

Decision

Offshore Transmission: Cost Assessment for the Walney Extension Transmission Assets

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This document sets out the cost assessment for the Walney Extension 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 Walney Extension Limited, incorporated by the consortium of Mitsubishi Corporation, HICL Infrastructure plc, and Chubu Electrical Power.

Diamond Transmission Partners Walney Extension 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 document sets out Ofgem’s assessment of the economic and efficient costs which ought to have been incurred for the development and construction of the transmission assets (**the transmission assets**) for the Walney Extension (**WE**) offshore transmission project (**the Project**). It also details the cost assessment process we have undertaken.

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

- The initial calculation of costs based on Walney Extension Limited’s (**the Developer**) initial estimate, the Initial Transfer Value (**InTV**), was £517.0m. This was communicated by Ofgem to the Developer and published in the preliminary information memorandum in September 2016;
- The indicative estimate of costs, the Indicative Transfer Value (**ITV**), was £504.1m. The estimate was calculated as a result of further information regarding the development and construction of the Project being made available by the Developer and continuing analysis by Ofgem and its advisors. This updated calculation was communicated to the Developer in June 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 Invitation To Tender (**ITT**) stage submissions; and
- The final assessment of costs is £446.6m (**the Assessed Costs**). This is a reduction of £47.6m from the Developer’s final submission of £494.2m. 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 cost of £446.6m is the amount to be paid to the Developer by the OFTO for the Transmission Assets, i.e. the Final Transfer Value (**FTV**).

The key components of the Initial, Indicative and Final Transfer Values, together with the Developer’s submission for the latter, are given in table 1 below.

Table 1: Summary of costs components*

Category	InTV	ITV	Developer Submitted cost for FTV review	FTV
	Sep16 (£m)	Jun18 (£m)	Dec18 (£m)	Mar20 (£)
Capex	365.0	386.9	399.0	364.9
Development	78.6	49.7	49.3	44.4
Contingency	20.2	20.1	0.0	0.0
IDC	50.8	44.5	42.7	34.1
Transaction	2.4	2.9	3.2	3.1
Total	517.0	504.1	494.2	446.6

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

Sections 3.29 – 3.71 set out details of the Assessed Costs and any reductions made to the values submitted in the December 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 £22m;
- b) The development costs have decreased by £5.3m;
- c) A contingency amount of £20.1m was removed by the Developer in the December CAT;
- d) The Interest During Construction (**IDC**) decreased by £10.3m; and
- e) The transaction costs have increased by £0.2m.

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

Capex

The Capex for the FTV has decreased by £22m since ITV. The main changes are:

Increases of:

- a) £4.8m due to submarine cable installation and damage incidents;
- b) £3.6m for land cable supply and installation resources;
- c) £8.2m for onshore substation landscaping works and extended construction timelines and interface management;
- d) £0.4m for various variation orders;
- e) £0.5m for adjustments of costs related to land cable:

Decreases of:

- a) £9.4m for removing the internal transfer pricing element applied to resource costs;
- b) £4.1m for various delays, mainly as a consequence of issues with the onshore substation construction;
- c) £2.5m for contractors' related issues;
- d) £6.0m for costs to be recovered through insurance claims;
- e) £10.1m for civil works contract change of scope and design and related delays;
- f) £3.1m for re-scoping landscaping works;
- g) £0.8m for adjustments proposed by the Developer;
- h) £1.9m for the reduction in the windfarm/transmission cost allocation rate; and
- i) £1.6m for final costs on submarine cables being lower than predicted.

Development Costs

The development costs in the FTV have decreased by £5.3m since ITV due to:

Increases of:

- a) £0.8m for firming up actual cost of insurance and adjusting allocation rate to capex ratio at ITV.

Decreases of:

- a) £3.5m for removing the internal transfer pricing element applied to resource costs;
- b) £1.4m for the reduction in the windfarm/transmission cost allocation rate; and
- c) £1.2m for costs reductions on final costs, items no longer required at FTV and other minor adjustments.

Contingency

We included £20.1m of contingency in the ITV. No contingency remained to be included in the December CAT submission.

Interest During Construction

The Interest During Construction (**IDC**) amount has decreased by £10.3m since the ITV. This decrease includes the reduction for £8.5m due to correction for timing and cash flow adjustments from disallowed costs and the reduction of £1.8m for inclusion of hedging gains in cash flow.

Transaction costs

Transaction costs have been assessed at £3.1m. The transaction costs are composed of both internal and external resource costs arising from the Developer's participation in the tender process. They show a net increase of £0.2m since the ITV. This increase is due to an increase by £0.3m for costs firmed up at FTV and a decrease by £0.1m for the internal transfer pricing element applied to resource costs.

Assessed Costs at FTV for the Transmission Assets

In accordance with Regulation 4(2)(b) of the Tender Regulations, the Assessed Costs of the Transmission Assets are £ 446,647,850. 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. 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 Authority¹ 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 Walney Extension 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 cash flows. 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) capex;
- b) development costs
- c) contingency provision;
- d) interest during construction; and
- e) transaction costs.

Process stages for cost assessment

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

Initial Transfer Value

2.9. The InTV is based on cost submissions by the developer for the relevant project. This value is made available to bidders at the Pre-Qualification or at 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 the second test, 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, which focuses on, for example, a particular cost component, such as an increase of costs in a contract or multiple increases across several contracts.

3. Walney Extension 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 Assets²

3.1. The Walney Extension (WOW 03 and 04) Offshore Wind Farm is located NW of the existing Walney Wind Farms 1 and 2, approximately 19km WSW off the Isle of Walney coast in Cumbria, 26km SW of the Millom coast and 31km SE of the Isle of Man. Wind farms in close proximity to the site include the existing Walney 01, Walney 02 and West of Duddon Sands. Closer to the shore are Round 1 projects Barrow and Ormonde.

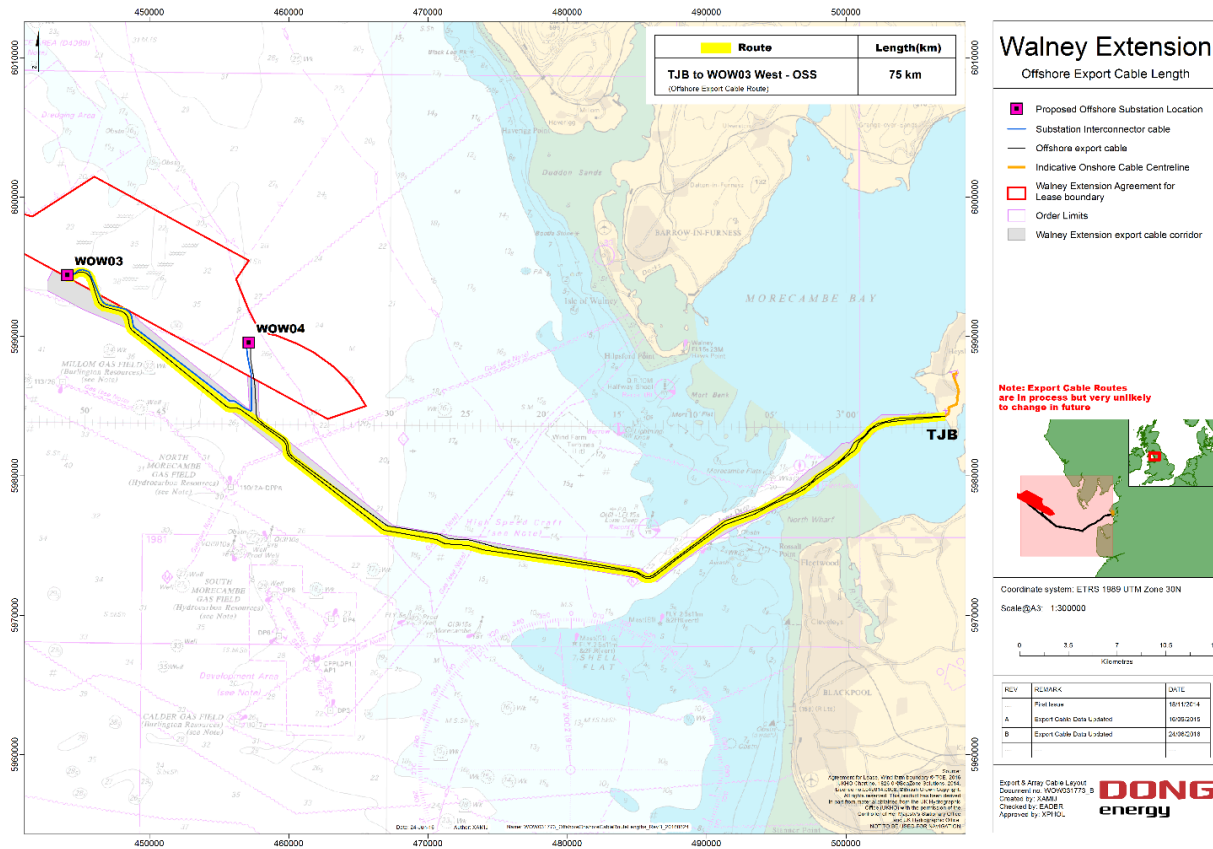
3.2. WOW 03 consists of 40 V164-8.25MW turbines from MHI Vestas and WOW 04 of 47 7.0MW 154 Siemens turbines. The total installed capacity of 659MW is enough to power almost 600,000 homes in the UK. The onshore substation is located 1.2km inland connecting to the adjacent, existing NGET Middleton 400kV substation.

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

<https://walneyextension.co.uk/About-the-project#0>

https://www.ofgem.gov.uk/system/files/docs/2016/10/walney_extension_final.pdf

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



3.3. The Walney Extension Offshore Wind Farm is owned in partnership between Ørsted (50%), PFA (25%) and PKA (25%), two Danish pension funds.

3.4. The Transmission Assets that are transferring to the OFTO comprise:

- Two offshore substations (one each for WOW03 and 04);
- Two offshore export cables with route lengths of approx. 80km for WOW03 and 67km for WOW04 to onshore transition joints;
- Two onshore export cables with a route length of approx. 4km from the onshore transition joint to the onshore substation;
- Two 400kV cables of approx. 0.4km, connecting to a double busbar via one 400kV Gas Insulated Switchgear (GIS) bay per circuit within the existing NGET Middleton substation; and
- A 220kV subsea interlink cable between the two offshore substations with an approx. length of 23km.

3.5. The boundary points for the Walney Extension Transmission Assets are defined as follows:

- a) Offshore WOW03 and WOW04 OSSs: located at the sealing end of the 34kV cable terminating at the 34kV MV switchgear connecting from the grid transformers on each of the OSS; and
- b) Onshore: located in the first gas barrier zones of both main and reserve 400kV busbar contained within the existing NGET Middleton 400kV substation.

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

- a) subsea cable - 1200mm² (650m), 1600mm² (500m);
- b) onshore cable – 1200 mm² (600m), 2000mm² (600m), 400kv 1600 mm² (450m),
- c) various joints (transition, straight and cable repair joints);
- d) cable terminations; and
- e) other miscellaneous spares.

Overview of cost assessment process for Walney Extension

3.7. We received the first cost information from the Developer in June 2016. Since then we have worked with the Developer and our advisers to undertake 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 (£517.0m) published.
- b) **June 2017:** Developer revised CAT used to establish ITV (the **June CAT**).
- c) **June 2018:** formal letter issued to communicate ITV figure (£504.1m).
- d) **May – October 2018:** ITT process ongoing.
- e) **December 2018:** Developer submitted a revised CAT (the **December CAT**).
- f) **March - May 2019:** forensic accounting and FTV investigation undertaken.
- g) **November 2019:** final cost reporting updates and final supporting information received from the Developer.
- h) **March 2020:** draft cost assessment report published alongside the Section 8A Consultation.
- i) **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

3.8. The InTV of £517.0m 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.

3.9. The ITV of £504.1m was published in June 2018. Our estimate was supported by our forensic accounting advisors, Grant Thornton (**GT**), our internal analysis and the supporting information provided by the Developer.

3.10. When we set the ITV, we reduced the costs submitted by the Developer in the June CAT by £29.0m. This adjustment took 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 revision of unsubstantiated costs through our financial consultants, review of the risk register and confirmation of transaction costs. Below are the main points arising from our review, 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 12 June 2018 (the **ITV Letter**).

3.11. When 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

3.12. During our assessment, we benchmark cost categories to identify areas that need immediate attention during the investigation. To ensure that the costs included in each of the Project's cost categories are consistent with previous projects, we reallocated costs in the CAT. These included the costs for the Digital Temperature Sensing (DTS) equipment from the onshore cable category, the Landowner agreements and all directly attributable construction site and commissioning costs from the common costs to the appropriate specific cost categories. Following the reallocation, we benchmarked the project costs and found that the offshore substation and the common costs categories were higher than expected.

3.13. The Developer used a number of different allocation methodologies to apportion shared costs to the transmission assets. GT and Ofgem noted that this rate is higher than rates we have seen on other projects. We expect the allocation of shared costs to be in line with the transmission to generation direct capex ratio, unless evidence-based justification is provided. We analysed the methodologies proposed by the Developer but concluded the methodologies were too complex. Therefore, in agreement with the Developer, we reverted to the direct capex ratio. The impact of applying this ratio was a reduction of £11.1m to the ITV.

3.14. Ofgem expects developers to protect project costs against the fluctuation of foreign currency. The Developer did not hedge against foreign exchange movements at the time of the Financial Investment Decision (**FID**) in October 2015. In May 2016, we reviewed the developer's hedging proposal and agreed how we would treat the impact of foreign exchange movements. Since then, the Developer applied hedges to the committed costs. As a result of this process, we agreed an adjustment of £0.4m

for resources costs that the Developer decided not to hedge, which we considered sufficiently certain for the purpose of hedging.

3.15. The Developer included £0.7m of strategic spares in the CAT - £0.5m in the offshore substation category and £0.2m in the onshore substation category. The Developer provided a memo, which stated the total value of the spares would be updated to £0.4m. Therefore, we reduced the ITV by £0.3m.

Ofgem review – individual cost categories

3.16. We assessed the submitted costs on a category-by-category basis. The following sections discuss each of these, where an adjustment was applied.

OSP

3.17. We applied a reduction to the OSP cost category of £1.6m. This reduction was made-up of the following components:

- a) We believe the weight of generator equipment is significant enough to justify a cost contribution from the generator to the overall cost of the OSP. We estimated this cost to be £1.1m;
- b) £0.2m for fabrication service agreements no longer required;
- c) £0.3m for remaining fabrication budget no longer required.

Onshore substation

3.18. We removed £3.0m at the developer's request for costs not incurred and adjusted the value of the National Grid service agreement by £0.2m to cover costs up to first power only. Having considered all other costs submitted and the justifications provided, our view was that the costs incurred by the Developer for this category were economic and efficient.

Transaction costs

3.19. The Developer submitted an estimate for transaction costs of £3.1m. This cost was broadly in line with previous projects and we included those costs in the ITV with the intention to review them at the FTV.

Interest During Construction

3.20. We adjusted IDC to account for hedging gains (£1.0m) and the deductions to Capex costs (£2.5m). The size of this second deduction was dependent on the spend profile of included costs and it was therefore identified as subject to further review at FTV. Our estimate of the IDC value for the ITV was £44.5m.

Forensic review

3.21. When establishing the ITV, we took into account the results of the forensic investigation conducted by GT.

3.22. GT recommended a number of adjustments due to reporting inaccuracies and updated cost estimates. The net result of this review was a decrease of £6.1m to the June CAT. We incorporated this adjustment in the ITV. The investigation also highlighted £3.0m of unsubstantiated costs where justification of the estimate in the CAT was insufficient. We removed these costs from our estimate at ITV. GT also highlighted £60.8m of unsubstantiated costs that would become firm at FTV, which we decided to re-assess at FTV.

3.23. GT assessed the level of contingency, as a proportion of total costs, and found it reasonable. However, GT was unable to substantiate the basis of the contingency calculation and its monetary value as the Developer declined to share the full risk register. We expect developers to share the full risk register, which we noted would be scrutinised at FTV to assess the contingency submitted (if any).

Process for determining the Assessed Costs

Accuracy and Allocation

3.24. The Project was constructed on a multi-contract basis. 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.

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

- a) JV Cofely Fabricom-Iemants (JVFI), in relation to the OSP fabrication;
- b) SHL Offshore Contractors B.V. (SHL), for the transport and installation of the OSP;
- c) NKT/ABB HV Cables Sweden AB (NKT/ABB) for the supply and termination of the 220kV submarine and land cables;
- d) Deep Ocean Limited (Deep Ocean), in relation to the installation of the submarine cable;
- e) Amey Utility Services Limited (Amey), in relation to the onshore substation construction; and
- f) a sample of the Developer's internal personnel costs, selected at random.

3.26. GT also checked that the costs were allocated to the correct asset category, in particular between Walney Extension 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) cash flow payments related to the Transmission Assets.

3.27. As a result of the GT investigation, costs were re-allocated to the appropriate categories resulting in a zero net change to the CAT costs.

Efficiency

3.28. 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. Although the project benchmarked near to the expected value, we still investigated all costs throughout the cost categories.

Summary of Assessment

3.29. Following completion of the development and construction of the transmission assets, the Developer submitted costs in the December CAT amounting to a value of £494.2m. 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 £446.6m. 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 3.29 – 3.71 set out the issues considered as part of the FTV stage.

Table 2: Summary of cost categories*

Category	InTV Sep19 (£m)	ITV Jun18 (£m)	FTV Mar20 (£m)	FTV – ITV	Reasons for change between ITV and FTV
Capex	365.0	386.9	364.9	-22.0	<p><u>Increases of:</u> £4.8m due to submarine cable installation and damage incidents £3.6m for land cable supply and installation resources £8.2m for onshore substation landscaping works and extended construction timelines and interfaces management £0.4m for various variation orders £0.5m for adjustments of costs related to land cable (GT)</p> <p><u>Decreases of:</u> £9.4m for internal transfer pricing mark-up on resources £4.1m for various delays, mainly as a consequence of issues with the ONS construction £2.5m for contractors' related issues £6.0 for costs to be recovered through insurance claims £10.1m for civil works contract change of scope and design and related delays £3.1m for re-scoping landscaping works £0.8m for adjustments proposed by the Developer £1.9m for reduction in allocation rate (GT) £1.6m for adjustments on submarine cables costs lower than predicted (GT)</p>
Development	78.6	49.7	44.4	-5.3	<p><u>Increases of:</u> £0.8m for firming up actual cost of insurance and adjusting allocation rate to capex ratio at ITV</p> <p><u>Decreases of:</u> £3.5m for internal transfer pricing mark-up reduction to resources £1.4m for reduction in cost allocation rate, adjusted to capex ratio at FTV (GT adjustment) £1.2m for costs no longer required at FTV and minor adjustments</p>
Contingency	20.2	20.1	0.0	-20.1	<p><u>Decrease of:</u> £20.1m due to contingency being released</p>
IDC	50.8	44.5	34.2	-10.3	<p><u>Decreases of:</u> £8.5m due to correction for timing and cash flow adjustments from disallowed costs £1.8m for inclusion of hedging gains in cash flow</p>
Transaction	2.4	2.9	3.1	0.2	<p><u>Increase of:</u> £0.3m for firming up costs at FTV</p> <p><u>Decreases of:</u> £0.1m for internal transfer pricing mark-up on resources</p>
Total	517.0	504.1	446.6	-57.4	

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

FTV - crosscutting issues

3.30. We questioned if all of the Developer's internal resource cost submitted in the CAT included a profit or mark-up. The Developer acknowledged that a mark-up was applied to internal resources throughout all cost categories to comply with the Developer's internal transfer pricing rules. We requested the developer to provide us with the value corresponding to the mark-up applied.

Ofgem's view

3.31. For internal costs, developers are required to submit the names of personnel involved, the activities that they worked on, their day rates and the number of days spent in total on the project in order to substantiate any claims for such costs. We require projects to be carried out at cost, so any mark-up or margin on such internal resources would not be considered economically and efficiently incurred costs. We have therefore disallowed £9.4m as a result of removing this internal transfer pricing related mark up.

3.32. As part of their ex-post investigation, GT calculated the updated capex ratio of direct costs attributable to transmission assets compared to the generation assets values. The new rate is based on the December CAT and the actual costs of the Wind Farm.

Ofgem's view

3.33. We have also further reviewed these supporting costs for these allocations and agree with GT's analysis. This has driven a number of adjustments that GT has made as part of their investigation, a £1.9m cost reduction in total.

Capex

3.34. The Capex element of the Assessed Costs is £364.9m. Overall, the Capex has decreased by £22m from the ITV to the FTV stage. This decrease is the result of the removal of the internal transfer pricing resource mark up, costs to be recovered by insurance claims, a reduction to the costs in the civil works contract, offset by increases in the submarine cable installation costs and a longer than planned construction timeline for the onshore substation. These cost increases and decreases as summarised in Table 2 above.

Accuracy and allocation of Capex costs

3.35. 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 of costs to the Transmission Assets based on the capex ratio between generation and transmission assets. Only those costs related to the Transmission Assets were allowed in the FTV.

3.36. In conducting our analysis of these costs there were a number of items whose accuracy and allocation we discussed with the Developer. These items are set out below.

Adjustments proposed by the Developer

3.37. Offshore substation - we identified excessive costs for fabrication testing inspection. The Developer explained that the cost in the CAT included an estimate and provided the final figure. We applied an adjustment (£0.2m) accordingly. We queried costs for additional barges rental. The Developer explained that the barges were supposed to be booked by the installation contractor. However, the contractor was unable to secure suitable vessels. The Developer intervened and secured barges via a second contractor and claimed the related cost from the original contractor. The Developer proposed that this cost is removed from the CAT and we applied the corresponding adjustment.

Ofgem's view

3.38. During the cost assessment process, we discuss regularly with the Developer all those costs that we do not consider economic and efficient. When the Developer recognises that a mistake occurred during the CAT completion or agrees with our view, then we propose an adjustment. We then apply it to the cost assessment and describe as "Developer proposed adjustment".

Adjustments advised by GT

3.39. As mentioned under sections 3.24 -3.27, GT performed an ex-post review of the CAT consisting of verifying payments for certain directly and indirectly incurred costs. As a result, the following adjustments have been advised:

- a) an overall reduction of £1.6m for submarine cable costs that were lower than predicted; and
- b) an increase of £0.5m for costs related to land cable category incurred and not included in the CAT.

Ofgem's view

3.40. We have taken into account the results of the forensic investigation instructed to GT and have incorporated the above adjustments when determining the assessed costs.

Efficiency of Capex costs

3.41. The FTV has a net Capex decrease of £22m compared with ITV. The overall Capex decrease is the result of cost updates from the Developer (see paragraph 3.37 and Table 2) and adjustments applied following our cost review, which are detailed below.

3.42. The Developer provided additional information to support these costs. For the purposes of informing our assessment of the efficiency of the Project's Capex costs, we reviewed these costs along with the additional information submitted by the Developer. Our views on whether these increases have been incurred in an economic and efficient manner are discussed below.

OSP Acceleration works

3.43. When evaluating cost variations, we noted that some were related to acceleration works. The Developer explained that the additional costs were incurred to maintain the overall programme and sail away date for the OSP. They stated that this avoided much higher costs being incurred if these timelines had slipped. This would have also had the effect of pushing planned onshore works offshore, with the additional associated cost with this. The completion would also have been dependent on weather conditions offshore, again incurring additional costs.

Ofgem's view

3.44. It is Ofgem's position to review all acceleration works, as normally we do not consider them an economic and efficient way of conducting works. We have

considered the justification and evidence provided by the Developer, and in this instance, we have allowed these costs as they prevented the Developer incurring much higher costs than if the sail away date had not been achieved.

OSP delivery

3.45. During the OSP construction, a number of cost increases occurred that related to the late delivery of a transformer and to the SHL contract.

3.46. We received no further information from the Developer in relation to the transformer's late delivery, but the delays in SHL activities were due to changes not anticipated at contract signing.

Ofgem's view

3.47. We analysed the reasons behind these cost variations and concluded that they were incurred as a consequence of interface issues between the Developer and its contractor. As we could not attribute these circumstances to any causes outside the control of the contractor, our view is that the costs associated with all these variations were not economic and efficient and should not be incurred by the consumer. We have therefore disallowed costs for £4.1m for costs associated with the OSP delivery.

Contractor-related Issues

3.48. We identified costs associated with issues with contractors and suppliers (£2.5m). These issues cover multiple areas in the CAT and these are detailed in each cost category below.

3.49. Offshore Substation - The Developer incurred costs for equipment (Hydrocals) which malfunction. We applied a reduction to this cost of £0.6m to reflect the value of the equipment in the CAT and the costs of an unsuccessful repair. This also applied partially to the onshore transformer.

3.50. Submarine cable – We identified costs related to a variation for investigating and repairing a section of cable due to armour deformities observed during cable load out. We have disallowed this cost (£1.1m) as we believe that the costs should have been recovered by the Developer.

3.51. Onshore cables – We investigated costs for variation orders related to the onshore cable installation contract (corresponding to £0.7m). We have disallowed this cost where unforeseen physical conditions could have been managed more efficiently, for work to replace damaged ducts, and for a claim related to TJB (Transition Joint Bay).

3.52. Onshore substation – We identified variations related to additional plant and labour costs to achieve the planned completion date for the AIS (Air Insulated Switchgear) and additional costs for HSE design changes and hire of plant to commence commissioning. In addition, amongst the costs submitted, we noted there were acceleration payments related to the offshore switchgear contract. The Developer could not demonstrate that these acceleration costs were not driven by generation-related targets and we have disallowed them (£0.1m).

Ofgem's view

3.53. We investigated the additional costs submitted at FTV referred to above and identified they were ultimately caused by interface or contractor-related issues. We state in our Cost Assessment Guidance, that we expect developers to manage their contractors effectively and when Developers incur additional costs as a consequence of a contractor's failure to deliver, we expect the Developer to recover these costs through the appropriate contract(s) rather than through the cost assessment. For this reason, we have not included these costs, totalling £2.5m.

Insurance claim – Submarine Cable

3.54. We identified costs for an insurance claim (£6.0m) in the submarine cable cost category. According to the Cost Assessment Guidance, section 3.44:

"It is the developer's responsibility to ensure that it has adequate and appropriate insurance to recover all costs in the event of an insurable event occurring. Therefore, we do not expect the developer to seek cost recovery through the cost assessment for costs that are either unrecovered or disputed from insurance claims".

Ofgem's view

3.55. In accordance with the statement contained in the Cost Assessment Guidance as indicated above, we do not allow recovery of insurance claims through the cost assessment, therefore we have disallowed the above cost of £6.0m.

Onshore substation construction settlement agreement and related construction delays

3.56. After the contract for the civil works on the onshore substation was agreed, the Developer transferred additional scope to the contractor in order to reduce interfaces, clashes and potential extension of time claims. However, the date for Take Over Certificate (TOC) established originally was extended substantially. This was due to a number of issues, including additional ground improvement works, additional civil works, and a fire incident at the site and snagging works.

3.57. Ofgem reviewed the information under the settlement agreement that the Developer entered into with the supplier and estimated deductions for costs not being economic or efficient. This totalled £10.1m. This reduction includes costs related to avoidable delays and unacceptable costs, such as acceleration payments to recover accumulated delays. In addition to the above, we applied an adjustment (£3.5m) for additional resources costs sustained by the Developer for a period of 10 months that we considered was avoidable. We also applied deductions to the cost incurred for site security (£0.3m) to keep the site open for longer than originally envisaged due to these delays.

Ofgem's view

3.58. Ofgem considered the information provided by the Developer and evaluated the costs. Ofgem identified costs associated with interface risk and an extended timetable, and these were disallowed that were unavoidable and those that were related to the contractor's performance. As already stated above, and in accordance with the Cost Assessment Guidance, we do not allow Developers to recover costs attributable to a contractor's inability to deliver, therefore we have disallowed those costs and those that arose as a direct consequence of non-delivery (£10.1m in total).

Onshore substation landscaping works

3.59. The same contractor responsible for the onshore substation civil works was also originally assigned completion of the landscaping works. As it became evident that the original contractor was unable to carry out the works required within a reasonable timescale, the Developer decided to assign those works to an alternative contractor. The cost impact of this decision was included in the CAT and we have disallowed this cost at net of the original cost for the same works.

Ofgem's view

3.60. We have reviewed this additional cost and considered that it could have been avoided if the original contractor would have delivered as expected. As this cost is not due to unforeseen circumstances, but rather caused by the contractor's performance, and in line with the Cost Assessment Guidance, we have decided to disallow these costs of £3.1m.

Development costs

3.61. The assessed development expenditure for the Transmission Assets at FTV is £44.4m, a reduction of £5.3m since ITV. The detailed cost increases and decreases are summarised in Table 2 above and include:

- a) an increase (£0.8m) for firming up actual cost of insurance at ITV and adjusting the allocation rate to the corresponding capex ratio;
- b) a cost decrease (£3.5m) for applying the internal transfer pricing mark-up reduction to resources within Development;
- c) a reduction (£1.4m) in allocation rate to transmission due to adjustments to the capex ratio at FTV;
- d) a reduction (£1.2m) for cost no longer required at FTV and other minor adjustments.

Ofgem's view

3.62. We have conducted further analysis and further reviewed the level of Development costs submitted for the FTV and, other than the above, we are satisfied with the level of Development costs submitted by the Developer.

Contingency

3.63. The Assessed Costs do not contain a separate contingency value. £20.1m 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 December CAT.

Interest during construction

3.64. In the December CAT, the Developer included £42.7m of IDC, a £1.8m decrease since ITV. This is based on the Developer's calculation of the IDC to completion of the assets over a period from November 2010 to February 2018 based on the Interim Operational Notice (ION B) provided to the Developer by National Grid.

3.65. We allow the Developer to accrue interest during the development phase of the project provided this reflects a duration that is in line with the principle of being economic and efficient, i.e. there are no time lags where the development phase does not progress, making this duration inefficient. We also considered that TR5 projects might have an extended duration of the development phase compared to earlier projects as they go through the process of the Development Consent Order (DCO) and therefore need to fulfil additional statutory requirements. The developer provided information to substantiate their development phase duration and we accepted this and made no adjustment to the IDC for this period.

3.66. We reduced IDC at FTV by applying the following adjustments to the IDC calculation:

- a) the application of a uniform rate (8%) throughout the entire period of interest accrual as several rates were used incorrectly;
- b) determining of the efficient duration of the development phase starting with the date of the first statutory consultation;
- c) an adjustment to remove the final month of IDC as we consider IDC stops the month preceding asset availability;
- d) an adjustment for the time when assets have reached completion in the different stages of construction (two stages in this project); and
- e) an adjustment taking into account the capex reductions applied at FTV.

3.67. The overall reduction to IDC is £8.5m to the December CAT (see Table 2) which results in a decrease of £10.3m since ITV. The total IDC for the Transmission Assets at FTV is £34.2m.

Transaction costs

3.68. The Developer has submitted a firm estimate of the transaction costs it expects to incur to asset transfer (£3.2m). We have reviewed this estimate and applied a reduction for mark-up included into the internal resources costs for £0.1m.

Ofgem's view

3.69. 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, apart from the adjustment applied throughout the CAT for mark-up reduction, concluded they are in line with expectations and are considered economic and efficient.

Confirmation in relation to tax benefits

3.70. 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 £446,647,850.

Appendices

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Appendix 1 – Glossary

A

Assessed Costs

The final assessment of costs determined by Ofgem through the cost assessment process for the Walney Extension 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

Walney Extension Wind Farm Limited

December CAT

The Developer cost assessment template submitted in December 2018

E

EPQ

Enhanced Pre-Qualification

F

FTV

Final Transfer Value

G

GEMA

The Gas and Electricity Markets Authority

Generation Assets

The Walney Extension 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 3.10 of this report

J

June CAT

The Developer cost assessment template submitted in June 2017

M

MW

Megawatt

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

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

TOC

Take Over Certificate

Transmission Assets

The Walney Extension Offshore Wind Farm Transmission Assets

TRS

Tender Revenue Stream