

Decision

Offshore Transmission: Draft Cost Assessment for the Moray West Offshore Wind Farm Transmission Assets - Moray West

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This document sets out the cost assessment for the Moray West Offshore Wind Farm Transmission Assets (the **Transmission Assets**). This assessment of costs will be used by the Gas and Electricity Markets Authority (the **Authority**) to determine the value of the Transmission Assets to be transferred to the successful bidder in the tender process.

The Final Transfer Value of the Transmission Assets is established as £591.3m. This value has been published in the licence consultation under section 8A of the Electricity Act 1989 (the **Act**), and we do not expect any further changes to the Assessed Costs. However, we do not intend to finalise the Final Transfer Value until the Authority has determined to grant an offshore transmission licence to the successful bidder.

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Executive Summary

This report sets out the cost assessment that Ofgem has undertaken from the Invitation to Tender (**ITT**) stage of the tender process in relation to the Moray West Offshore Wind Farm (**Moray West**) Transmission Assets (the **Transmission Assets**). This work has been used by the Authority¹ to derive the Assessed Costs and will be used to set the Final Transfer Value (**FTV**) for the Transmission Assets. Unless otherwise stated or defined in-text, capitalised terms in this report are defined in the Glossary at Appendix 3.

The cost assessment process involves the below three key stages:

The Initial Transfer Value (**InTV**) for the Transmission Assets was confidentially shared with bidders in an information memorandum on 25 January 2023 and was set at £592.8m, based on information provided to Ofgem by Moray Offshore Windfarm (West) Limited (for the purposes of this report, the **Developer**);

Ofgem reviewed and analysed the cost information and calculated the Indicative Transfer Value (**ITV**) as £582.3m. This updated calculation was communicated to the Developer in May 2024 and the formal ITV letter issued in June 2024; and

The Developer submitted their FTV Cost Assessment Template (CAT) dated 30 December 2024 with a value of £599.0m (the **FTV CAT**). Ofgem reviewed this further cost information to calculate the final assessment of costs as £591.3m (the **Assessed Costs**). This is a reduction of £7.7m from the submitted FTV CAT. It is intended 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 £591.3m is the amount that will be used to set the FTV at licence grant.

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

¹ References to the "Authority", "Ofgem", "we" and "our" are used interchangeably in this document. The Authority refers to GEMA, the Gas and Electricity Markets Authority. The Office of Gas and Electricity Markets (Ofgem) supports GEMA in its day-to-day work.

Table 1: Summary of cost components*

Category	InTV Dec 22 (£m)	ITV Sept 23 (£m)	FTV CAT Feb 25 (£m)	FTV Oct 26 (£m)
Capex	429.5	483.2	518.6	511.1
Other	25.6	28.2	28.1	29.4
Contingency	77.9	27.3	0.0	0.0
Transaction	3.0	2.8	3.1	3.0
IDC	56.7	40.7	49.3	47.8
Total	592.8	582.3	599.0	591.3

*These figures may not add to totals due to rounding

Sections 3.13 to 3.94 of this report set out details of the Assessed Costs and any reductions made to the values submitted in the FTV CAT and against the ITV. The main increases/decreases in the Assessed Costs, against the ITV figures, are as follows:

- the capital expenditure (**Capex**) component of the FTV has increased by £27.9m
- the 'Other' cost category has increased by £1.4m
- the ITV contingency amount of £27.3m was removed in its entirety
- the Transaction costs have increased by £0.3m
- the Interest During Construction (**IDC**) amount increased by £7.1m.

Below we summarise the main increases and decreases to each cost category as shown in Table 1 and detailed in sections 3.13 to 3.94. Please note that the figures set out in this section have been rounded.

Capital expenditure (CAPEX)

We allowed £483.2m of Capex at ITV. This has increased by £27.9m as of the FTV, mostly realising the contingency built into the CAT at ITV. The main drivers for the cost increase are:

- Siemens, Lemants and Nexans contract options, contract adjustment agreements and variation orders
- Additional vessel hire and associated mobilisation, transport and installation costs.

Other costs

We allowed £28.2m of Other costs in the ITV. This has increased by £1.4m to £29.4m at the FTV. The movement in this category relates to continuing project management and an insurance policy into 2025 due to grid delays extending the construction duration of the project.

Contingency

We allowed £27.3m of contingency in the ITV. This was re-itemised by the Developer in the December 2024 CAT submission as actual costs. This value has now been removed in its entirety from the FTV as it has been released or realised at this stage of the transaction.

Interest During Construction

The IDC value has increased by £7.1m since the ITV. This overall increase in IDC is the result of additional project spend and the extended project duration prior to energisation. There were disallowances due to our assessment on asset availability, and changes to the methodology for when each of the circuits are considered available for use.

Transaction costs

Transaction costs have increased by £0.3m since the ITV to £3.0m. This increase relates to the finalisation of costs, as the costs submitted at ITV were forecasted and therefore were not actual. The transaction costs are composed of both internal and external resource costs arising from the Developer's participation in the tender process.

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 is £591,334,951. 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 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 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 granted OFTO Licence.
- 1.6 This report should be read in conjunction with the [Offshore Transmission: Guidance for Cost Assessment](#) (the 'Cost Assessment Guidance').

Related publications

- [The Electricity \(Competitive Tenders for Offshore Transmission Licences\) Regulations 2015 | Ofgem](#)
- [Offshore Transmission: Tender Process Guidance Document for TR10 | Ofgem](#)

2. The Cost Assessment Process

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 Moray West 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 the 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, 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 Developer in the form of cost assessment templates, 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, 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:
- capital expenditures
 - development costs
 - contingency provisions
 - interest during construction
 - transaction costs.

Process stages for cost assessment

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

Initial Transfer Value (InTV)

- 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 the Enhanced Pre-Qualification (**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 (ITV)

- 2.10 We provide the estimate of costs for the Transmission Assets (the **ITV**) for the commencement of the Invitation to Tender (ITT) stage of the tender process. This value is used as an assumption underlying the Tender Revenue Stream (**TRS**) bids submitted by bidders at the ITT stage. The 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 TRS for the full licence period is published.

Costs 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

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.

To support the cost assessment process, we undertake an independent forensic accounting investigation². 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.

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:

the actual costs incurred (e.g. in respect of exchange rates on foreign currency payments)

more relevant metrics for the allocation of shared service costs.

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.

² Conducted by our forensic accounting advisors, Grant Thornton UK LLP.

Test 2 – Assessing if a Developers' costs are economic and efficient

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

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.

We also consider the procurement processes adopted by the Developer to obtain economic and efficient Transmission Asset costs.

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. Moray West Offshore Wind Farm cost assessment

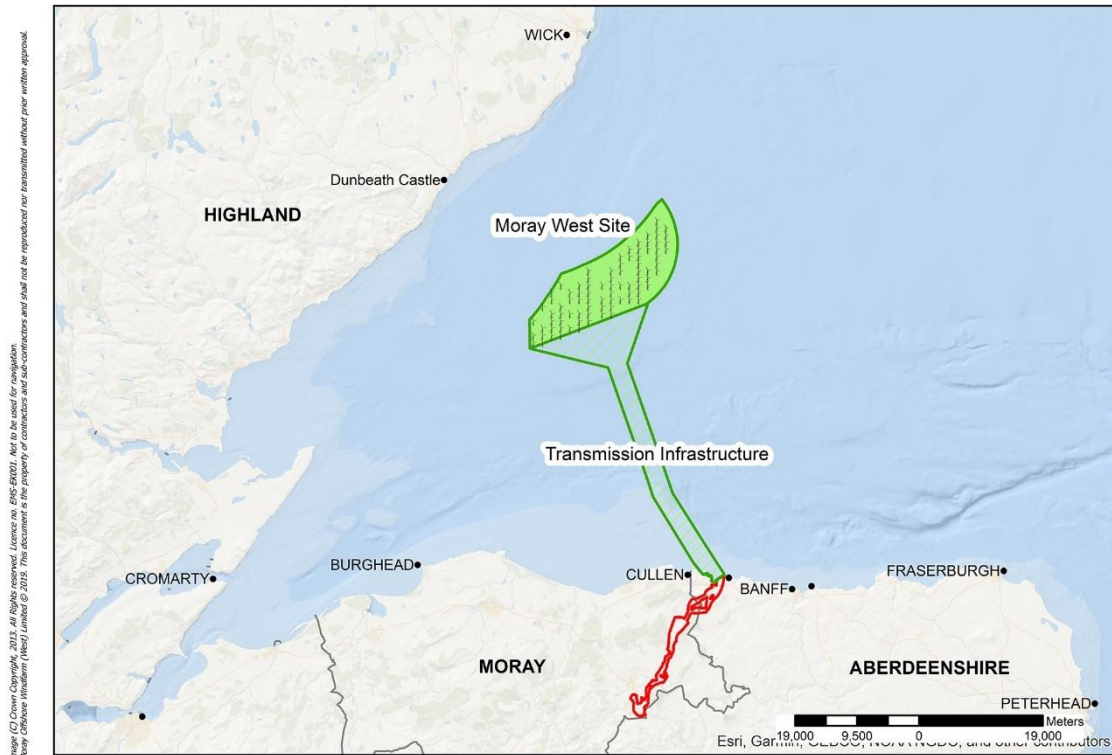
This section sets out a short description of the wind farm and the Transmission Assets, based on information provided by the Developer³. It then summarises how we have undertaken our cost assessment for the Transmission Assets, from the InTV to the FTV and provides a breakdown of the key cost categories that we have considered and highlights the decisions that we have made.

Introduction

- 3.1 Moray Offshore Windfarm (West) (**Moray West**) is located in the Moray Firth 22.5 km off the coast of Moray, Scotland, with a maximum export capacity of 882 MW comprised of 60 Siemens Gamesa SG 14-222 DD 14.7 MW turbines. The Wind Farm output is exported, via 52km of subsea cables and 32km of onshore cables, to the 220/400 kV onshore substation at Whitehillock. This connects at the Transmission Interface Point (**TIP**) to the adjacent 400 kV Scottish and Southern Electricity Networks (**SSEN**) Transmission (**SSEN-T**) substation at Blackhillock, eventually connecting to the onshore Transmission Owner's system. For a full list OFTO assets, please refer to Appendix 1.
- 3.2 Moray West is the second project in Ocean Winds' portfolio, following on from the operational 950MW Moray East wind farm, and can provide enough green energy to power around 727,000 homes, equivalent to over a quarter of Scottish homes.

³ 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 Moray West site and Transmission Assets



- 3.3 The Project is being delivered by Moray Offshore Windfarm (West) Limited, which is owned by Moray West Holdings Limited. Moray West Holdings Limited is owned by UAB 'Ignitis Renewables' (5%), Moray Offshore Renewable Power Limited (67%) and Delphis Holdings Limited (28%).
- 3.4 In summary, the project is being developed by Moray Offshore Windfarm (West) Limited (MOWWL). MOWWL is owned by Ocean Winds (95%) and Ignitis (5%). Ocean Winds is a joint venture between EDP (50%) and Engie (50%).

Overview of cost assessment process for Moray West project

3.5 We received initial cost information from the Developer in December 2022. 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. We set out below an outline of the steps taken, and to be taken, in the cost assessment process for the Project.

- a) **January 2023:** InTV (£592.8m) published.
- b) **September 2023:** Developer submitted the ITV CAT
- c) **September 2023 to May 2024:** forensic accounting and ITV investigation undertaken.
- d) **May 2024:** ITV figure (£582.3m) determined and communicated to Developer.
- e) **June 2024:** Developer submits comments on ITV letter, formal ITV letter issued.
- f) **December 2024:** final cost reporting updates and supporting information received for the FTV from the Developer.
- g) **October 2024:** ITT stage commenced (bidding and evaluation).
- h) **February 2025:** ITT bid submission.
- i) **April 2025:** ITT stage ended; preferred bidder announced.
- j) **September 2026:** this draft cost assessment report released to the Developer for comment and the Preferred Bidder for information.
- k) **October 2026:** draft cost assessment report published alongside the Section 8A Consultation.
- l) **December 2026:** 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

- 3.6 The InTV of £592.8m was published in January 2023. 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 information memorandum shared with bidders at the commencement of the EPQ stage of the Project.
- 3.7 The ITV of £582.3m was established in May 2024, with the formal ITV letter issued to the Developer in June 2024. Our estimate was supported by our forensic accounting advisors, Grant Thornton (**GT**), our internal analysis, and the supporting information provided by the Developer.

3.8 We conducted an in-depth cost analysis at ITV; however, some costs could not be fully investigated and were highlighted as needing further attention at the FTV stage. This included, but was not limited to:

- Offshore substation generator weight contribution;
- Onshore substation, including land costs, and space retained for generator use;
- Onshore and Offshore cable fibre cost allocations;
- Onshore ground conditions;
- Offshore burial conditions;
- CR8 – ‘other’ costs, including consenting;
- Any additional variations and settlement claims submitted post ITV stage;
- Project management costs;
- Spares; and
- IDC – first power date(s), pre-financial investment decision duration.

3.9 Please refer to Appendix 2 for the main points arising from our ITV review, the forensic review, and a description of the adjustments made at ITV. Full details are also set out in the ITV letter issued by Ofgem on 25 June 2024 (published separately).

Process for determining the Assessed Costs (FTV)

Accuracy and Allocation

3.10 The Project was constructed using a multi-contract strategy. 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.

3.11 This investigation considered the following two main contracts in respect of the Transmission Assets:

- onshore and offshore substation
- onshore and offshore cable contract

Efficiency

- 3.12 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

- 3.13 Following completion of the development and construction of the Transmission Assets, the Developer submitted costs in the December 2024 FTV CAT amounting to a value of £599.0m. 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 an Assessed Costs value of £591.3m. 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 3.14 to 3.94 set out the issues considered as part of the FTV stage.

Table 2: Summary of cost categories*

Category	InTV Dec 21 (£m)	ITV Dec 22 (£m)	FTV Mar 26 (£m)	FTV to ITV Mar 26 (£m)	Change between ITV and FTV (£m)
Capex	429.5	483.2	511.1	27.9	Increase of: £14.4 for OSP Foundations cost movements £2.4 for OSP Topside variations £7.6 for Offshore cable delays £4.8 for Offshore cable trenching £1.1 for Offshore cable UXO £2.7 for Onshore cable delays £0.3 for Onshore cable land agreements £1.7 for Onshore substation contract adjustment £0.6 for Reactive/harmonics allocated items Decrease of: £0.3 for Generator weight reduction £0.2 for OSP allocated items £2.7 for Offshore cable cost movements £0.8 for Offshore cable allocated items £1.6 for Onshore cable cost movements £0.3 for Onshore cable allocated items £0.8 for Onshore substation construction £0.1 for Onshore substation allocated items £1.0 for Reactive/harmonics supply and install
Other	25.6	28.2	29.4	1.2	Increase of: £1.3 for Insurance £0.8 for Project management Decrease of: £0.8 for Asset handover readiness
Contingency	77.9	27.3	0	-27.3	Decrease of: £27.3 for Contingency used or not realised and released.
IDC	56.7	40.7	47.8	7.1	Increase of: £8.6 for extended project duration Decrease of: £1.0 for asset availability adjustment £0.5 for cable wet storage and topside inactivity
Transaction	3.0	2.8	3.0	0.2	Increase of £0.2 for project management and legal
Total	592.8	582.3	591.3	9.0	

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

Capital Expenditure

3.14 The Capex element of the Assessed Costs is £511.1m. Overall, the Capex has increased by £27.9m from the ITV to the FTV stage as set out in more detail in Table 2 above.

Accuracy and Allocation of CAPEX costs

3.15 For the majority of Capex costs incurred on the Project, it was clear whether those costs should be allocated to the Transmission Assets or the Generation Assets in their entirety. For costs shared between Generation Assets and Transmission Assets, the Developer allocated a proportion of costs to the Transmission Assets using the Capex ratio between Generation and Transmission Assets.

Efficiency of CAPEX costs

3.16 Most cost categories had an increase in costs. This overall increase is the result of cost updates from the Developer and adjustments applied following our cost review, which are detailed below.

Offshore Substation Platforms (OSP)

OSP Foundations cost movements

3.17 The heavy lift vessel contract with Boskalis was set at [REDACTED] at ITV. In the FTV submission, this value had increased [REDACTED]. The Developer stated that this was because at ITV the associated costs were split between the OFTO and the wind farm using the Capex ratio (37% OFTO). At FTV, a more bespoke method was used in which each vessels' costs were allocated based on the actual scope of work.

3.18 The contract for the Harlyn barge was set at [REDACTED] at ITV. There was an increase of [REDACTED] in the FTV submission. The contract was still being negotiated as of the ITV review. The increase reflects additional works associated with the aforementioned Boskalis re-allocation, as well as higher-than-anticipated port fees because fouling from marine growth meant a second trip to OSP2 was required.

3.19 Additional port costs and discrepancies between forecasted and actual costs incurred a further [REDACTED].

Ofgem's view

- 3.20 We verified that the methodology used to reallocate the Boskalis contract was more reflective of the actual division of work than the percentage presented at ITV. The Developer evidenced this allocation as being built from first principles, with costs allocated according to the actual scope of work carried out.
- 3.21 Additional port costs were incurred as a result of mitigating factors outside of the Developer's control, including marine fouling and emerging logistical considerations. We therefore deemed the additional costs submitted by the Developer to be justifiably economic and efficient.
- 3.22 Any discrepancies between forecasts and the finalised amount were reconciled as true-ups by our forensic accountants.
- 3.23 We therefore accepted the total increase associated with the OSP foundations cost movements to be £14.4m.

Offshore Topside variations

- 3.24 Since ITV, the Developer has submitted £2.4m of additional cost related to topside equipment. The majority of this is attributable to a contract adjustment agreement related to mitigating the effects of grid delays. Issues under SSEN's control meant that permission could not be granted for the cable contractor Nexans to access the Blackhillock substation when it was required under the contract. This disrupted Employer Key Dates and required works to be re-sequenced, particularly the commissioning switching programme for the offshore assets.
- 3.25 The remaining costs consist of various low-value variation orders including remedial works, commissioning and pieces of required equipment that were not covered in the base contract.

Ofgem's view

- 3.26 The contract adjustment was incurred as a consequence of grid delays outside of the control of the Developer, and reasonable mitigating actions were taken to minimise additional costs. Hence we assessed that the related costs were economic and efficient.
- 3.27 We also deemed the of assorted costs to be necessary works that were not otherwise covered by contractual arrangements. These costs were therefore judged as economic and efficient.
- 3.28 In total, we accepted a £2.4m increase for the offshore topside variations.

OSP Weight Generator Allocations

- 3.29 The Developer provided generator allocations for the OSP at ITV. We reviewed these allocations and accepted them to be accurate at the time based on the evidence provided.
- 3.30 As the generator weight increased between ITV and FTV, the Developer finalised the OSP weight calculations and applied a further reduction of £0.3m.

Ofgem's view

- 3.31 We assessed the methodologies provided and deemed the final applied deduction to be correct. This meant that there was a net decrease of £0.3m in the Assessed Costs.

Offshore allocated items

- 3.32 There was a £0.2m decrease in shared items allocated to the offshore platforms. This was due to the consenting, legal and asset handover readiness costs in the category being lower than forecasted at ITV.

Ofgem's view

- 3.33 We confirmed this reduction with our forensic accountants and deemed it to be acceptable.

Submarine Cable

Offshore cable delays

- 3.34 The Developer submitted several additional costs related to offshore cable delays. The largest of these amounted to [REDACTED] for the extended charter of the Aurora cable laying vessel as a consequence of a red weather warning storm delaying work beyond the vessel's original availability.
- 3.35 A further [REDACTED] was incurred to assign the vessel Aurora alternative tasks during the initial charter period as a means to avoid unnecessary standby time of the vessel because of the weather delays.
- 3.36 [REDACTED] was wet storage of the subsea cable because it was installed before the OSP topsides as a means to mitigate procurement risk in the busy market for cable laying vessels.
- 3.37 The remaining [REDACTED] was composed of a contract adjustment and various claims attributable to mitigation and compensation measures for the red weather event and associated delays.

Ofgem's view

- 3.38 The Developer claimed that Storm Babet exceeded the limiting conditions of the contract. We accepted this to be true, however we questioned the decision to schedule the works in late October 2023 in the first place, as harsh weather is expected at this time of year.
- 3.39 The Developer evidenced that weather modelling tools were used to identify this period as acceptable, and demonstrated that limited vessel availability meant that this window would be optimal for the earliest possible installation of the export cables.
- 3.40 We agreed that this weather event could therefore be seen as unseasonable, and that the Developer had taken appropriate measures to manage risk in relation to expected weather events. As they scheduled their works to avoid the worst periods of weather, from late December 2023 to February 2024, we considered the impacts of these weather events as being an unfortunate circumstance that emerged. This was despite the Developer managing weather risks economically and efficiently. Ultimately, we accepted £7.6m of costs related to these offshore cable delays.

Offshore cable cost movements

- 3.41 The final submitted cost for the offshore cable package was £2.7m lower than included at ITV. This reduction reflects the removal of several forecasted costs related to contract options that were not exercised during project delivery.
- 3.42 Additionally, several variation orders were included in the ITV submission that were ultimately rejected or wrapped up into the offshore cable contract adjustment agreement. The Developer removed the original costs from their submission.

Ofgem's view

- 3.43 We confirmed this reduction with our forensic accountants and deemed it to be acceptable.

Cable trenching

- 3.44 The Developer incurred additional costs of £2.0m for cable trenching through their reasonable endeavours approach, which was outlined in the project's technical specifications. There were procedures in place that meant that if the trenching works were progressing too slowly due to unexpected obstacles or ground conditions, the contractor should alter their approach to ensure continuity of the operations. Any additional works were done at the rates outlined in the pricing schedule.

3.45 Ground conditions meant that under this approach, trenching works moved outside of specification and had to be mitigated with cable burial risk assessments and additional rock placement where the burial depth was too shallow. Alongside any associated remedial works, rock placement incurred an additional £2.8m of costs.

Ofgem's view

3.46 The Developer justified that, given the variety of ground conditions present, their chosen approach to trenching was appropriate for the project. While additional costs were incurred relating to mitigating sections of shallow burial depth, this represented savings elsewhere by mitigating delays in the works and avoiding the use of several different trenching techniques.

3.47 We therefore determined the procedures to be economic and efficient, and accepted the £4.8m of costs related to cable trenching, cable burial risk assessments, and rock placement

Unexploded ordnance (UXO)

3.48 The Developer incurred an additional £1.1m related to UXO and related site investigations. This was a known risk therefore the costs were foreseen but the exact value was not predictable.

Ofgem's view

3.49 While the risk was identified, ultimately it was unmitigable and outside of the Developer's control. The costs were incurred as necessary in line with established work orders and pricing schedules.

3.50 We therefore determined the £1.1m of UXO costs to be economic and efficient.

Offshore cable allocated items

3.51 There was a decrease of £0.8m for shared items allocated to the offshore cable. This is due to legal, project management and readiness for asset handover costs related to the category being lowered than forecasted at ITV.

Ofgem's view

3.52 We confirmed this reduction with our forensic accountants and deemed it to be acceptable.

Onshore Cables

Onshore cable delays

- 3.53 The Developer submitted costs of £1.1m for a contract adjustment with the contractor Nexans relating to delayed access to the Blackhillock substation. This delay occurred because issues under SSEN's control meant that permission could not be granted for Nexans to access the site when it was required under the contract, and therefore the contractual key dates were impacted.
- 3.54 This delayed access also meant that the Developer incurred additional premium costs of £1.6m to retain a trailer necessary for high voltage testing as the original charter dates did not cover the revised timeline.

Ofgem's view

- 3.55 We accepted a total of £2.7m of additional costs as economic and efficient because the circumstances were ultimately outside of the Developer's control and all reasonable mitigating actions were taken to minimise additional costs.

Land Agreements

- 3.56 In the Onshore Cable and ONSS cost categories, the Developer has included [REDACTED] and [REDACTED] respectively for land agreements in the CAT. Of these, only the onshore cable land costs increased from the ITV, by £0.4m. These land agreements were made to allow the construction of the ONSS and allow for the cable to be installed onshore.

Ofgem's view

- 3.57 We reviewed the land agreement costs at ITV and sufficient evidence was provided to substantiate the costs at that stage. Some elements of the land agreements were forecasted at ITV, for example, legal costs and agricultural compensation. Due to complex negotiations with landowners and delayed reinstatement of the onshore cable, there were increases in legal fees and agricultural compensation payments to cover the extended duration of finalising land agreements. The Developer managed to justify these costs as economic and efficient, and our forensic accountants were able to confirm the accuracy of these payments.
- 3.58 The Developer sold any unused land purchased for the onshore cable, and therefore £0.1m was removed from their land costs to reflect this. We accepted that this cost was dealt with in an economic and efficient manner.
- 3.59 As a result, the net increase of the land costs associated with the onshore cable category was £0.3m from the values set at ITV.

Onshore cable cost movements

- 3.60 The Developer indicated that several contracted costs had changed between ITV and FTV due to differences between forecasts and actuals, changes in the scope of work, and being missed from the ITV submissions. This consisted of several smaller cost items that altogether amounted to a reduction of £0.8m in the onshore cable costs.
- 3.61 There was a contract adjustment with Nexans included in the ITV submission that had reduced in value by £0.8m by the time of the FTV submission.

Ofgem's view

- 3.62 We reviewed the associated documentation for these cost movements and were satisfied with their basis. We confirmed this reduction with our forensic accountants and deemed it to be acceptable. This amounted to a total decrease of £1.6m from the agreed ITV.

Onshore cable allocated items

- 3.63 There was a £0.1m decrease in shared items allocated to the onshore substation. This was due to the site investigations, legal and stakeholder costs in the category being lower than forecasted at ITV.

Ofgem's view

- 3.64 We confirmed this reduction with our forensic accountants and deemed it to be acceptable.

Onshore Substation (ONSS)**Onshore substation contract adjustment**

- 3.65 An additional £1.7m was submitted at FTV for an onshore substation contract adjustment with Siemens. The majority of this relates to resequenced works resulting from delayed access to the Blackhillock substation, as mentioned in paragraph 3.53.

Ofgem's view

- 3.66 We accepted the £1.7m contract adjustment as economic and efficient because it was incurred as a consequence of grid delays outside of the control of the Developer, and all reasonable mitigating actions were taken to minimise additional costs.

Onshore substation construction

- 3.67 Several items, with a total contract value of £0.8m, were included in the scope of the onshore substation's construction at ITV. These were no longer included in the Developer's FTV submission, meaning the cost of ONSS construction decreased in line with this.

Ofgem's view

- 3.68 We confirmed this reduction with our forensic accountants and deemed it to be acceptable. As a result, the ONSS construction costs decreased by £0.8m.

Onshore substation allocated items

- 3.69 There was a £0.1m decrease in shared items allocated to the onshore substation. This was due to the consenting, legal and stakeholder costs in the category being lower than forecasted at ITV.

Ofgem's view

- 3.70 We confirmed this reduction with our forensic accountants and deemed it to be acceptable.

Reactive**Reactive/harmonics supply and install**

- 3.71 The reactive and harmonic costs ended up being £1.0m less than forecasted at ITV.

Ofgem's view

- 3.72 We confirmed this reduction with our forensic accountants and deemed it to be acceptable.

Reactive/harmonics allocated items

3.73 There was a £0.6m increase in project management costs for the reactive and harmonics. This is due to the extended project duration, where the aforementioned weather events (paragraphs 3.34 to 3.40) and grid delays (paragraph 3.53) required continued staffing and management until the substations could be energised.

Ofgem's view

3.74 We determined that these costs were unavoidable as they were incurred as a consequence of grid delays outside of the control of the Developer, and all reasonable mitigating actions were taken to minimise additional costs. Hence we assessed that the related costs were economic and efficient.

Other Costs

Insurance

3.75 Due to the grid delays preventing the energisation of the Transmission Assets, project insurance had to be extended into 2025 to cover this additional period. This led to a £1.3m increase in insurance costs.

Ofgem's view

3.76 We determined that these costs were unavoidable as these delays were outside of the Developer's control. Therefore, we accepted the increase of £1.3m as economic and efficient.

Project management costs

3.77 The costs for project management increased by £0.8m as a result of extending the project. The aforementioned weather events (paragraphs 3.34 to 3.40) and grid delays (paragraph 3.53) required continued staffing and management until the Transmission Assets could be energised.

Ofgem's view

3.78 We determined that these costs were unavoidable as they were incurred as a consequence of grid delays outside of the control of the Developer, and all reasonable mitigating actions were taken to minimise additional costs. Therefore, we accepted them as economic and efficient.

Asset handover readiness

- 3.79 The costs associated with preparing the assets for OFTO handover decreased by £0.8m between ITV and FTV. Several elements of the associated contracts were completed for less than the forecasted price.

Ofgem's view

- 3.80 We confirmed this reduction with our forensic accountants and deemed it to be acceptable.

Contingency

- 3.81 The FTV does not contain any contingency value. The £27.3m contingency that was submitted in the CAPEX category at the ITV stage was either used or not realised and released and therefore no value was included by the Developer in the Dec 2024 FTV CAT.

Interest During Construction (IDC)

- 3.82 Since the ITV assessment, the Project had been progressing and incurring additional costs. Particularly, the period of IDC accrual was extended by 5 months to cover the prolonged project duration associated with the aforementioned weather events (paragraphs 3.34 to 3.40) and grid delays (paragraph 3.53). This has resulted in an increase of £8.6m in IDC based on the Developer's updated cost submission in December 2024.
- 3.83 The Project was divided into 2 areas for the purposes of energisation: Circuit 1 and Circuit 2. In the Cost Assessment Guidance (Paragraph 3.101), we state that "we will consider the length of time over which IDC is applicable, and if we consider there is evidence of inefficient and uneconomic time periods during the pre-construction, construction or commissioning programme for the Transmission Assets, the period of IDC applicability may be adjusted to reflect this".

Ofgem's view

- 3.84 At the FTV we have not included £1.5m of the IDC submitted. The adjustments that make up this value are detailed in the paragraphs below.
- 3.85 During the course of construction, the Developer took the decision to place the export cables into wet storage while other delayed work was being completed.

Wet storage is the laying of the export cables on the seabed until the construction can be completed.

- 3.86 In line with the Cost Assessment Guidance, we identified the assets concerned and the duration that they were wet stored and adjusted the IDC on these to reflect that no work was being carried out on them.
- 3.87 In addition to the periods of wet storage for the export cables, the topside was not worked on for a period of one month. For both the topside inactivity and wet storage periods, we suspended the IDC on the appropriate assets, which resulted in an overall reduction of £0.5m .
- 3.88 Further, a reduction was made of £1.0m relating to our adjustment of the timing of the cessation of IDC. The Developer submitted the final IDC amount for August 2024, the month in which it considered the Transmission Assets became available for transmission. This is based on the Developer's position that the Transmission Assets are available for use when they have completed their stage 2 commissioning process. We consider, as stated in the Cost Assessment Guidance, that IDC will cease:
- “...as soon as Transmission Assets are available for use for the transmission of electricity to the onshore network”.
- 3.89 The Developer had already included an adjustment to their IDC accrual in their CAT submission to reflect completion of the assets. Circuit 1 energised in June 2024, 2 months before the entirety of the Transmission Assets reached the ION-B in August 2024. Therefore, the Developer applied a 50% adjustment to their IDC in July and August 2024 to account for the half of the transmission assets being energised.
- 3.90 We reviewed the Developer's methodology and deemed that it was not consistent with our approach on previous projects. Hence, we removed the Developer's adjustment and applied a more granular methodology based on when the assets could be safely energised and commissioned at ION-B and calculated the interest accrual accordingly, ceasing IDC in June 2024 for Circuit 1 and August 2024 for Circuit 2. This resulted in a £1.0m reduction to the Developer's calculation.
- 3.91 The deductions we made were offset by the increased IDC submitted by the Developer. Overall, the IDC increased £7.1m from the agreed ITV, mostly driven by the longer-than-anticipated project duration due to the SSEN delays, and a general increase in the amount of capex which would attract IDC. The total allowed IDC for the Transmission Assets at FTV is £47.8m.

Transaction Costs

3.92 Since the ITV, the Project had been progressing with additional project management and legal costs being incurred, and any estimated costs are now firmer. The submitted transaction costs increased by £0.2m between ITV and the FTV submission.

Ofgem's view

3.93 We reviewed the level of costs submitted and concluded that they are in line with expectations and allocated appropriately, and can be considered economic and efficient. Therefore, we have accepted the submitted cost of £3.0 for transaction costs at FTV.

Confirmation in relation to tax benefits

3.94 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 Assessed Costs, we would reduce the assessment of costs for an amount that reflects the value of the tax benefit retained by the Developer. It is intended that the OFTO will be able to obtain the full benefit of all available capital allowances. At the time of licence grant, when the FTV will be defined, this will be translated into the FTV coinciding with the Assessed Costs, should no other conditions change.

4. Conclusion

In conclusion, in accordance with Regulation 4 of the Tender Regulations, the Authority has assessed the economic and efficient costs which ought to have been incurred in connection with developing and constructing the Transmission Assets as £591,334,951.

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Appendices

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Appendix 1. List of OFTO assets

Offshore Substation Platform (OSP)

The Transmission Assets connect to the Moray West Offshore Wind Farm at the OSPs. Each of the two Moray West OSPs consists of:

- 1 440 MVA 2 winding 66 kV / 220 kV super-grid transformers
- 1 60 MVar 220kV shunt reactor
- 3 bays of 220 kV GIS switchgear
- 1 175kVA 66/0.4kV Earthing Transformer
- SCADA, protection and communication equipment

Subsea Transmission Cable

Moray West consists of 2 subsea alternating current (**AC**) cables, connecting the OSP to the shore where they are joined to the onshore cable systems in separate transition joint bays. The specifications for the cables are.

- OEC1 0.5km of 1600 mm² copper landfall-cable and 49.5km 2000 mm² aluminium subsea-cable.
- OEC2 0.5km of 1600 mm² copper landfall cable and 51.5km 2000 mm² aluminium subsea cable.

Onshore Transmission Cable

The onshore transmission cable consists of 2 circuits connected to the subsea cables, via the transition joint bay. The onshore export cable circuits consist of two parallel 28km long routes.

- Export Cable circuit 1 – 28km of 220kV cable, 2500mm² CSA.
- Export Cable circuit 2 – 28km of 220kV cable, 2500mm² CSA.

Onshore Substation (ONSS)

The onshore 400/220/33 kV substation is located at Whitehillock and includes two identical circuits. Each circuit includes:

- One 400/220/33/9.9 kV 470 MVA transformer with 9.9/0.4 kV 800 kVA auxiliary transformer
- Three 400 kV AIS bays
- One 400 kV 30 MVar filter
- Three 220 kV AIS bays
- One 220kV 148±12 MVar air-core shunt reactor
- Three 33 kV AIS bays.
- One 33 kV ±143 MVar STATCOM
- One 33 kV 228 MVar switched reactor (controlled by STATCOM)
- Auxiliary low voltage AC & DC supplies
- Protection and control Panels
- Communication Panels

In addition, the cables that are connected between the ONSS and the Transmission Interface Point (TIP) at SSEN Transmission Blackhillock Substation consist of 400kV single core aluminium parallel cable circuits at 800mm² CSA with a length of 4.1km each.

Appendix 2. Ofgem ITV review: Individual cost categories

We undertook a detailed review of each cost category. Below we summarise the adjustments made to each category (Note: figures may not add to totals due to rounding).

Offshore Substation Platform (OSP)

At ITV we reviewed the costs for the design, supply, installation, commissioning and project management of the OSP and decreased the costs submitted in this category by £2.5m overall. As a result, we have estimated the value of [REDACTED] to reflect the cost of the OSP for the ITV.

Submarine cable supply and installation

We adjusted the costs submitted for the design, fabrication, installation and project management of the submarine cables which resulted in an overall increase of £0.1m to the submitted costs. As a result, we have estimated the value of [REDACTED] to reflect the cost of the submarine cable at ITV.

Onshore Cables

We adjusted the costs submitted for the design, fabrication, installation and project management of the onshore cables which resulted in an overall increase of £17k. As a result, we estimated the value of [REDACTED] to reflect the cost of the onshore cables for the ITV.

Onshore Substation (ONSS)

We reduced the costs submitted for the design, fabrication, installation and project management of the onshore cables by £4.5m. As a result, we have estimated the value of the ONSS for the ITV at [REDACTED].

Reactive and harmonic equipment

The Developer submitted costs in the CAT for the design, supply, installation, commissioning, and project management of the Reactive Compensation Equipment (RCE). We did not apply an adjustment to this category and consequently, we have estimated the cost in the RCE category to be [REDACTED].

Connection Works

We reduced the costs submitted for the connection works undertaken to connect to the 400kV transmission system by £3.0m. As a result, we have estimated the value of the connection works for the ITV at [REDACTED].

Other Costs

We did not apply an adjustment to this category and consequently, we have estimated the cost in the Other category for the ITV to be £29.5m.

Transaction Costs

At ITV stage these costs were not fully defined. These are, in the main, an estimate of costs. We removed the submitted contingency costs during the ITV process. We included £2.8m in transaction costs in the ITV.

Interest During Construction (IDC)

We reduced the costs submitted for the project's IDC by £7.2m. As a result, we estimated the value of this category for the ITV to be £40.7m.

Appendix 3. Glossary

A

Assessed Costs

The final assessment of costs determined by Ofgem through the cost assessment process for the Transmission Assets.

C

Capex

Capital Expenditure

CAT

Cost Assessment Template

Cost Assessment Guidance

Can be found here [Offshore Transmission: Guidance for Cost Assessment \(2022\) | Ofgem](#)

D

Developer

Moray Offshore Wind Farm (West) Limited

E

EPQ

Enhanced Pre-Qualification

F

FTV

Final Transfer Value

FTV CAT

The Developer cost assessment template submitted in December 2024

G

GEMA

The Gas and Electricity Markets Authority

Generation Assets

Moray Offshore Wind Farm (West) Limited generation assets

GT

Grant Thornton

I

IDC

Interest During Construction

InTV

Initial Transfer Value

ITT

Invitation to Tender

ITV

Indicative Transfer Value

ITV CAT

The Developer cost assessment template submitted in September 2023

ITV letter

The formal ITV letter issued to the Developer in June 2024

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

P**Project**

The development and construction of the Transmission Assets

R**RCE**

Reactive Compensation Equipment

S**Section 8A Consultation**

See definition in Section 2.13 of this report

T

Tender Process

The competitive tender process run in accordance with the Tender Regulations through which OFTOs are granted offshore electricity transmission licences

Tender Regulations

The Electricity (Competitive Tenders for Offshore Transmission Licences) Regulations 2015

Transmission Assets

Moray Offshore Wind Farm (West) Limited transmission assets

TRS

Tender Revenue Stream

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- Do you have any comments about its tone and content?
- Was it easy to read and understand? Or could it have been better written?
- Are its conclusions balanced?
- Did it make reasoned recommendations?
- Do you have any further comments?

Please send your feedback to stakeholders@ofgem.gov.uk.