



Offshore Transmission: Cost Assessment for the Greater Gabbard transmission assets

Consultation

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Overview:

This document sets out our cost assessment for the Greater Gabbard transmission assets and the key principles that we have applied in our cost assessment process for the first and second transitional tender rounds. The Authority has used the assessment of costs to determine the value of the Greater Gabbard transmission assets. The Authority has granted an offshore transmission licence to Greater Gabbard OFTO plc, the GET Balfour Beatty Consortium (a consortium of Balfour Beatty Investments Limited, Equitix Limited and AMP Capital Investors Limited).

Greater Gabbard OFTO 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 referred to in this document.

Context

Ofgem and the Department of 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 regime¹.

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 ninth cost assessment report for offshore transmission published by Ofgem.

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 Electricity Transmission: Tender Rules [Link](#)
- Interest during construction for transitional tender rounds [Link](#)
- Offshore Transmission: Guidance for Cost Assessment [Link](#)

¹[Overview of Great Britain's Offshore Electricity Transmission Regulatory Regime](#)

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Appendices provided as separate pdf documents:

- Appendix 2: Letter to developer in July 2009**
- Appendix 3: Letter to developer in September 2009**
- Appendix 4: KEMA Greater Gabbard benchmarking report**
- Appendix 5: KEMA cost efficiency report**
- Appendix 6: E&Y report on interest during construction**
- Appendix 7: E&Y Greater Gabbard Ex post forensic report**
- Appendix 8: KEMA Ex Post Technical report**

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 Greater Gabbard 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 £343.7m ('the initial transfer value'). This was communicated to the developer and published in the preliminary information memorandum ('PIM') in July 2009.
2. The initial transfer value was updated to £316.6m ('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 September 2009.
3. We have now reached a final decision on the assessment of costs of £317.1m ('the assessed transfer value').

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


Table 1: Summary of cost components

Category	Initial Transfer Value: July 2009 (£m)	Indicative Transfer Value: September 2009 (£m)	Assessed Transfer Value: April 2013 (£m)
CAPEX	246.5	250.0	241.4
Development	42.6	30.4	34.3
IDC	54.6	36.2	39.3
Transaction	0	0	2.1
Total	343.7	316.6	317.1

CAPEX

The assessed transfer value CAPEX is £8.6m less than the indicative transfer value CAPEX. This included increases of £0.7m relating to procurement costs for:

- temporary power supplies for the onshore substation;
- a crane for one of the offshore substations; and
- the purchase of a spare cable reel and cable storage.



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These increases were offset by reductions totalling £9.3m, relating to:

- the removal of costs for 33kV switchgear that was not transferring to the OFTO;
- the removal of costs for SCADA equipment that related to generation rather than transmission and a reduction in the final costs for Gas Insulated Switchgear (GIS);
- the removal of operational costs that should not be categorised as CAPEX; and
- the reallocation of costs to other categories.

Development costs

The increase in the development costs is mainly due to reallocations of costs that had previously been categorised as CAPEX.

Interest during construction (IDC)

The IDC amount has increased as a result of delays in the construction period. We have excluded increases relating to inefficient delays.

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. These are only known at the final stage of the cost assessment.

Assessed transfer value for Greater Gabbard

The assessed transfer value of the Greater Gabbard transmission assets is £317,115,267.

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 the Greater Gabbard transmission assets.

Cost assessment principles

- 1.1. The cost assessment principles 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'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 specific steps in the process 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 incurred in connection with the development and construction of those transmission assets.

²[Offshore Transmission: Guidance for Cost Assessment](#)

- 1.4. The remainder of this chapter describes the process that we apply to all transitional round projects. Chapter 2 provides the detail as to how these have been applied to the specifics of the Greater Gabbard project.

Data collection for transitional projects

- 1.5. To undertake cost assessments, we gather and review a range of information and supporting evidence. Detailed cost information is provided by the developer in the form of cost reporting templates, contract values, asset cost schedules and cashflows. These relate to the actual/forecast costs of construction contracts and development costs related to the transmission assets that will transfer to the successful bidder.
- 1.6. The data collection to inform the cost assessment process for all transitional projects commenced in December 2008 and has continued to date. Throughout this period we work closely with the developers of the offshore transmission assets. The information we gather relates to the following cost categories that are involved in the development and construction of the transmission assets:
- Capital expenditure;
 - Development costs;
 - Contingency provisions;
 - Interest during construction; and
 - Transaction costs.
- 1.7. Developers provide 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 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') stage of the tender process. The letter we send to the 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 indicative transfer value for the commencement of the Invitation to Tender ('ITT') stage of the tender process. This value is used for the tender revenue stream bids submitted by bidders at this stage in the tender process. The letter we send to the developers confirming the indicative transfer value explains 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, this letter provides comfort (subject to certain matters) that the minimum transfer value the developer will receive for the transmission assets, once their project is completed, is 75% of the indicative transfer value.

Assessed transfer value

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. A draft of the cost assessment report, including the amount of the assessed transfer value, 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 transfer value is 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 transfer value after this point. The draft cost assessment report is published alongside the section 8A licence consultation.

Final transfer value

1.14. The assessed transfer value is 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 and supporting appendices 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 apply two tests throughout the cost assessment process.

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

1.18. As a first test, we check 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 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 the developer 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 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 focuses on the larger value contracts and/or contracts which materially increase in cost.

1.20. The forensic accounting investigation is also undertaken to validate the cost allocations provided by the developer. This may indicate 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 appropriate 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 the developer's incurred costs are economic and efficient

- 1.22. Under test two, we seek to assess through appropriate analyse 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 costs across the projects (as explained in the next paragraph) and analysis in relation to funding interest rates. We consider such approaches to be an important tool in assisting us in determining what economic and efficient cost should be.
- 1.23. To help us calculate the indicative transfer value, we undertake a benchmarking exercise using comparable costs across all transitional projects to identify any cost outliers across the main cost categories. Any cost outliers we identify through the benchmarking exercise are 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 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 costs.
- 1.24. This benchmarking exercise informs our communication to the developer in our letter which sets out the indicative transfer value.
- 1.25. We also considered 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. Where CAPEX or development costs increase after the indicative transfer value is set, developers are asked to provide supporting documentation to justify these increases. Depending on the nature of the increase, we have may undertake a technical investigation which focuses on, for example, a particular cost increase in a distinct contract or multiple increases across several contracts.

2. Greater Gabbard Cost Assessment

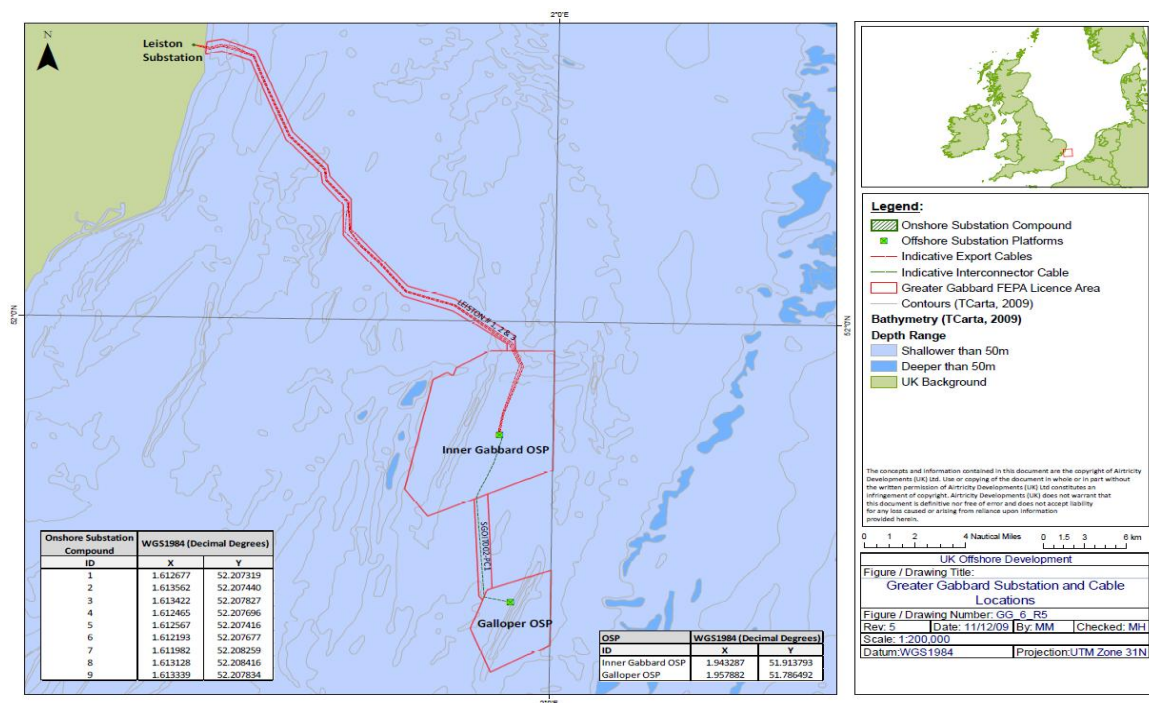
Chapter Summary

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

Greater Gabbard transmission assets

- The Greater Gabbard wind farm is located approximately 40km east of Harwich, off the coast of east England and occupies an area of 147 km², as illustrated in Figure 1 below. The Greater Gabbard Wind Farm consists of 140 Siemens 3.6MW wind turbine generators, with an installed capacity of 504MW. The Greater Gabbard transmission assets were fully commissioned in September 2012.

Figure 1: Location of the Greater Gabbard transmission assets



Source: Greater Gabbard Offshore Wind Limited

- The developer of the Greater Gabbard transmission assets is Greater Gabbard Offshore Wind Limited, a joint venture between Scottish and Southern Energy (SSE)

(50%) and RWE npower renewables (50%). The principal contractor for the project is Fluor and there was a full EPC³ wrap on the contract.

- 2.3. The Greater Gabbard transmission assets connect to the Greater Gabbard wind farm at two offshore substation platforms. These transmission assets are then connected to the onshore substation by three 800mm² 132kV subsea cables. Onshore, the subsea cable enters a transition jointing pit, where the subsea cable ends and the onshore 132kV underground cabling begins. The 132kV underground cable terminates at the Greater Gabbard 132kV onshore compound in the Leiston substation near Sizewell.
- 2.4. The transmission assets that are transferring to the OFTO comprise of:
 - two offshore substations (minus the 33kV switchgear) and associated platforms;
 - three export cables, each of 45km in length;
 - a 16km 132kV subsea interconnector cable running from the Galloper offshore platform to the Inner Gabbard offshore platform
 - the onshore substation; and
 - three onshore cables, each of 0.6km in length, linking the subsea cables to the onshore substation.
- 2.5. The project's transmission and generation boundary points are defined below:
 - Offshore: Located at the 33kV busbar on the two offshore platforms; and
 - Onshore: Located at the 132kV busbar on the NGET 132kV Leiston substation.
- 2.6. The key spare items that are to transfer to the OFTO include:
 - three jointing kits for offshore export cables (800mm²);
 - 1500m of offshore export cable (800mm² 132kV) and associated reel;
 - two export cable termination kits;
 - one jointing kit for interconnector cable (630/800mm²);
 - one spare of each type of the navigational lights installed (relating to offshore platform only); and
 - miscellaneous smaller operation and maintenance spares.

Greater Gabbard cost assessment process overview

- 2.7. Since December 2008, 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 Greater Gabbard project.

³ Engineering, Procurement, Construction

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- December 2008: Developer Information Request ('DIR') sent to developer.
- February/March 2009: Developer submits completed DIR to Ofgem.
- March – July 2009: Ofgem analysis of developer information and benchmarking.
- July 2009: Initial transfer value (£343.7m) published.
- August 2009: Further information received from developer and analysed by Ofgem.
- September 2009: Indicative transfer value (£316.6m) published.
- October 2009 – February 2013: Cost reporting updates performed with developer over the course of the construction of the project, up to the final cost submissions.
- October 2012 – February 2013: Forensic accounting and technical investigations.
- February 2013: Developer provided final substantiating information to allow closure on issues raised by Ofgem and the forensic and technical consultants.
- April 2013: Draft cost assessment report released to developer for factual comment and preferred bidder for information.
- September 2013: Draft report published alongside a consultation on the licence under section 8a of the Electricity Act 1989.
- November 2013: Authority determines the transfer value of £317.1m when it determines to grant the licence to the successful bidder. Final cost assessment report is published after licence grant.

Summary of indicative transfer value determination

- 2.8. The initial transfer value in July 2009 was £343.7m. This was based on capital expenditure and development costs of £289.1m and IDC of £54.6m. 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 when the initial transfer value was published and these were considered in greater detail when the indicative transfer value was set.
- 2.9. We determined an indicative transfer value of £316.6m in September 2009. This was based on capital expenditure and development costs of £280.4m and IDC of £36.2m. The difference from the initial transfer value was due to cost changes arising from our assessments of the accuracy and allocation of the developer's cost submissions and whether the costs the developer had forecast incurring were economic and efficient. Our assessment was assisted by our forensic accounting advisors, Ernst and Young (E&Y), who assessed accuracy and allocation issues.

Process for determining the assessed transfer value

Accuracy and Allocation

- 2.10. The wind turbine generators for the Greater Gabbard wind farm were supplied by Siemens. The remainder of the project⁴ was constructed by Fluor on a Balance of Plant ('BOP') contract basis. A forensic accounting investigation was undertaken by our adviser E&Y 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.
- 2.11. This investigation covered the main BOP contract in respect of the transmission assets, cable supply and installation, and the onshore and offshore substations.
- 2.12. In addition to the contract analysis we asked E&Y to conduct a review of the internal project management and project insurance costs.
- 2.13. 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
 - cashflow payments related to the transmission assets.

Efficiency

- 2.14. 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 E&Y;
 - the findings of the technical investigation by DNV KEMA; and,
 - our decision on Interest During Construction (IDC) for offshore transmission assets.

⁴ The contract scope included, "inter alia, works required to commission transition pieces, transformers, switchgear, inter-array cabling, the met mast, two offshore substation platforms, onshore substation work at Leiston, and export cables from the offshore substation platform(s) to the onshore substation works."

Project specific issues

2.15. The Greater Gabbard project experienced issues, such as foundation faults and delays, which have led to additional costs being incurred. These have been the subject of a contractual dispute between the Greater Gabbard developer and Fluor. In November 2012, the developer informed us that the associated cost increases claimed by Fluor would not have any effect on the developer's cost submission.

2.16. In assessing the costs for the project, we have discussed with the developer:

- the accuracy and allocation of costs between the transmission and generation assets;
- the causes of the additional costs 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 this 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 £323.7m. Our assessment of the economic and efficient costs which ought to have been incurred, in connection with developing and constructing the transmission assets has established an assessed transfer value of £317.1m. Table 2 provides a breakdown of the changes in cost for the main components of the project between the initial, indicative and assessed transfer values.

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Table 2: Summary of cost movements

Category	Initial Transfer Value: July 2009 (£m)	Indicative Transfer Value: September 2009 (£m)	Assessed Transfer Value: April 2013 (£m)	Reasons for change between Indicative Transfer Value and Assessed Transfer Value (£m)
CAPEX	246.5	250.0	241.4	<p>Increase due to: 0.7 for additional variation orders including an additional crane on one OSP, spare cable reel storage and temporary power supplies required at onshore substation</p> <p>Offset by decreases in: 1.8 for 33kV switchgear not transferring to transmission assets 1.7 for GIS and SCADA equipment cost reductions 0.9 for operate and maintain costs that are not CAPEX 4.9 for re-allocation of costs to other categories</p>
Development	42.6	30.4	34.3	Increase due to re-allocation from CAPEX
IDC	54.6	36.2	39.3	<p>Increase due to: 6.2 for duration of project over runs</p> <p>Offset by: a 3.1 reduction in the amount of IDC that was permitted for stage 1 due to excessive delays</p>
Transaction	0.0	0.0	2.1	Transaction costs have been added, which are assessed at the end of the cost assessment process
Total	343.7	316.6	317.1	

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

CAPEX

2.20. The CAPEX element of the assessed transfer value is £241.4m, which is £8.6m lower than the CAPEX element of the indicative transfer value.

Accuracy and allocation of CAPEX costs

2.21. E&Y undertook a forensic investigation on a sample of the three highest value elements of the Fluor CAPEX contracts. This sample accounted for 77% of the total CAPEX (excluding development) costs submitted by the developer at the time the investigation was undertaken. The CAPEX contracts investigated were:

- export cable supply;
- export cable installation; and
- supply and installation of onshore and offshore substations.

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 based on the proportion of the assets that were related to transmission versus the proportion related to generation. These differ depending on the nature of the work undertaken. Only those costs related to the transmission assets were allowed in the initial, indicative and assessed transfer values.

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.

Incorrect inclusion of 33kV switchgear

2.24. The developer's submission included the 33kV switchgear in the project's offshore substation assets. However, the offshore boundary point is located at the 33kV breakers at the transformer Low Voltage terminals where the metering equipment is located.

Ofgem's view on accuracy and allocation of costs incurred

2.25. We have discussed this matter further with the developer and confirmed that the 33kV breakers are to remain with the generator and do not form part of the transmission assets. As these assets will not transfer to the OFTO and will remain with the generator, we have not included them in the assessed transfer value.

2.26. The nature of the developer's contract with Fluor did not attribute a specific cost to these assets. The developer submitted its own estimated cost range of £1-2m. This was lower than our expectations based on previous costs for similar size projects. We therefore commissioned DNV KEMA to conduct a detailed assessment of the likely cost for these components. The DNV KEMA estimate was £1.8m, which is near the top end of the developer's proposed cost range. Therefore we have used the DNV KEMA figure as the appropriate amount to deduct from the developer's CAPEX submission.

SCADA and GIS equipment cost

2.27. The SCADA and GIS cost included in the initial transfer value was £4.3m, which was reduced to £2.6m in the developer's final submitted costs. The reduction in the SCADA equipment costs was as a result of further analysis by the developer of the cost allocations between transmission and generation assets. The reduction in the final GIS costs was a result of the developer receiving more detailed and up to date prices for the work needed to install the GIS in the onshore substation.

Ofgem's view on accuracy and allocation of costs incurred

2.28. The original costs for the GIS and the SCADA equipment were based on early quotes and allocations and have since been finalised. This has resulted in an overall reduction of £1.7m compared to the initial transfer value for this equipment. We have carried out an analysis of the costs that were included and are satisfied that they are in line with other transitional projects.

Incorrect allocation of costs

2.29. As part of our analysis for the assessed transfer value, we have analysed the accuracy of cost allocations between the overarching cost categories of CAPEX and development costs. Since the indicative transfer value was determined, the developer has re-categorised certain costs from CAPEX to other cost categories such as development costs. The net result of this was a £4.9m reallocation from CAPEX to transaction and development costs.

2.30. In addition, the developer submitted £0.9m of costs that related to operational and maintenance costs. These costs relate to the running of the transmission assets once they are operational; as such, they should not be included in the transfer value. On that basis, we have not allowed these costs in the assessed transfer value.

Ofgem's view on accuracy of costs incurred

2.31. We have discussed each of these reallocations with the developer. We consider the developer's reallocations to be appropriate based on our analysis and investigations of the costs submitted by the developer.

Efficiency of CAPEX costs

2.32. The developer has submitted additional CAPEX costs of £0.7m relating to procurement costs for:

- temporary power supplies for the onshore substation;
- a crane for one of the offshore substations; and
- spare cable reel purchase and associated storage.

Temporary power supplies

- 2.33. Temporary power was needed for commissioning and testing the Leiston substation. The commissioning and testing was supposed to be undertaken with a power supply from the onshore transmission grid. As National Grid had not finished their part of the construction works on time, they were unable to provide a connection and power supply to allow commissioning and testing to take place. Within the BOP contract there is a clear obligation for the developer to provide power either at high voltage or low voltage to facilitate commissioning.

Ofgem's view on the efficiency of costs incurred

- 2.34. Testing and commissioning of the onshore substation is a key element of the transmission project. Under the BOP contract with Fluor, it was the developer's obligation to arrange for power to be available in order to facilitate commissioning. In the absence of the power supply being available when required to conduct this exercise, we consider that it was appropriate for the developer to procure alternative power sources to fulfil its contractual obligation. In addition, this action was taken so that the overall project schedule was not adversely affected. The cost involved offsets similar costs that would have been incurred had National Grid fulfilled its intended service provision and charged for the actual power used by the developer. It also avoided the developer incurring additional cost claims from the contractor for programme delays. On that basis, we have decided to include the additional £218k in the assessed transfer value.

Offshore substation crane


- 2.35. The developer's operations team identified the need for an additional loading crane on one of the offshore platforms post BOP contract signature. It is common practice on offshore platforms to have a number of locations for lifting operations in place to mitigate changing currents and tides. This is so that lifting operations can be carried out safely in a variety of conditions.

Ofgem's view on the efficiency of costs incurred

- 2.36. The developer has incurred this extra cost to enable lifting operations to be carried out in the most efficient manner making optimum use of the transport vessel's time out on site. On this basis, we have concluded that the additional cost of £26k should be included in the assessed transfer value.

Spare cable reel and storage costs

- 2.37. When the cable was delivered by Fluor, they decided to unload the spare export cable before the cable installation was undertaken. This required the developer to hire a spare reel to store the cable on and pay for the storage of the cable and reel.



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In other projects, the spare cable has been left on the reel that it was delivered on, avoiding the need for hiring a spare reel.

2.38. After the export cable installation was complete, the developer submitted its final costs, including:

- the purchase price for a new reel to store spare export cable;
- the costs for transferring the cable from the hire reel to the new reel; and
- historic storage costs for the cable and reel.

Ofgem's view on the efficiency of costs incurred

2.39. Our view is that it would have been more economic and efficient for the developer to have purchased a spare cable reel at the same time as the export cable. Our position, based on the information provided by the developer, is that cost of a new reel, the transfer of the cable and the cable storage up to the completion of the transmission system, will be included in the assessed transfer value. However, we will not allow the cost of the rental of the reel, as hiring a reel long term is neither economic nor efficient. This also applies to the storage costs after the completion of the transmission system. Therefore we have included £442k to cover the cost of the new cable reel and associated expenses in commissioning it into service.

Development costs

2.40. The total development cost calculated for the Greater Gabbard transmission assets in the assessed transfer value is £34.3m. These are costs incurred by the developer which were outside the scope of the main construction contracts.

2.41. For the purposes of informing our cost assessment, E&Y 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

2.42. 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.

- 2.43. The developer used different rates for allocating project common costs. One was fixed for the duration of the project and the other varied according to the progress made in commissioning the export cables. A proportion of the construction and external project management cost were not separately identifiable between the transmission and generation assets. The allocation of these costs was done on a fixed basis at 29.81% to the transmission assets. The 29.81% was calculated as the total value of the transmission asset payments to Fluor as a proportion of the total project payments to Fluor.
- 2.44. The allocation of development and internal project management costs to transmission assets was done on a variable basis. This 17.84% value was calculated as the total cost of the transmission assets (excluding development costs and internal project management costs) as a proportion of the total cost of the Greater Gabbard project (excluding development costs and internal project management costs). It then varied over the course of the project as the 3 export cables were commissioned, reducing by a third (5.95%) each time, until it ceased completely when the final cable was commissioned.

Ofgem's view on the allocation of costs incurred

- 2.45. We have analysed the developer's allocations individually and as an overall aggregate to ensure that they are appropriate and we consider the costs have been appropriately allocated.

Insurance costs

The developer has allocated 17.84% of total insurance costs to the transmission assets. The allocation is based on the total cost of the transmission assets as a proportion of the total cost of the Greater Gabbard project's assets. This allocation didn't vary during the project as the proportion of costs remained constant. This ratio excluded development costs and internal project management costs.

Ofgem's view on the allocation of costs incurred

- 2.46. We consider that this is an appropriate means for allocating the insurance costs and we also consider the costs have been appropriately allocated.

Efficiency of development costs

- 2.47. The development costs associated with the Greater Gabbard transmission assets has been compared to the equivalent costs for previous transitional projects. The total development costs for the Greater Gabbard transmission assets are 10.8% of total project costs, which is at the lower end of the 10%-15% range reported for other transitional projects.

Interest during construction (IDC)

- 2.48. The total IDC for the Greater Gabbard transmission assets included in the assessed transfer value is £39.3m. The main change from the IDC amount in the indicative transfer value is a result of the inclusion of some delays during the construction period.
- 2.49. The developer submitted IDC costs at £42.4m. We have deducted a total of £3.1m as a result of exclusions from its submitted IDC profile associated with uneconomic delays.

Accuracy and allocation of IDC

- 2.50. The Greater Gabbard transmission assets were constructed over the period from April 2008 to September 2012.


Project timeline

- 2.51. In its submission at the time of determining the indicative transfer value, the developer's original timeline for the project envisaged that the transmission elements would be completed by March 2011. However, there were a number of factors that that caused delays to this timeline. Some of the reasons for the delays encountered by the developer were:
- Of the two offshore platforms, we understand that the installation and commissioning of Inner Gabbard offshore substation platform was significantly later than scheduled;
 - weather delays caused the late delivery of the first export cable;
 - Subocean, the cable installation sub-contractor going into administration; and
 - additionally, the commissioning programmes suffered delays as a result of flashovers⁵.
- 2.52. In total, the transmission elements were delivered significantly later than envisaged by the original schedule. The developer's cost submission included a claim for IDC across the entire extended period of the development and construction phases.

Ofgem's view on the period of allocation for IDC

- 2.53. Whereas the developer began its expenditure in line with its original schedule, it became apparent after a few months that delays were likely and so it scaled back its expenditure to react to events. This active management of the cashflow has had a significant impact in respect of restraining the IDC that would otherwise have been

⁵ Flashover - an unintended electric arc over or around the surface of an insulator



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incurred. We consider that this was an efficient and economic response to the circumstances the developer found itself in.

- 2.54. The Tender Regulations require us to make "...an assessment of the costs which ought to have been incurred in connection with the development and construction of those transmission assets⁶". The Offshore Transmission: Guidance for Cost Assessment (and prior cost assessment reports) states that if we consider that there is evidence of inefficient and uneconomic delays during the construction or commissioning programme for the transmission assets, the period of IDC applicability may be curtailed to reflect this⁷.
- 2.55. By considering our own modelling of the likely time required to develop assets of this nature and the times taken by other developers during the current rounds of offshore transmission projects, we have concluded that it is not efficient for the whole of the extra period taken to deliver this project to accumulate IDC. In determining the appropriate curtailment of the developer's submission, we have noted the developer's mitigating actions of deferring its spend in light of events and the fact that the project was phased, such that the main increases in claimed IDC arise from the first phase of the project.
- 2.56. Our decision has been to reduce the period for which the first phase of the project earns IDC, by three months. Specifically, this has been implemented by considering the period by which the first phase overran its schedule (13 months) and allowing it an amount of IDC for that period which accords with our view of a reasonable construction period overrun when all relevant factors have been considered (10 months). The reduction in IDC has been scaled across the entire overrun period in order to avoid disproportionate effects due to varying cashflows across that period. The impact of this adjustment is a reduction of £2.6m on the developer's cost submission.
- 2.57. We have further reduced the IDC allowed for this project to reflect the IDC claimed for CAPEX items that were disallowed. This resulted in a further £0.5m reduction in the IDC value.

Efficiency of IDC

- 2.58. 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 incurred prior to this date is capped at a rate of 10.8%.

⁶ regulation 4 (2) (b)

⁷ Paragraph 2.57 of the guidance document (Ofgem ref 183/12)

2.59. The 10.8% cap was applied to the developer's indicative transfer value. Both caps were applied for the assessed transfer value. Accordingly, we consider that the rates applied for the developer's submission are acceptable.

Transaction costs

2.60. 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 £2.1m.

Accuracy and allocation of transaction costs

2.61. 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


2.62. 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 submitted transaction costs for the project totalling £2.1m, which represents 0.6% of the total assessed transfer value for the Greater Gabbard transmission assets. We have analysed and considered the types of resource costs incurred in relation to this tender process and these transaction costs appear economic and efficient.

Contingency

2.63. The assessed transfer value does not contain a contingency value. The contingency costs that were included in the initial transfer value have now been allocated into the appropriate cost categories that the contingency was expended on.

Capital allowances

2.64. 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 assessed transfer value we would reduce the assessment of costs for an amount that reflects the value of the tax benefit retained by the developer.



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- 2.65. For the assessed 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

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 Greater Gabbard transmission assets to be £317,115,267. This assessment of costs will be used by the Authority to determine the value at which the transmission assets will transfer to the OFTO. This determination will be made when the Authority determines to grant the licence to the proposed OFTO.

Appendices

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7	E&Y Greater Gabbard Ex post forensic report	PDF
8	KEMA Ex Post Technical report	PDF

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 Testing

G

GIS

Gas Insulated Switchgear

I

IDC


Interest during Construction

IM

Information Memorandum on the project released in January 2011.

ITT

Invitation to Tender



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K

kV

kiloVolt

L

LV

Lower Voltage

M

MW

MegaWatt

MVA

MegaVoltAmpere

N

NGET

National Grid Electricity Transmission

O

OFTO

Offshore Transmission Owner

P

PIM

Preliminary Information Memorandum on the project released in November 2010.

PTRA

Post Tender Revenue Adjustment

Q

QTT

Qualification to Tender

S



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SCADA

System Control and Data Acquisition

SVC

Static VAR Compensator

T

TRS

Tender Revenue Stream

TR1

Transitional Tender Round 1