take a view on whether they were incurred economically and efficiently. The developer provided us with a timeline of events, evidence of when Nexans informed them about the various cable delays, details of mitigating actions taken and options investigated by the developer, including management decisions taken as a result of information provided by Nexans.

2.43. We note that the cable supply delays were unforeseeable events outside the control of the developer. Once made aware of the delays, the developer took action to minimise vessel costs and delayed sending the vessel that was assigned to collect the cable by one month. We also note that the developer considered sending the vessel to another job; however this was not possible due to the fact that the vessel's next contractual commitment did not line up with London Array's construction

timetable. The developer has demonstrated that additional measures were taken to minimise vessel costs by: standing down support vessels which were lined up to undertake works; finding alternative uses for the vessel for part of the delay period; negotiating more favourable port fees to minimise standby costs; and, adapting its construction schedule to avoid incurring further vessel standby costs during the later stages of the project.

2.44. The developer's contracts meant that it was responsible for the vessel standby costs. We consider that the developer took reasonable and prudent steps to minimise vessel standby costs, and acted to minimise the consequential cost impacts of the cable delays by revising its schedule. The developer has also pursued Nexans for liquidated damages to further minimise the cost impact of the delays. Our view is that the developer has demonstrated that it actively managed this situation in an economic and efficient manner. On this basis, we have concluded that the additional net costs of £12.1m due to cable issues and vessel delays should be included in the assessed costs.

Development costs

2.45. The total development cost calculated for the London Array transmission assets in the assessed costs is £48.8m. These are costs incurred by the developer which were outside the scope of the main construction contracts.

2.46. For the purposes of informing our cost assessment, our forensic adviser Grant Thornton, investigated the project's development costs prior to the developer submitting a final cost template submission to Ofgem. The main outcome of the investigation was to confirm the basis for cost allocation metrics between the transmission and generation assets for a number of shared costs.

Accuracy and allocation of development costs

Project common costs

2.47. A number of the project's development costs are common to both transmission and generation activities and have been allocated accordingly by the developer. These costs relate to:

- construction costs;
- procurement costs;
- project management and overhead costs; and
- consents and commercial activities.

2.48. We have analysed the developer's allocations individually and as an overall aggregate to ensure that they are appropriate.

2.49. When the indicative transfer value was set in November 2011, a ratio of 25:75 was used as a default for allocating project common costs between the transmission assets and generation assets. This metric was derived by taking the cost of the transmission assets as a percentage of total wind farm costs. The developer applied this ratio to their shared costs in their final cost submission.

2.50. During the forensic review our adviser, Grant Thornton, undertook a review of the ratio used for allocating project common costs between generation and transmission. As a result a revised ratio of 17:83 was applied to the developer project common costs final submission.

Ofgem's view

2.51. We have discussed the revised ratio with the developer and agree that the 17:83 is a more appropriate ratio to apply to the split on common costs. This was reflected in a lower revised submission by the developer.

Insurance costs

2.52. During the forensic investigation we asked our adviser to examine the project's indirect costs, in particular insurance costs.

2.53. The allocation rate was reduced to 17% following analysis conducted by our adviser, Grant Thornton. This resulted in £1.3m being removed from the assessed costs.

2.54. The CAR (construction all risks) insurance excess for the cable damage claim cost related to damage caused during cable installation. The excess can be included within the costs of the transmission assets, and is included in the assessed costs. However, an unrecovered cost of £4.0m was included in the cost template submission relating to costs that London Array did not expect to be recoverable through this insurance claim. It is our view that it is the developer's responsibility to ensure that it has adequate insurance to recover all costs in the event of an insurable event occurring. Therefore, £4.0m was removed from the cost template.

Ofgem's view

2.55. Upon further analysis by our adviser Grant Thornton and the calculations to derive this allocation rate the developer agreed to the revised allocation rate. In line with our cost assessment principles, we have accepted the use of this metric and deducted £1.3m from the assessed costs.

2.56. Furthermore, the CAR insurance unrecovered costs have been removed from the assessed costs, in line with our cost assessment principles.

2.57. In total £5.3m was deducted from insurance costs as a result of our analysis and our adviser's recommendations.

Reallocation of costs from CAPEX

2.58. On further review of the developer's submissions, we have concluded that £17.2m of costs previously included as CAPEX are more appropriately categorised as development costs. The efficiency of these costs has been reviewed and considered as part of our overall review of the efficiency of development costs.

Efficiency of development costs

2.59. The development costs associated with the London Array project have been compared to the equivalent costs for previous transitional round projects. The total project management costs for the London Array project benchmarks in line with other transitional round projects at 10.6 per cent of total project costs.

Additional costs for the increased duration of the project

2.60. There have been delays in the London Array project. This has extended the construction period of the project and increased the amount of project management resource and costs required for the project by £10.6m. These costs are for London Array's internal project management costs and the hiring of external consultants and specialist contractors.

2.61. The Cleve Hill incident delayed the project timetable by eight months and the export cable supply delays led to a five month delay. We asked the developer to provide substantiation for these costs including detail on how these increases were allocated across the project's various work packages. The developer provided evidence of the metrics used and how costs were allocated across work packages, as well as timesheet information.

2.62. Our forensic adviser investigated these costs as part of their review and concluded that the costs outlined in the final cost submission were appropriate given the explanations provided by London Array.

Ofgem's view

2.63. We consider that the Cleve Hill incident and the cable supply delays were not foreseeable. The developer took action in both cases to minimise costs and avoid longer term delays on the project. Based on the supporting information that we requested from the developer and Grant Thornton's findings we consider that the additional costs of £10.6m can be included in the assessed costs.

Interest during construction

2.64. The total IDC calculated for the London Array transmission assets in the assessed costs is £66.5m. This is based on the developer's calculation of the interest rate to construct the transmission assets over a period from April 2007 to the end of November 2012.

2.65. The main change from the indicative transfer value is a result of delays during the construction period and increase in development costs.

2.66. We have removed a net £9.9m from the developer's submitted IDC cost of £76.4m as a result of correcting its submitted CAPEX profile and disallowing claimed IDC in relation to assets that were complete and operational.

Accuracy and allocation of IDC

2.67. The London Array transmission assets were constructed over the period from April 2007 to November 2012. Two different IDC rates have been applied across that period: 10.8 per cent from April 2007 until November 2011, and 8.5 per cent from December 2011 until November 2012.

2.68. Our review of the developer's submission resulted in a number of changes to its split cash flow IDC calculation and its spend profile. The net impact of these changes was an increase of £2.5m to the developer's IDC claim.

Cleve Hill incident

2.69. In determining the project's IDC we have discussed with the developer the operational status of the Cleve Hill onshore substation at the time of the Cleve Hill incident. In particular, we identified that the developer continued to claim IDC whilst the repairs were undertaken to Cleve Hill.

2.70. During our discussions with London Array we confirmed that a part of the Cleve Hill substation was under the developer's control, in service and operational and covered by contractor warranties.

2.71. Therefore, IDC could no longer be claimed against those operational assets as they were no longer being developed or constructed. In line with our cost assessment principles, we adjusted the amount of IDC by disallowing the additional IDC claimed for these operational assets from March to October 2012 (ie while the repair works for Cleve Hill were being carried out). IDC for the balance of the assets at Cleve Hill continued until October 2012.

Efficiency of IDC

2.72. In July 2011, Ofgem consulted on the interest rate to be used to calculate the level of IDC for all transitional projects. We published our decision letter and explained that we will apply a capped rate of 8.5% from 1 December 2011. IDC prior to this date is capped at a rate of 10.8%.

2.73. These caps were applied to the developer's indicative transfer value and for the assessed costs these caps remain. Accordingly, we consider that the rates applied for the developer's submission are acceptable.

Transaction costs

2.74. The indicative transfer value did not contain any transaction costs as they were not known at the time. The developer has subsequently submitted a firm estimate of the costs they expect to incur to asset transfer. The total of these items results in the transaction cost element of the submitted transfer value being £2.4m.

Accuracy and allocation of transaction costs

2.75. 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, eg legal, accountancy and technical. We have concluded that the costs provided by the developer were allocated appropriately.

Efficiency of transaction costs

2.76. Transaction costs can only be provided to us by the developers to a reasonable degree of accuracy towards the end of the tender process. The developer has submitted transaction costs for the project totalling £2.4m, which represents 0.5 per cent of the assessed cost for the London Array project. We have considered the types of resource costs incurred in relation to this tender process and these transaction costs appear reasonable.

Contingency

2.77. The assessed costs do not contain a separate contingency value. The developer has identified a small number of cost estimates for future payments in relation to the transmission assets for inclusion in the assessed costs.

Capital Allowances

2.78. We assumed for the purposes of our estimate of costs and calculation of the indicative transfer value that the purchaser would obtain the full benefit of all available capital allowances for the transmission assets. Where this is not the case, the assessed costs are reduced by the amount of the benefit of capital allowances retained by the developer.

2.79. The developer has confirmed that the OFTO will not be able to obtain the full benefit of all available capital allowances as capital allowances were claimed by two of the Participants of the London Array project. Therefore, an amount of £2.7m has been deducted from the assessed cost for the purpose of determining the final transfer value.

3. Conclusion

3.1. In conclusion, in accordance with Regulation 4(2)(b) 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 London Array transmission assets to be £461,618,457. The final transfer value calculated in accordance with Regulation 4(6) of the Tender Regulations is £458,904,457, being £2.7m less than the assessed costs to reflect the fact that the OFTO will not receive the full benefit of capital allowances. This assessment of costs is used by the Authority to determine the value at which the transmission assets transfer to the OFTO. This determination is made when the Authority determines to grant the licence to the proposed OFTO.

Appendices

Index

Appendix 1 - Glossary

A

Authority

The Gas and Electricity Markets Authority

C

CAPEX

Capital Expenditure

D

DECC

Department of Energy and Climate Change

DIR

Direct Information Request

F

FAT

Factory Acceptance Tesnting

G

GIS

Gas Insulated Switchgear

I

IDC

Interest during Construction

IM

Information Memorandum on the project released in January 2011.

ITT

Invitation to Tender

K

kV

kiloVolt

L

LV

Lower Voltage

M

MW

MegaWatt

MVA

MegaVoltAmpere

N

NGET

National Grid Electricity Transmission

O

OFTO

Offshore Transmission Owner

P

Participants

The London Array participants comprise:
- Dong Energy (comprising Dong Energy London Array Limited and Dong Energy London Array II Limited);
- E.ON Climate and Renewables UK London Array Limited; and
- Masdar Energy UK Limited.

PIM

Preliminary Information Memorandum on the project released in November 2010.

PTRA

Post Tender Revenue Adjustment

Q

QTT

Qualification to Tender

S

SCADA

System Control and Data Acquisition

SVC

Static VAR Compensator

T

TRS

Tender Revenue Stream