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Decision

Offshore Transmission: Cost Assessment for the Galloper Transmission Assets

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This document sets out the cost assessment for the Galloper Wind Farm Limited and the key principles that we have applied in our cost assessment process for the fifth tender round. The Authority has granted an offshore transmission licence to Diamond Transmission Partners Galloper Limited, incorporated by the consortium of Diamond Transmission Corporation Limited (DTC) and InfraRed Capital Partners Limited (IRCP).

Diamond Transmission Partners Galloper 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.

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Executive summary

This report sets out the cost assessment work that Ofgem has undertaken from the Invitation to Tender (**ITT**) stage of the Tender Process in relation to the Galloper Offshore Wind Farm transmission assets (the **Transmission Assets**). This work has been used by the Authority to derive the Assessed Costs and will be used to set the Final Transfer Value (**FTV**) for these assets.

The cost assessment process involves the three key stages indicated below:

- The Initial Transfer Value (**InTV**) for the Transmission Assets was published in the preliminary information memorandum in September 2016 and was set at £329.1m based on information provided to Ofgem by the developer, Galloper Wind Farm Limited (the **Developer**);
- The Developer submitted a revised cost assessment template (**CAT**) on 17 May 2017 (the **May CAT**). Ofgem reviewed and analysed the cost information and calculated the Indicative Transfer Value (**ITV**) as £291.6m. This updated calculation was communicated to the Developer in January 2018 and the formal ITV letter issued in March 2018. The ITV was made available to bidders at the Enhanced Pre-Qualification (**EPQ**) stage of the tender process and was the transfer value assumed for the purpose of ITT stage submissions; and
- The Developer submitted a further CAT on 6 November 2018 of £300.7m (the **November CAT**). Ofgem reviewed this further cost information to calculate the final assessment of costs as £281.8m (the **Assessed Costs**). This is a reduction of £18.9m from the November CAT. The Developer has confirmed that the incoming Offshore Transmission Owner (**OFTO**) will be able to obtain the full benefit of all available capital allowances. Therefore, the final Assessed Costs of £281.8m is the amount that will be used to set the Final Transfer Value (**FTV**) at licence grant.

The key components of the InTV, the ITV and the FTV, together with the Developer's submission (November CAT) are set out in Table 1 below.

Table 1: Summary of costs components*

Category	InTV	ITV	Developer submitted cost for FTV review (November CAT)	FTV
	Sep 16 (£m)	**Mar 18 (£m)**	**Nov 18 (£m)**	**Aug 19 (£m)**
Capex	£239.7	£228.0	£238.0	£223.1
Development	£32.9	£29.5	£31.3	£28.0
Contingency	£23.9	£2.9	£0.0	£0.0
IDC	£30.4	£29.1	£30.2	£29.3
Transaction	£2.1	£2.1	£1.2	£1.3
Total	£329.1	£291.6	£300.7	£281.8

**these figures may not add to totals due to rounding*

Sections 3.34 – 3.64 set out details of the Assessed Costs and any reductions made to the values submitted in the November CAT and against the ITV. The main increases/decreases, against the ITV figures, were as follows:

a) The Capital expenditure (**Capex**) component of the FTV has decreased by £4.9m;
b) The development costs have decreased by £1.5m;
c) A contingency amount of £2.9m was removed by the Developer in the November CAT;
d) The Interest During Construction (**IDC**) increased by £0.2m; and
e) The transaction costs have decreased by £0.8m.

Below we summarise the main increases and decreases to each cost category as shown in Table 1 and detailed in sections 3.34 – 3.64. Please note that the figures set out in this section have been rounded.

Capital expenditure (Capex)

The Capex of the FTV has decreased by £4.9m since ITV. The main changes are:

Increases of:

a) £7.6m due to the settlement of outstanding disputed costs between the Developer and the contractor;
b) £0.5m for jack-up barge and supply boat;
c) £1.2m for export cable variation orders;
d) £0.8m for resources costs; and

Decreases of:

a) £0.3m for decreased use of Crew Transfer Vessels (CTVs);
b) £7.6m for disallowing costs related to the settlement agreement;
c) £0.2m for resources related to shunt reactor issue;
d) £0.1m for miss-allocated costs pertaining to generation assets;
e) £2.6m for jack-up barge and supply boat to accelerate the commissioning activities;
f) £1.6m for contribution to weight of offshore platform by generation equipment;
g) £1.3m for costs variations related to subsea cable installation; and
h) £1.3m for resource adjustments.

Development Costs

The development costs in the FTV have decreased by £1.5m since ITV due to:

Increases of:

a) £2.0m for resources costs due to resources plan changes; and
b) £0.1m for land transaction costs removed at ITV but substantiated at FTV.

Decreases of:

a) £1.3m for resources firmed up by Developer
b) £1.9m for resources adjustments in line with industry level;
c) £0.1m for land transaction costs portion beyond licence grant period; and
d) £0.3m for other small movements.

Contingency

We allowed £2.9m of contingency in the ITV. This was removed by the Developer in the November CAT submission.

Interest during construction

The Interest During Construction (**IDC**) amount has increased by £0.2m since the ITV. This increase is the result of balancing positive adjustments (for longer time allowed for the development phase in line with other projects) and negative adjustments (for disallowed costs) to the IDC calculated.

Transaction costs

Transaction costs have been assessed at £1.3m. The transaction costs are composed of both internal and external resource costs arising from the Developer's participation in the tender process. These have decreased by £0.8m since the ITV. The decrease is due to transaction budget being revised and costs firmed up at FTV.

Assessed Costs and FTV for the Transmission Assets

In accordance with Regulation 4(2)(b) of the Tender Regulations, the Assessed Costs of the Transmission Assets are £281,778,981. The Assessed Costs will be used as the FTV in accordance with Regulation 4(8) of the Tender Regulations.

1. Introduction

Context and related publications

1.1. In 2009, the Government introduced the regulatory regime for offshore electricity transmission to connect significant amounts of renewable offshore generation to the onshore electricity network (the **OFTO regime**).

1.2. Offshore Transmission Owners (**OFTOs**) are appointed through a competitive tender process (the **Tender Process**). OFTOs are granted an offshore transmission licence (**OFTO Licence**) with a fixed revenue stream for a specified time.

1.3. From the outset, the OFTO regime has encouraged innovation and attracted new sources of technical expertise and finance, whilst ensuring that grid connections are delivered efficiently and effectively.

1.4. The Electricity (Competitive Tenders for Offshore Transmission Licences) Regulations 2015 (the **Tender Regulations**) provide the legal framework for the Tender Process. The Tender Regulations require the Authority[1] 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 qualifying project.

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

1.6. This report should be read in conjunction with the "Offshore Transmission: Guidance for Cost Assessment" (the **Cost Assessment Guidance**).

[1] The Gas and Electricity Markets Authority (**GEMA**) is the regulator of gas and electricity markets in Great Britain. Ofgem is the Office of Gas and Electricity Markets, which supports the Authority in performing its statutory duties and functions. In this document the terms, 'Authority', 'Ofgem', 'we' and 'us' are used interchangeably.

Associated publications

- The Electricity (Competitive Tenders for Offshore Transmission Licences) Regulations 2015 Link
- Tender Process Guidance Document TR5 Link
- Offshore Transmission: Guidance for Cost Assessment Link

2. The cost assessment process

Section summary

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

Overview of the cost assessment process

2.1. The Tender Regulations provide the legal framework for the process we follow for granting offshore electricity transmission licences. This process includes calculating the economic and efficient costs of developing and constructing the offshore transmission assets to be transferred to the new OFTO.

2.2. The calculation of those costs shall be:

a) 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

b) Where the construction of the transmission assets has reached the stage when those transmission assets are available for use for the transmission of electricity, an assessment of the costs which ought to have been incurred in connection with the development and construction of those transmission assets.

Cost assessment principles

2.3. The cost assessment principles, the reasoning for such principles and overall process we have adopted can be found in the Cost Assessment Guidance.

2.4. We have applied these principles in our cost assessment process for the Project and, where appropriate, we have taken into account project-specific circumstances.

2.5. The remainder of this section describes some of the key elements of the cost assessment process. Section 3 provides the detail as to how these have been applied to the specifics of the Project.

Data collection

2.6. To undertake cost assessments we gather and review a range of information and supporting evidence. These relate to the forecast and actual costs of developing and constructing the transmission assets that will transfer to the OFTO. Detailed cost information is provided by the relevant developer in the form of cost assessment templates (**CATs**), contract values, asset cost schedules and cashflows. The developer also provides supporting evidence to substantiate its cost submissions including, amongst other things, contract documentation, supplier payment lists and invoices and receipts.

2.7. We work closely with the developer to gather information relating to the following cost categories in the development and construction of the relevant transmission assets:

a) Capital expenditures;
b) Development costs;
c) Contingency provisions;
d) Interests during construction; and
e) Transaction costs.

Process stages for cost assessment

2.8. The cost assessment process involves the key stages described below.

Initial Transfer Value

2.9. The InTV value is based on cost submissions by the developer for the relevant project. This value is made available to bidders at the Pre-Qualification or, as was the case for the Project, EPQ stage of the tender process. The letter we send to the developer 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

2.10. We provide the estimate of costs for the transmission assets (the ITV) for the commencement of the ITT stage of the tender process. This value is used as an assumption underlying the tender revenue stream (**TRS**) bids submitted by bidders at the ITT stage. The ITV letter we send to the developer at this stage confirming the ITV indicates that the calculation might be updated as a result of any further information provided by the developer and our continuing analysis.

Assessed Costs

2.11. As soon as reasonably practicable after the ITV has been completed, we are satisfied that the assets are available for use and we have obtained any further information that we require, we commence the exercise to determine the Assessed Costs.

2.12. Following this assessment exercise, Ofgem sends the developer a draft cost assessment report (in the form of this Report) setting out the amount of the Assessed Costs. This gives the developer the opportunity to correct factual errors and propose the redaction of commercially sensitive information.

2.13. The draft cost assessment report is also sent to the preferred bidder, to allow it to incorporate the Assessed Costs into its estimate of the TRS payable to the OFTO. This TRS amount, incorporating the Assessed Costs, is published in a consultation pursuant to section 8A of the Electricity Act 1989, by which the Authority proposes modifications to the standard conditions of the OFTO Licence on a project specific basis (the **Section 8A Consultation)**.

2.14. The **draft** cost assessment report is published alongside the Section 8A Consultation. The report remains in draft form until the conclusion of the Section 8A Consultation and the Authority has determined to grant the OFTO Licence to the successful bidder.

Final Transfer Value

2.15. If a developer retains some of the benefit of the available capital allowances, we reduce the relevant amount from the Assessed Costs before we derive the FTV. The FTV is confirmed once the Authority has determined to grant an OFTO Licence to the successful bidder. After licence grant, the final cost assessment report and supporting appendices are published on the Ofgem website.

2.16. Ofgem normally finalises the assessment of costs prior to commencement of the Section 8A Consultation. The FTV is taken into account when the section 8A TRS for the full licence period is published.

Cost assessment analysis

2.17. Throughout the cost assessment process, Ofgem applies two key tests to the cost information submitted by the developer. These are:

Test 1 - Assessing if a developer's cost submissions are accurate and allocated appropriately

2.18. As a first test, we check the accuracy of the data provided by the developer and the appropriateness of cost allocations, in particular, between the offshore generation and transmission assets. Throughout the cost assessment process, the developer provides 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.

2.19. To support the cost assessment process, we undertake a forensic accounting investigation. The scope of this investigation is shared with the developer in advance. This investigation is based on the final costs that the developer provides to us, and applies to a sample of contract costs. The actual sample for each project varies due to the different contracting strategies adopted by the developer and the specific needs of the project, but generally focuses on the most expensive contracts and/or contracts that materially increase in cost.

2.20. The forensic accounting investigation scrutinises the cost allocations provided by the developer. This may indicate the need for amendments to the developer's submissions to reflect, for example:

a) The actual costs incurred (e.g. in respect of exchange rates on foreign currency payments); and/or
b) More relevant metrics for the allocation of shared service costs.

2.21. 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 a developer's cost are economic and efficient

2.22. Under test two we assess whether the costs reported to date by the relevant developer have been economic and efficient.

2.23. We undertake benchmarking analysis using cost reporting data from other projects. This is used to identify cost outliers reported by offshore developers. Where cost outliers are identified on a project, these are further reviewed and Ofgem may use external consultants to investigate the reasons for this and evaluate whether the costs are economic and efficient.

2.24. We also consider the procurement processes adopted by the developer to obtain economic and efficient transmission asset costs.

2.25. When undertaking the assessment of costs to derive the FTV, we review updated information provided by the developer, as well as any cost areas flagged for further investigation at the ITV stage. Where costs have increased since the ITV, we ask the developer to provide supporting documentation to justify these increases. We may undertake a technical investigation that focuses on, for example, a particular cost component, such as an increase of costs in a contract or multiple increases across several contracts.

3. Galloper cost assessment

Section summary

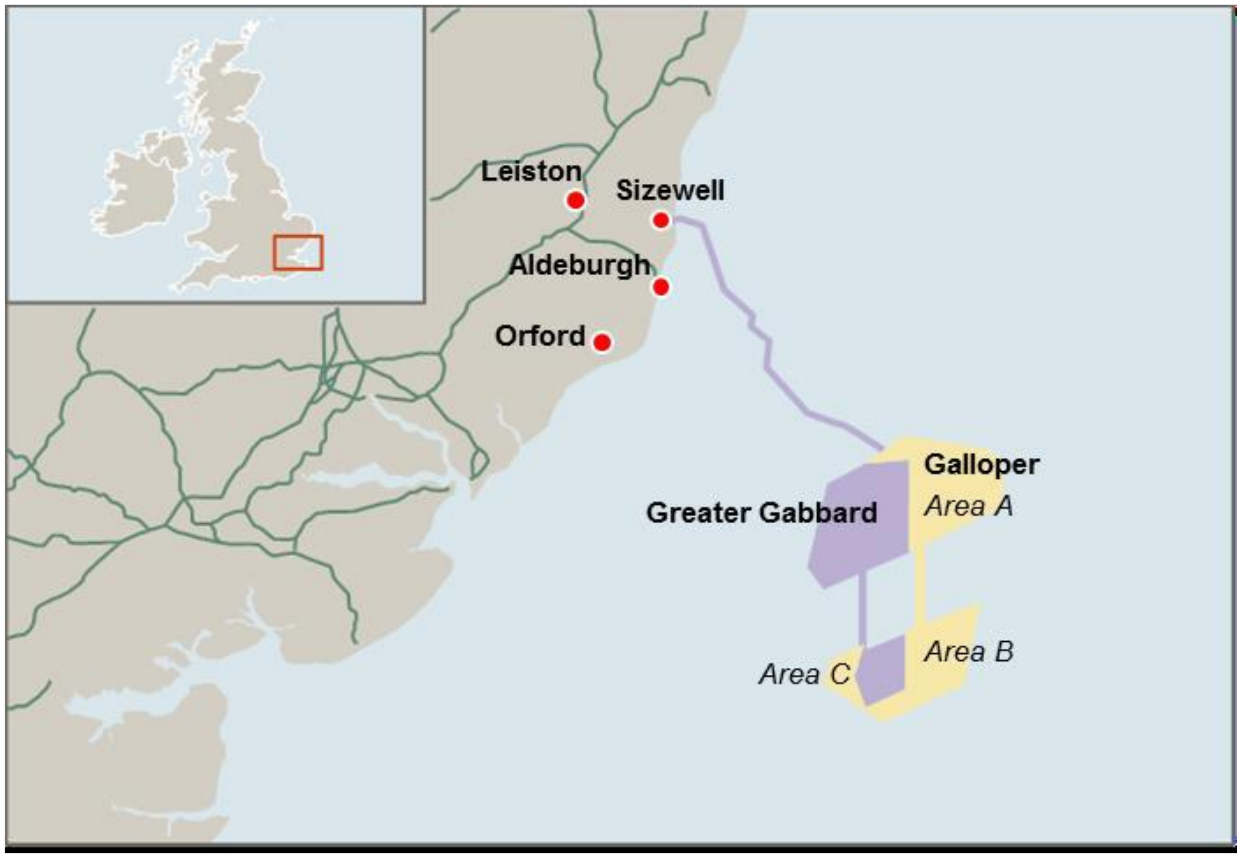
This section sets out a short description of the wind farm and the transmission assets, based on information provided by the Developer. It then summarises how we have undertaken our cost assessment for the Transmission Assets, from the InTV to the FTV and provides a breakdown of the key cost categories that we have considered and highlights the decisions that we have made.

Transmission Assets[2]

3.1. The Galloper Offshore Wind Farm is situated offshore to the east of the operational Greater Gabbard wind farm, circa 27 km from the shore of Suffolk at its nearest point. It comprises 56 Siemens 6.3MW Wind Turbine Generators (WTGs) with a maximum blade tip height of 180.5m above LAT (Lowest Astronomical Tide) providing a total installed capacity of 353MW. The wind farm is connected to the National Grid substation at Leiston and generates enough energy each year to power up to 380,700 average UK households.

[2] The technical information contained in this section of the Report is based on information provided by the Developer and has not been independently verified by Ofgem.

Figure 1: Location of the Galloper Offshore Wind Farm and Transmission Assets



3.2. The Galloper Offshore Wind Farm is owned by Galloper Wind Farm Limited, which is jointly owned by Innogy SE (25%), Siemens Financial Services (25%), Sumitomo Corporation (12.5%), Electricity Supply Board (12.5%) and a consortium managed by Green Investment Group and Macquarie Infrastructure and Real Assets (25%) (collectively, the **Developer**).

3.3. The Transmission Assets connect to the Galloper Offshore Wind Farm at one offshore platform. The Transmission Assets that are transferring to the OFTO comprise:

a) One 33kV/132kV offshore substation;

b) Two buried subsea export cables, each approximately 45 kilometres in length;

c) Two 0.85 kilometre onshore cables; and

d) One onshore 132kV substation.

3.4. The onshore and offshore boundary point definitions as agreed with DTP and included in the Interface Agreement are as follows:

a) **"Offshore Boundary Point**" means the female part of the Pfisterer cable termination at the 33kV switchgear connecting from the 132/33kV grid transformers on the offshore substation platform;

b) **"Onshore Boundary Point"** means the onshore ownership boundary point located at the main busbar NGET owned flanges/gas barrier between gas zones 494A-G1 and 584A-G1 and on the reserve busbar NGET owned flanges/gas barrier between gas zones 496A-G1 and 586A-G1 at the NGET substation at Leiston, Suffolk.

3.5. The spares included in the Transmission Assets that are transferring to the OFTO are:

a) 1 x 4km of 132kV subsea cable (Aluminium conductor, 1000mm^2);

b) Various joints (transition, straight and cable repair joints);

c) Cable terminations; and

d) Other miscellaneous spares.

Overview of cost assessment process for Galloper

3.6. We received the first cost information from the Developer in June 2016. Since then we have worked with the Developer and our advisers to reach an assessment of the costs which ought to have been incurred in connection with the development and construction of the Transmission Assets. Set out below is an outline of the steps taken, and to be taken, in the cost assessment process for the Project.

a) **September 2016**: InTV (£329.1m) published.
b) **May 2017**: Developer provided revised CAT (the May CAT).
c) **January 2018**: ITV figure (£291.6m) determined and communicated to Developer.
d) **March 2018**: formal ITV letter issued.
e) **February – August 2018:** ITT process (bidding and evaluation).

f) **November 2018:** Developer submitted a revised CAT (the November CAT).
g) **November 2018 - Mar 2019:** forensic accounting and FTV investigation undertaken.
h) **April-July 2019**: final cost reporting updates and final supporting information received from the Developer.
i) **September 2019:** this draft cost assessment report released to the Developer for comment and the Preferred Bidder for information.
j) **TBC 2019]:** draft cost assessment report published alongside the Section 8A Consultation.
k) **TBC 2020]:** The Authority to determine the FTV when granting the licence to the successful bidder. The final cost assessment report will be published after licence grant.

Summary of the InTV and ITV determination

3.7. The InTV of £329.1m was established in September 2016. This value was based on information received from the Developer at an early stage in the construction and development of the Project. This value was included in the EPQ document and Preliminary Information Memorandum (**PIM**) for the commencement of the EPQ stage of the Project.

3.8. The ITV of £291.6m was established in January 2018, with the formal ITV letter issued to the Developer in March 2018. Our estimate was supported by our forensic accounting advisors, Grant Thornton (**GT**), our internal analysis and the supporting information provided by the Developer.

3.9. When we set the ITV, we reduced the costs submitted by the Developer in the May CAT by £31.8m. This adjustment takes into account £14.6m of contingency removed by the Developer. Some costs could not be fully investigated at the ITV stage and were highlighted as needing further attention at the FTV stage. These included investigation into the costs associated with the offshore substation platform (**OSP**), submarine cable supply and installation. Below are the main points arising from our review, and the forensic review, and a description of the adjustments applied at ITV. Full details are set out in the ITV letter issued by Ofgem on 22 March 2018 (the **ITV Letter**).

3.10. In conducting the ITV cost review, Ofgem highlighted some crosscutting issues, i.e. issues that apply across more than one cost category, in addition to specific cost category adjustments. These are all described below.

Ofgem review – Crosscutting issues

3.11. The construction of the Transmission Assets was undertaken using two Engineering, Procurement, Construction and Installation (**EPCI**) contracts. One contract covered submarine cables and the other contract covered the electrical systems (onshore and offshore substations and land cable). When compared to other offshore projects with similar characteristics, the Transmission Assets costs benchmarked higher.

3.12. The Developer asserted that the higher costs could be attributed to the EPCI contracts because they included a number of advantageous elements such as extended warranties, a single source supplier and mitigation of cost escalation during construction.

3.13. We considered this information and sought to assess to what extent the Project's excess costs, compared to benchmarks, could be justified by the extra warranties and construction risk mitigation contained in the EPCI contracts. At the ITV stage, we included the higher than benchmark costs while our analysis was ongoing, subject to further assessment at the FTV stage.

Ofgem review – Individual cost categories

3.14. We undertook a detailed assessment of each cost category. Below we discuss each category where an adjustment or further review at the FTV stage was deemed necessary.

OSP

3.15. We compared the Project's OSP costs submitted in the May CAT with those of other comparable projects and it benchmarked high.

3.16. We noted a substantial contract amendment related to a redesign of the OSP. This redesign was necessary as inaccurate wave height met-ocean data was used in the original design. We identified reductions, totalling £5.7m, that were made to deduct inefficient costs incurred as a result of this error.

3.17. The Developer put in place mitigation measures to ensure the overall project maintained its programme avoiding any delay that would jeopardise the ability for the Offshore Wind Farm to qualify for the Renewables Obligation Certificates (**ROCs**). These measures included extra payments to reserve heavy lifting equipment and further costs to allow the connection of turbines directly to the export cables, should there be a delay to the

delivery of the OSP. We disallowed £5.0m for these costs as we considered they were incurred to protect the Developer's revenue stream. We considered these generation costs and, therefore, they were not included in the ITV.

3.18. The Developer, following a review of the remaining project risks, reduced the contingency for the OSP by £2.3m and the forecast costs of Plan B/C of £2.7m.

3.19. Despite the above reductions (totalling £16.1m), the OSP was still benchmarking higher than other comparable projects. At the ITV stage, we identified some factors that might have contributed to the higher than expected cost levels such as the depth of water at the OSP location, the use of the EPCI contracting strategy and the weight of the generator equipment on the OSP.

3.20. Whilst we were continuing our investigations into the issues above, we did not make any further reductions to the OSP category at the ITV stage, although we advised that further reductions might be necessary at the FTV stage.

Submarine cable supply and installation

3.21. We compared the Project's submarine cable supply and installation costs with those of other comparable projects. The cost of these assets benchmarked higher than expected.

3.22. The Developer put in place mitigation measures to ensure the overall project maintained its programme and to prevent delay that would jeopardise its ability to qualify for ROCs. These measures included extra payments for cable joints and engineering support should there be a delay to the delivery of the OSP. We considered these to be costs that the Developer should bear and so disallowed £0.2m.

3.23. This category also included costs related to the OSP design amendment. We considered these costs to be a consequence of the error in measuring the wave heights and therefore we disallowed £0.6m.

3.24. The Developer also reduced the contingency in this category by £3.8m, of their own accord, following a review of their remaining risks.

3.25. Following the reductions described above, together with other minor adjustments, (totalling £5.6m), this category was still benchmarking higher than other comparable projects.

3.26. In line with the approach taken on the OSP, we considered that the EPCI contracting strategy might have contributed to higher costs. We did not make any further reductions to the subsea cable category while our analysis of EPCI contract contribution was ongoing and advised that further reductions might apply at the FTV stage.

Interest During Construction

3.27. The Developer submitted IDC costs of £29.2m. As a result of deductions to the Capex costs for the ITV, there was a consequential IDC reduction to £29.1m.

Transaction costs

3.28. The Developer submitted an estimate for transaction costs of £2.1m, which were broadly in line with previous projects, and so were included in the ITV in full, to be reviewed at the FTV stage

Forensic Review

3.29. When establishing the ITV, we took into account the results of the forensic investigation conducted by independent consultant Grant Thornton (**GT**). They recommended a number of adjustments due to updated cost estimates. The net result of this review was a decrease of £2.2m to the May CAT. We incorporated this adjustment in the ITV. The investigation also highlighted £0.9m of costs where justification of the value of the estimate was insufficient. We removed these costs from our estimate at ITV.

Process for determining the Assessed Costs

Accuracy and Allocation

3.30. The Project was constructed using an EPCI approach. An ex-post forensic accounting investigation was undertaken by GT to ensure that the costs reported to us by the Developer were accurate, in that they represented the actual costs incurred by the Developer during the development and construction of the Project.

3.31. This investigation considered the following main contracts in respect of the Transmission Assets:

a) Alstom Petrofac Consortium (**APC**) in relation to the contract for the provision of electrical system works and transportation and installation of the onshore substation and cables and the offshore substation; and

b) VBMS (UK) Ltd/NKT cables GmbH & Co (**VBMS**) for the design, fabrication, supply, installation and testing of subsea cables.

3.32. We also checked that the costs were allocated to the correct asset category, in particular between Galloper Offshore Wind Farm generation assets (the **Generation Assets**) and the Transmission Assets. To assess whether the costs were allocated correctly we took into consideration the following:

a) metrics used when allocating costs between generation and transmission;

b) the Developer's CAT submissions;

c) the findings of the forensic accounting investigation; and

d) cashflow payments related to the Transmission Assets.

Efficiency

3.33. After costs had been appropriately identified and allocated, we performed an assessment of whether these costs were economic and efficient, which involved an internal benchmarking review as well as a wider review of costs incurred in each cost category.

Summary of Assessment

3.34. Following completion of the development and construction of the Transmission Assets, the Developer submitted, in the November CAT, costs amounting to a value of £300.7m. Our assessment of the economic and efficient costs which have been or ought to have been incurred, in connection with developing and constructing the Transmission Assets, has established a FTV of £281.8m. Table 2 below provides a breakdown of the cost categories for the Project at each stage and the changes between the ITV and the FTV stages, and paragraphs 3.35 – 3.63 set out the issues considered as part of the FTV stage.

Table 2: Summary of cost categories*

Category	InTV Sep 16 (£m)	ITV Mar18 (£m)	FTV Aug19 (£m)	Reasons for change between ITV and FTV
Capex	£239.7	£228.0	£223.1	Increases of: £7.6m due to settlement of outstanding disputed costs between the Developer and the contractor £0.5m for jack-up barge and supply boat £1.2m for variations related to sea cable installation £0.8m due to category specific project management resources Decreases of: £0.3m due to reduced use of crew transfer vessels £7.6m for disallowance of costs related to settlement agreement £0.2m for resources related to shunt reactor issue £0.1m for miss-allocated costs pertaining to generation assets £2.6m for jack-up barge and supply boat to accelerate the commissioning activities £1.6m for contribution to weight of OSP by generation equipment £1.3m for variations related to submarine cable £1.3m in resources adjustments
Development	£32.9	£29.5	£28.0	Increase of: £2.0m for resources increases due to resources plan changes £0.1m for land transaction substantiated at FTV Decreases of: £3.2m for resources adjustments £0.1m for land transaction cost portion beyond licence grant period £0.3m for other small movements
Contingency	£23.9	£2.9	£0.0	Decrease of: £2.9m due to contingency being released
IDC	£30.4	£29.1	£29.3	Increase of: £0.2m due to correction for timing and cash flow adjustments from disallowed costs
Transaction	£2.1	£2.1	£1.3	Decrease of: £0.9m for reduced legal fees and reallocation of costs to common resources costs
Total	£329.1	£291.6	£281.8	

**these figures may not add to totals due to rounding.*

FTV - crosscutting issues

3.35. At the FTV stage, we benchmarked the costs submitted through the November CAT as part of our assessment process. When compared to other offshore projects with similar

characteristics, the cost of the Transmission Assets again benchmarked higher than expected.

3.36. We attempted to quantify the benefits that the Developer asserted could be derived from the use of an EPCI contracting strategy. However, our analysis concluded that no objective evaluation could be conducted and that any benefits could only be considered on a qualitative basis, which was confirmed by independent external advice. We did not recognise any specific costs relating to the unquantified benefits of the use of an EPCI strategy.

Capital expenditure

3.37. The Capex element of the Assessed Costs is £223.1m. Overall, the Capex has decreased by £4.9m from the ITV to the FTV stage. This decrease is the result of balancing a series of costs increases and decreases as set out in more detail in Table 2 above.

Accuracy and allocation of Capex costs

3.38. For the majority of Capex costs incurred on the Project, it was clear whether they should be allocated to the Transmission or the Generation Assets in their entirety. For costs shared between Generation Assets and Transmission Assets, the Developer allocated certain proportions to the Transmission Assets using cost allocation keys based on cost, time or area, which differed depending on the type of cost considered. Only those costs related to the Transmission Assets were allowed in the FTV.

3.39. In the November CAT, the Developer included an overall Capex cost increase of £10.0m compared to the ITV value (see Table 1). This increase was mainly due to the inclusion of sums for a settlement agreement and several variations for jack-up barge, supply boat, and related to sea cable installation, in addition to increases as costs became firm. The November CAT included costs related to the installation of the 33kV switchgear, which is related to the generation portion of the project and so these costs were disallowed.

Efficiency of Capex costs

3.40. The FTV has a net Capex decrease of £4.9m compared with ITV. Some cost categories showed a decrease while others had a cost increase. The overall Capex decrease is the result of cost updates from the Developer (see paragraph 3.34 and Table 2) and adjustments applied following our cost review, which are detailed below.

3.41. The Developer has provided additional information to support the costs submitted at the FTV stage, our analysis of these is set out below.

Settlement Agreement

3.42. When evaluating cost variations, we noted a substantial cost increase associated with the contract for the provision of electrical systems works and installation of the OSP. This cost was allocated proportionally to all the cost categories affected by the contract that include the offshore substation, land cable, onshore substation and the reactive components.

3.43. The cause for these additional costs was delays in the works conducted for both substations, in part caused by failure of the shunt reactors and by defects associated with a set of capacitors. The Developer claimed an indemnity for damages and the contractor submitted a counterclaim for the further works they conducted. The Developer and contractor entered into detailed negotiations in order to settle the respective claims resulting in a settlement agreement.

Ofgem's view

3.44. We analysed the reasons behind the settlement agreement and determined that the costs associated with it were incurred as a consequence of interfaces issues between the Developer and its contractor and delays on either side. We did not identify any factors outside of the control of the parties that could be attributed as the source of these additional costs and therefore we disallowed these costs in their entirety. As the settlement agreement costs were proportionally allocated across four cost categories (offshore substation, land cable, onshore substation and reactive substation), the respective allocation of cost has been disallowed in each category.

Offshore substation platform

3.45. As set out in paragraph 3.19, at the ITV stage we considered two factors that could have contributed to the high cost of the OSP; these were:

a) that the OSP is in deeper water than comparable projects; and/or

b) the additional weight of the Generation Assets on the OSP.

3.46. We analysed the cost of the OSP in relation to the water depth and compared it with nearby projects. We could not find any strong correlation between these two factors and concluded that water depth was not the reason for a higher cost of the OSP. We also analysed the contribution to weight, and hence cost, of generation equipment to the structure of the OSP and estimated this to be £1.6m.

3.47. We evaluated OSP cost variations in order to ensure they were legitimate and in line with efficient construction. We noted a cost increase associated with the provision of a jack-up barge and supply boat that were procured by the Developer to accelerate the commissioning activities.

3.48. We identified that costs for the installation of generation related equipment were erroneously allocated to the OFTO; the Developer quantified this costs and removed from the CAT.

Ofgem's view

3.49. We consider that the additional weight of the Generation Assets on the OSP is significant enough to justify a contribution to the high cost of the OSP. We estimated the additional cost attributable to the generation equipment to be £1.6m and we applied this reduction at FTV as it is a generation cost.

3.50. We consider that the OSP is benchmarking high compared to other projects and that as an EPCI strategy has been adopted to minimise risks, acceleration costs applied here are not considered economic and efficient, therefore the sum of £2.6m was disallowed.

Onshore substation

3.51. The Developer submitted additional costs for resources, identified when analysing resources throughout the cost categories. The Developer confirmed that additional personnel resources were deployed to deal with issues related to the shunt reactor and quantified these; we removed those costs accordingly.

Ofgem's view

3.52. As these resources are associated with the disallowed costs of the settlement agreement, we do not consider them economic and efficient and therefore this figure has been deducted from the FTV.

Submarine cable installation

3.53. The Developer submitted costs for this sub-category, which we benchmarked and found were high compared to similar projects. We identified cost variations in respect of:

a) interface issues between different contractors. For example, the contractor responsible for the installation of cable terminations could not start their works according to plan, due to another contractor preventing access to the OSP. This resulted in further costs for standby of personnel and vessel costs in addition to supplementary project manager and engineer hours.

b) jointing works were also delayed, as they could not be carried out prior to completion of certain works on the OSP that were carried out by a different contractor. This led to additional costs for the standby of personnel, site facility and change from 10 to 24 hours working shifts to accelerate the completion of jointing operations.

c) disposal of surplus export cable. This is part of normal practice after cable installation and an option should have been included in the original contract. The export cable was left on the installation vessel awaiting decision on the next course of action. When the Developer decided to scrap the cable, a variation order was raised, including the transport of the cable from its location on the installation vessel to a suitable location for disposal.

Ofgem's view

3.54. We examined the information and justification provided by the Developer for the costs associated with the variation orders for delays in cable termination and jointing works. The reasons behind the delays, and hence the additional costs incurred, were due to interface issues between the Developer and the contractors where the Developer could not manage the work according to the changing requests of the contractor. For this reason, we have disallowed the costs related to the cost variations for the cable installation. Similarly, the cable disposal was not planned efficiently as delays in decision making resulted in additional costs. Therefore, our view is that the costs associated with all these variations were not economic and efficient and we disallowed these costs.

Personnel-related costs

3.55. The November CAT included costs for resources and Project Management (**PM**) in each of the cost categories. When GT carried out its investigation, it was provided with details of the system used to track time spent by personnel working on specific areas of the Project. GT concluded the system was robust, however highlighted that costs attributed to the Transmission Assets were disproportionally high when compared to the same costs attributed to the generation portion of the Project.

Ofgem's view

3.56. According to independent consultant reports, the level of PM costs should be around 7-10% of Capex depending on the contracting strategy, and projects adopting an EPCI contract should have PM costs towards the lower end of this range. We found that other projects with the same contracting strategy as the Developer had a level of PM costs not exceeding 7%. The costs submitted by the Developer for PM are higher than what we consider to be economic and efficient and therefore we adjusted the overall level of PM costs resulting in a reduction of £1.3m across Capex cost categories and an overall reduction of £4.5m when including resources from Development. The latter includes a reduction of £1.3m proposed by the Developer as a result of firming up costs when allocation of resources was analysed.

Development costs

3.57. The assessed development expenditure for the Transmission Assets at FTV is £28.0m, a reduction of £1.5m since ITV. The detailed cost increases and decreases are set out in Table 2 above and include:

a) a reduction of £0.3m as a result of "firming up" costs allocated to the Transmission Assets from the estimated figure originally submitted at the ITV stage;

b) an increase of £0.1m for the land costs for Crown Estate lease on the cable corridor. These costs were not substantiated at the ITV stage but were substantiated at the FTV stage;

c) a decrease of £0.1m that related to leases for the onshore substation land and the landfall and sea cable corridor for a period of time much longer than the duration of the OFTO revenue term; and

d) an overall reduction of £3.2m to PM costs of this category, see para 3.55-3.56 for further details of our analysis of the PM costs.

Contingency

3.58. The Assessed Costs do not contain a separate contingency value. £2.9m of the contingency that was submitted at the ITV stage was either used or not realised and therefore was not included by the Developer in the November CAT.

Interest during construction

3.59. In the November CAT, the Developer included £30.2m of IDC, a £1.1m increase since ITV. This is based on the Developer's calculation of the IDC to completion of the assets over a period from January 2012 to October 2017 based on the Interim Operational Notice (ION B) provided to the Developer by National Grid.

3.60. We allow the Developer to accrue interest during the development phase of the project provided this does not exceed a set period of time. We made an adjustment to the value of IDC by calculating the efficient timing for the development phase that increased from 30 to 34 months, as a result of our periodic review of a range of projects, creating an increase in IDC.

3.61. This increase was offset by a reduction in IDC proportionate to the reduction in Capex for disallowed costs that had accrued interest during the construction phase of the project. A proportion of the disallowed costs were incurred after IDC accrual ended, therefore the IDC was not adjusted for these costs. The overall reduction to IDC is £0.9m to the November CAT (see Table 1) which results in an increase of £0.2m since ITV. The total IDC for the Transmission Assets at FTV is £29.3m.

Transaction costs

3.62. The Developer has submitted a firm estimate of the transaction costs it expects to incur to asset transfer. We have reviewed this estimate and assessed transaction costs at £1.3m.

3.63. The Developer provided a breakdown of the transaction costs submitted. They included both internal and external costs. The external costs related to professional services in respect of the tender, e.g. legal. We have concluded that the costs provided by the Developer were allocated appropriately.

3.64. Transaction costs decreased by £0.8m since the ITV due to the transaction budget being revised and costs being firmed up.

Ofgem's view

3.65. Transaction costs can only be provided to us by developers to a reasonable degree of accuracy towards the end of the tender process. We have considered the level of costs submitted and concluded they are in line with expectations and are considered efficient and economic.

Confirmation in relation to tax benefits

3.66. The ITV was calculated on the basis that the OFTO would obtain the full benefit of all available capital allowances. If this were not the case for the FTV, we would reduce the assessment of costs for an amount that reflects the value of the tax benefit retained by the Developer. The Developer has confirmed that the OFTO will be able to obtain the full benefit of all available capital allowances; at the time of licence grant when FTV will be defined this will be translated into the FTV coinciding with the Assessed Costs should no other conditions change.

4. Conclusion

4.1. In conclusion, in accordance with Regulation 4 of the Tender Regulations, the Authority has assessed the economic and efficient costs which ought to have been incurred in connection with developing and constructing the Transmission Assets as £281,778,981.

Appendices

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Appendix 1 - Glossary

A

APC

Alstom Petrofac Consortium

Assessed Costs

The final assessment of costs determined by Ofgem through the cost assessment process for the Galloper Offshore Wind Farm transmission assets.

C

Capex

Capital Expenditure

CAT

Cost Assessment Template

Cost Assessment Guidance

See definition in Section 1 of this report

D

Developer

Galloper Wind Farm Limited

E

EPQ

Enhanced Pre-Qualification

EPCI

Engineering, Procurement, Construction and Installation

F

FTV

Final Transfer Value

G

GEMA

The Gas and Electricity Markets Authority

Generation Assets

The Galloper Offshore Wind Farm Generation Assets

GT

Grant Thornton

I

IDC

Interest During Construction

InTV

Initial Transfer Value

ITT

Invitation to Tender

ITV

Indicative Transfer Value

ITV letter

See definition in Section 3.9 of this report

M

May CAT

The Developer cost assessment template submitted on 17 May 2017

MW

Megawatt

N

November CAT

The Developer cost assessment template submitted on 6 November 2018

O

OFTO

Offshore Transmission Owner

OFTO licence

See definition in Section 1 of this report

OFTO regime

See definition in Section 1 of this report

OSP

Offshore Substation Platform

P

PIM

Preliminary Information Memorandum detailing the project's details released to EPQ bidders through the tender portal.

PM

Project Management

Project

The development and construction of the Transmission Assets

Q

QTT

Qualification to Tender

R

ROC

Renewables Obligation Certificate

S

Section 8A Consultation

See definition in Section 2.13 of this report

T

Tender process

See definition in Section 1 of this report

Tender Regulations

See definition in Section 1 of this report

Transmission Assets

The Galloper Offshore Wind Farm Transmission Assets

TRS

Tender Revenue Stream

V

VBMS

VBMS (UK) Ltd/NKT cables GmbH & Co