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Offshore Transmission: Draft Cost Assessment for the Rampion Transmission Assets

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This document sets out the cost assessment for the Rampion Offshore Wind Limited (**ROW**) offshore transmission assets. This assessment of costs will be used by the Gas and Electricity Markets Authority (the **Authority**) to determine the value of the ROW offshore transmission assets to be transferred to the successful bidder following a competitive process (the **Tender Process**).

The Final Transfer Value (**FTV**) of the ROW offshore transmission assets is established as £279.5m. This value is 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 work that Ofgem has undertaken from the Invitation to Tender (**ITT**) stage of the Tender Process in relation to the ROW offshore transmission assets (the **Transmission Assets**). This work has been used by the Authority[1] to derive the Assessed Costs and will be used to set the FTV for the assets. Unless otherwise stated or defined in-text, capitalised terms in this report are defined in the Glossary at Appendix 1.

The cost assessment process involves the below three key stages:

- The Initial Transfer Value (**InTV**) for the Transmission Assets was published in the preliminary information memorandum in September 2016[2] and was set at £313.1m based on information provided to Ofgem by the developer, ROW (the **Developer**);

- The Developer submitted a revised cost assessment template (**CAT**) in April 2018. Ofgem reviewed and analysed the cost information and calculated the Indicative Transfer Value (**ITV**) as £302.9m. This updated calculation was communicated to the Developer in February 2019 and the formal ITV letter issued the same month; and

- The Developer submitted a further CAT dated July 2019 with a value of £326.1m (the **FTV CAT**). Ofgem reviewed this further cost information to calculate the final assessment of costs as £279.5m (the **Assessed Costs**). This is a reduction of £46.6m from the submitted FTV CAT. The Developer has confirmed that the incoming Offshore Transmission Owner (**OFTO**) will be able to obtain the full benefit of all available capital allowances. Therefore, the final Assessed Costs of £279.5m is the amount that will be used to set the Final Transfer Value (**FTV**) at licence grant.

The key components of the InTV, the ITV and the FTV, together with the Developer's submission (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.
[2] Microsoft Word - RAM-ERA-OFT-PAP-0002_04--Rampion OFTO Preliminary Information Memorandum.docx (ofgem.gov.uk)

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Table 1: Summary of costs components*

Category	InTV	ITV	Developer submitted cost for FTV review July CAT)	FTV
	Sep16 (£m)	Feb19 (£m)	Jul19 (£m)	Feb21 (£m)
Capex	187.0	238.7	252.2	208.1
Development**	24.1	39.6	53.5	52.2
Contingency	46.7	5.0	0.0	0.0
IDC	55.3	18.2	19.1	17.8
Transaction	0.0	1.5	1.4	1.4
Total	313.1	302.9	326.1	279.5

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

***Development represents all costs within the cost category 'Other' (CR8) in the Cost Assessment Template. This includes development costs, as well as other common cost (excludes Contingency).*

Sections 3.31– 3.83 of this report set out details of the Assessed Costs and any reductions made to the values submitted in the July CAT and against the ITV. The main increases/decreases in the Assessed Costs, against the ITV figures, are as follows:

a) the capital expenditure (**Capex**) component of the FTV has decreased by £30.5m;
b) the development costs have increased by £12.6m;
c) the ITV contingency amount of £5m was removed in its entirety;
d) the Interest During Construction (**IDC**) amount decreased by £0.4m; and
e) the transaction costs have decreased by £0.1m.

Below we summarise the main increases and decreases to each cost category as shown in Table 1 and detailed in sections 3.31– 3.83. Please note that the figures set out in this section have been rounded.

Capital expenditure (Capex)

The Capex of the FTV has decreased by £30.5m since ITV. The main increases are for costs originally disallowed at ITV as well as additional staff and land costs. The decreases were in relation to:

a) costs over and above our expected values for subsea cable supply and installation;

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b) costs over and above our expected values for onshore cable supply and installation;
c) generation assets weight contribution;
d) a premium for completing the offshore platform (**OSP**) offshore;
e) fibre optic cables for generation use;
f) costs removed by the Developer; and
g) other minor adjustments.

Development costs

The development costs at FTV have decreased by £12.6m since ITV, this was due to general cost updates.

Contingency

We allowed £5m of contingency in the ITV. This was reduced to £3m and included by the Developer in the FTV CAT submission. Following our assessment we removed it in its entirety, as it has not been realised, and hence no contingency has been included in the FTV.

Interest During Construction (IDC)

The IDC amount has decreased by £0.4m since the ITV. This overall decrease in IDC is the result of a positive adjustment (for a longer time allowed for the development phase in line with other projects), and a negative adjustment for disallowed costs.

Transaction costs

The transaction costs are composed of both internal and external resource costs arising from the Developer's participation in the Tender Process. There has been no change since the ITV assessment.

Assessed Costs and FTV for the Transmission Assets

In accordance with Regulation 4(2)(b) of the Tender Regulations, the Assessed Costs of the Transmission Assets are £279,498,584. The Assessed Costs will be used as the FTV in accordance with Regulation 4(8) of the Tender Regulations.

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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 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**)[3].

[3] Offshore Transmission: Guidance for Cost Assessment

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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

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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 Rampion 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.

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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:

c) capital expenditures;
d) development costs;
e) contingency provisions;
f) interest during construction; and
g) transaction costs.

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Process stages for cost assessment

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

Initial Transfer Value

2.9. The InTV value is based on cost submissions by the developer for the relevant project. This value is made available to bidders at the 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

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**).

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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.

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.

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

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

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

Test 2 - Assessing if a developer's cost are economic and efficient

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

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

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

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

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3. Rampion Offshore Wind Farm cost assessment

Section summary

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

Transmission Assets[4]

3.1. The Rampion Offshore Wind Farm is located 13km from the West Sussex coastline in Southern English territorial waters.

3.2. The wind farm has a 400MW capacity, comprising 116 MHI Vestas turbines on pre-piled jacket substructures. The power is collected via one offshore substation platform, via 33kV array cables and associated equipment. Power is stepped up to 150kV on the offshore platform and is exported to the onshore substation at Bolney, close to Twineham, via circa 44km of offshore and onshore export cables using two circuits. At the onshore substation, the power is stepped up again to 400kV and connected to the adjacent National Grid substation where it joins the National Electricity Transmission System (**NETS**).

[4] 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.

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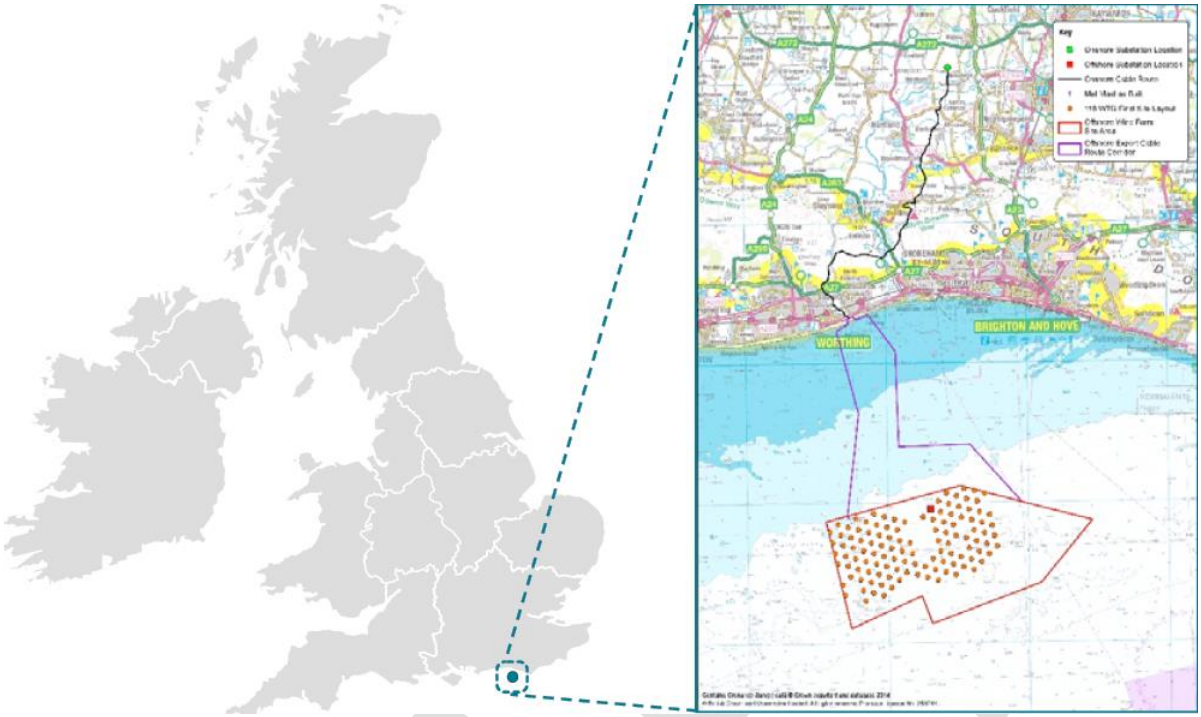
Figure 1: Location of the Rampion Offshore Windfarm and Transmission Assets



3.3. ROW is owned by RWE Renewables (50.1%), a consortium led by Macquarie (25%) and Enbridge (24.9%). These entities each own their respective shareholdings in the Project via a 'HoldCo' which is the 100% shareholder.

3.4. The Transmission Assets connect to the Rampion Offshore Wind Farm at the offshore platform. The Transmission Assets that are transferring to the OFTO comprise:

a) an offshore substation platform (**OSP**) mounted on a jacket foundation;
b) two c. 17km 150kV 3 core undersea offshore export cables;
c) two sets of c. 27km long 150kV onshore, underground cables;
d) a new onshore substation at Twineham; and
e) two 400kV cables connecting the new Twineham substation to the existing 400kV National Grid Electricity Transmission (**NGET**) substation at Bolney.

3.5. The onshore and offshore boundary points proposed by the Developer are as follows:

a) Offshore (Grid Entry Point) at the 33kV switchgear cable "tails" on each switchboard incomer; and

b) Onshore (Transmission Interface Point) - the 400kV busbar within the NGET Bolney Substation.

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

a) 2.3km of 1200mm^2 subsea cable for cable 3 and 0.9km of 1200mm^2 for cable 4 (note: cable 3 and 4 spare lengths are not interchangeable);
b) various lengths of 400kv and 150kv onshore cable;
c) various joints (transition and cable repair joints);
d) cable terminations; and
e) other miscellaneous spares.

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Overview of cost assessment process for Rampion project

3.7. We received the first cost information from the Developer in September 2018. 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) **September 2016**: InTV (£313.1m) published.
b) **April 2018**: Developer submitted the ITV CAT (the **ITV CAT**)
c) **February 2019**: ITV figure (£302.9m) determined and communicated to Developer.
d) **February 2019**: formal ITV letter issued.
e) **March – August 2019:** ITT process (bidding and evaluation).
f) **July 2019:** Developer submitted a revised CAT (the **FTV CAT**).
g) **August 2019 - March 2021:** forensic accounting and FTV investigation undertaken.
h) **June 2021:** this draft cost assessment report released to the Developer for comment and the Preferred Bidder for information.
i) **September 2021:** draft cost assessment report published alongside the Section 8A Consultation.
j) **TBC 2021:** 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.

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Summary of the InTV and ITV determination

3.8. The InTV of £313.1m was published 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 £302.9m was established in February 2019, with the formal ITV letter issued to the Developer in the same month. 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. We conducted an in-depth cost analysis at ITV, however both GT and Ofgem encountered difficulties in obtaining the relevant information to estimate the economic and efficient costs for the Project. The information required was in relation to estimated costs to completion and further justification for including some of the CAPEX costs. With the date of the ITT approaching, both parties agreed Ofgem would use the figures submitted in the Indicative CAT (ITV CAT) as the basis for the value in the ITT.

3.11. 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 letter issued by Ofgem on 21 February 2019 (the **ITV Letter**).

Ofgem review – Crosscutting issues

3.12. In reviewing the individual cost categories, there were some crosscutting issues, which we discuss here.

Reallocation of Elements of Common Cost

3.13. We analysed the submitted ITV CAT and noted that some costs were allocated incorrectly and therefore were moved to the appropriate cost category for consistency with other projects. This allowed us to analyse cost data across projects and carry out our benchmarking exercise.

3.14. We also observed that allocation rates between generation/transmission parts of the project were not fully justified. For the purposes of establishing the ITV, we decided to

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include the original costs submitted and committed to undertake a more detailed review of the allocation rates during the FTV process as recommended by GT in their report.

Project management (PM)

3.15. As part of the ITV we considered the overall PM costs throughout all cost categories, including direct PM and those included in development expenditure (DEVEX) and concluded to carry out a more detailed review of these costs at the FTV stage.

Ofgem review – Individual cost categories

3.16. We undertook a detailed assessment of the submitted costs on each cost category. Full details of the ITV review are set out in the ITV letter.

Offshore substation platform (OSP)

3.17. We reviewed at the ITV stage, the costs for the design, supply, installation, commissioning and project management of the OSP and reduced this category by £7.8m overall. This adjustment was made up of the following reductions for:

a) Generator-related costs (primarily costs associated with the array j-tubes and 33kV switchgear) for a total of £2.6m;
b) Costs associated with delays at the outset of the project and costs to ensure delivery of the OSP by the Renewables Obligation (RO) qualification deadline;
c) Additional payments to the OSP fabrication contractor to keep work on track with the agreed program for £4.1m;
d) Cost for duplication of work to complete the OSP which the contractor did not deliver (on request of the Developer) in addition to costs paid to sub-contractors to complete the OSP construction offshore. We allowed costs from the fabrication contractor commensurate to the amount of work completed, using the Developer's estimate and disallowed £1.1m corresponding to work done by other contractors.

3.18. The decision to take the delivery of the incomplete OSP and complete in line with the generation timescales, incurred a significant premium, which we estimated to be £34.4m and which we included into the ITV. We stated in the ITV letter that the Developer would need to justify this cost at the FTV stage, for it to be included into the FTV.

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3.19. Finally, we included at ITV the share of costs for the OSP occupied by generation assets. At the ITV stage, we did not have the information to apportion part of the OSP to the generation assets satisfactorily, which we estimated to be £6.7m. We undertook to review this amount at the FTV stage.

Submarine cable supply and installation

3.20. We reviewed at the ITV stage the costs for the design, supply, installation, commissioning and project management of the submarine cable and reduced this category by £62m overall. This adjustment was made up of the following reduction for:

a) costs duplication for the installation of two sets of cables, as the first set of cables were damaged during installation;
b) the cost for a separate fibre optic cable for communications; and
c) the Developer included in the ITV CAT the cost for a cable repair that was never completed, as the damaged cable was abandoned.

Onshore cable supply and installation

3.21. We reduced the costs submitted for the design, fabrication, installation and project management of the onshore cables by £7.2m. This adjustment included reductions for:

a) Costs related to a microwave link which the Developer agreed to be a generator cost; and
b) Costs related to the completion of the works outlined in the original contract as the contractor which installed the land cable went into liquidation. To reflect this, the Developer updated the ITV CAT and reduced the original contract value by £6.5m for work not completed. The works left were completed by the original subcontractors and these costs are included in the CAT.

Onshore substation

3.22. The Developer updated the contract costs originally reported in the ITV CAT for the design, fabrication, installation and project management of the onshore substation by £2.3m and we incorporated this adjustment in the ITV.

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Connection costs

3.23. The Developer updated the connection costs after the ITV CAT was submitted and the total value of the connection costs was decreased by £0.1m.

Common costs (CR8)

3.24. The Developer submitted costs for contingency which we did not expect to be used as the Project had been operational for some time at the time of the ITV. The Developer also included development costs requiring further substantiation at FTV.

Transaction costs

3.25. The Developer submitted an estimate for transaction costs in line with previous projects, therefore we included them in the ITV and stated that we intended to review them at the FTV stage.

Interest During Construction (IDC)

3.26. We reduced IDC by £7.1m, based on the period of IDC accrual which terminates once the transmission assets are available for use and the length of development phase of the Project, as this was longer than expected. We undertook to keep the IDC under review for the FTV stage.

Forensic Review

3.27. When establishing the ITV, we took into account the results of the forensic investigation conducted by our independent consultant GT. They assessed the level of contingency, as a proportion of total costs, and found it reasonable once the Developer adjusted them compared to the initial submission. We stated that we would scrutinise further at the FTV stage any contingency submitted. GT found that all other costs in the ITV CAT were appropriately stated.

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Process for determining the Assessed Costs

Accuracy and Allocation

3.28. The Project was constructed using a multi contracting 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.

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

c) ABB for the Onshore Substation supply and installation of offshore HV equipment;
d) Babcock for the provision of the OSP;
e) VBMS, for the supply and installation of offshore export cable 3;
f) ASSO, for the supply and installation of offshore export cable 4;
g) Carillion for the supply and installation of onshore cables;
h) Scaldis, for the supply and installation of the onshore substation; and
i) Hellenic, for the supply of offshore export cables 3 & 4.

Efficiency

3.30. 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.

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Summary of Assessment

3.31. Following completion of the development and construction of the transmission assets, the Developer submitted costs in the FTV CAT amounting to a value of £326.1m. 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 £279.5m. 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 3.32 – 3.83 set out the issues considered as part of the FTV stage.

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Table 2: Summary of cost categories*

these figures may not add to totals due to rounding.

Category	InTV Sept 2016 (£m)	ITV Feb 2019 (£m)	FTV July 2019 (£m)	FTV-ITV	Reasons for change between ITV and FTV
Capex	187.0	238.7	208.1	-30.5	Increase of: £13.5m costs added back in from the ITV £1.3m OSP Fire wall cost allowed £1.1m ABB contract claims allowed Decrease of: £4.1m for acceleration payments £3.2m for array cable J-tubes £0.2m for generation microwave link £14.7m for cost for completion of OSP work offshore £4.2m for Generator weight contribution to OSP £6.5m for additional cable costs £5.6m cable supply and installation over benchmark values £2.5m additional boulder clearance £0.8m Southern Water outfall removal £0.3m for generator's use of fibre optics offshore £3.5m for land costs after first generation £0.5m for correction to contract value £0.2m for generator's use of fibre optics onshore £0.1m GT adjustment £0.1m for space occupied by generator in onshore substation
Development	24.1	39.6	52.2	12.6	Increase of: £13.9m for firming up of resource costs Decrease of: £0.6m for seabed leasing costs outside of licence duration £0.4m reduction in final insurance premium £0.3m for additional staff costs for OSP work
Contingency	46.7	5.0	0.0	-5.0	Decrease of: £5.0m due to contingency being released or realised
IDC	55.3	18.2	17.8	-0.4	Increase of: £0.8m for updated costs submitted £1.8m adjustment to pre-FID duration Decrease of: £3.1m for adjustments related to Capex reductions
Transaction	0.0	1.5	1.4	-0.1	Decrease of: £0.1m for cost estimates being made firm
Total	313.1	302.9	279.5	-23.5	

***Development represents all costs within the cost category 'Other' (CR8) in the Cost Assessment Template. This includes development costs, as well as other common costs.*

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Capital expenditure

3.32. The Capex element of the Assessed Costs is £208.1m. Overall, the Capex has decreased by £30.5m from the ITV to the FTV stage. This decrease is the overall result of a series of cost increases and decreases, as set out in more detail in Table 2 above.

Accuracy and allocation of Capex costs

3.33. 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 a proportion of costs to the Transmission Assets using the relevant Capex ratio between Generation and Transmission Assets which had been calculated by the Developer and agreed upon by Ofgem.

Efficiency of Capex costs

3.34. Except for development, all cost categories showed a decrease. This overall decrease is the result of cost updates from the Developer and adjustments applied following our cost review, which are detailed below.

Crosscutting Issues

Disallowed costs at ITV resubmitted at FTV

3.35. The Developer submitted a number of costs which were not included at the ITV stage. These costs related to the Babcock OSP contract, LS Cables contract and Carillion contract. These costs had previously been disallowed at the ITV stage and the rationale for this explained in the ITV letter. These costs were unchanged from their original ITV submission that was excluded and were submitted again in full for the FTV. We do not consider that these costs should be included as part of the FTV value, as we explained at the ITV stage, and our view has not changed. Costs consisting of:

a) £3.2m for J-tubes;
b) £4.1m for acceleration payments; and
c) £0.2m for the microwave link for communications

were all incurred for generation purposes rather than transmission reasons and as such are outside the scope of this assessment, and cannot be included in the FTV.

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ABB Claims Settlement

3.36. There was an ongoing settlement which was finalised at the FTV stage which covered both the onshore and offshore substation. This related to work to supply and install the substations and associated works. The total of individual claims for a settlement of this type are paid out as a lump sum, with the final individual claim values not being readily available to assess.

Ofgem's view

3.37. The Developer submitted a list of the original claims and values making up this total settlement, along with a rationale behind the claims. Ofgem reviewed these original claims and we agreed that a number of them were valid, as a number of the costs had been incurred economically and efficiently. As a result of this, an additional £0.2m was allowed for the OSP value and £1.0m was allowed for the onshore substation after reviewing the settlement.

Offshore Substation Platform (OSP)

Cost for completion of works offshore

3.38. Due to delays in the fabrication of the OSP, the Developer took the decision to take delivery, transport and install the incomplete platform offshore to finish the work on it in-situ. As a result of this, any work being carried out on the OSP was at a higher cost due to the work taking place offshore, rather than onshore before installation. This also resulted in additional costs being incurred to support this work offshore, e.g. additional jack up vessels.

Ofgem's view

3.39. We engaged with the Developer around this issue at the ITV and FTV stages. At the FTV stage, after our full assessment, we considered that the additional costs associated with the offshore completion work were inefficiently incurred. As a result, costs of £5.1m were not included in the FTV from the ABB contract and a further £9.5m not included from the Babcock OSP contract.

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Generation assets Weight Impact

3.40. The developer has generation equipment on the OSP, which increases the dimensions for the topside and, therefore, the corresponding support structure required. The additional weight of generation equipment will ultimately drive additional costs to support this equipment, such as an increase in size of jackets needed. At the ITV stage, this was discussed and we indicated that this was an area that would require a reduction in value, but the full value was included in the ITV and it was agreed to be reviewed at the FTV.

Ofgem's view

3.41. During the FTV stage we resumed discussions with the Developer regarding our position to remove generation assets incurred weight costs as well as the calculations to carry this out. As a result of this review, we have not included £4.2m for this at the FTV stage. This is our view of the costs that would be incurred for the Generation Assets being present on the OSP and their impact on the rest of the supporting structure.

Firewall for 33kV enclosure

3.42. A value of £1.2m was submitted for fire protection for the 33kV enclosure of the OSP. As this refers to an area which is used specifically for generation, the costs for this are not deemed to be transmission related and therefore not included in the FTV.

Ofgem's view

3.43. As part of the assessment, this cost was not included as part of the Babcock contract and was also subsequently disallowed as an individual line cost. Due to this, the deduction occurred twice, therefore the value of one of these instances of the cost has been re-instated into the FTV.

Submarine cable

Additional Cable Costs

3.44. After installation, cables 1 & 2 were deemed not usable as they had been damaged during the course of their installation. ROW took the decision to purchase 2 new additional cables to replace these faulty cables. In addition to the cost of the cable supply and

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installation, there were a number of associated costs that were duplicated or were not incurred during the installation of cables 1 & 2.

Ofgem's View

3.45. As the order for cables 3 and 4 was done separately, there were two instances of cable design rather than one, if both cables had been ordered at the same time then only one instance of design would have been required. There were also new storage and transportation costs, cable storage was required a there was a lag between cable purchase and installation, therefore appropriate storage facilities had to be provided and transportation had already been allowed for the original cables. As a result, these costs were deemed inefficient as they were duplicated as a result of the Developer purchasing and installing the new cables. Therefore, the costs for cable 3 consisting of:

a) £3.2m for the cable installation;
b) £1.3m for the cable delivery;
c) £1.0m for the cable storage; and
d) £0.2m for the cable design; and
e) £0.7m for other miscellaneous costs associated with this work

were not included in the FTV, as they were not economic and efficient as they were additional costs incurred in addition to the supply and install cost for the original cables.

<u>Additional costs over expected values</u>

3.46. As part of the benchmarking exercise, the submarine cable cost category was identified as being a significant outlier when compared to our expected values. The expected values are based on data from previous projects' submarine cable costs.

3.47. We made allowances for a number of project specific factors including the use of float pits for cable installation due to seabed conditions and a large amount of boulder clearance along the cable corridor. However, even after revisiting the benchmarking analysis with all the project specific allowances, there was still a significant difference in the submitted costs for this category compared to projects of a similar size and scale.

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Ofgem's view

3.48. The Developer was unable to provide any further evidence or justification to explain this difference between the submitted costs and the expected costs. In the Cost Assessment Guidance we state:

> "In the absence of appropriate evidence to justify these differences, we may use the benchmarking data to inform our view of whether or not the relevant costs can be considered economic and efficient."

3.49. As such we have used the benchmarking data and have not included £2.8m for installation costs and £2.8m for supply costs associated with this cost category, as this additional level of costs cannot be regarded as economic and efficient. Therefore, these values have not been included in the FTV.

Additional Boulder Clearance for Cable 3 & 4

3.50. Costs were submitted for additional boulder clearance to take place to allow the installation of replacement cables 3 and 4. The Developer had already undertaken boulder clearance for cables 1 & 2, but due to these cables being defective, additional boulder clearance was required to facilitate the installation of the new cables.

Ofgem's view

3.51. Ofgem recognises the requirement for this additional boulder clearance to take place. However, as there had already been boulder clearance carried out for 2 cables, it was determined that additional clearance was not economic and efficient. We consider that costs for only two instances of boulder clearance should be included in the FTV. Therefore:

a) £0.6m was excluded from the FTV for additional work in boulder clearing for cable 3;
b) £1.7m not included in the FTV for cable 4 clearance; and
c) £0.2m not included for additional surveys of the area for the boulder clearance.

3.52. The original boulder clearance costs for cables 1 and 2 were included in the FTV as the clearance work undertaken for these was for the same general area of the seabed as cables 3 & 4.

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Southern Water Outfall Removal

3.53. During the installation of cable 4, a water outfall owned by Southern Water was located on the intended route. To install the cable, this outfall had to be removed which was an activity that was not originally required as the route for cables 1 & 2 did not pass through the location of the outfall and was therefore additional work.

Ofgem's View

3.54. As the removal of the outfall was not required in the original installation works and was only being carried out due to the damage incurred on cables 1 & 2, Ofgem considered that this additional work and resulting cost could have been avoided. In addition to the physical removal of the outfall, there were small additional costs associated with it, such as obtaining a licence for its removal. A total of £0.8m was not included in the FTV for works relating to the outfall removal.

Fibre optic cables for generation related activities

3.55. Both the submarine and onshore cables installed for the Project contain fibre optic cables. These cables are to be owned by the OFTO but a number of the fibre optic cables are used for the transmission of data for the Generation Assets. No costs for this, however, were allocated to the Generation Assets.

Ofgem's view

3.56. Fibre optic cables are installed alongside or within the onshore and offshore export cables for offshore transmission projects. These fibres are used for both transmission and generation control, monitoring, and communication purposes. As projects are now being constructed on an increasingly larger scale and further offshore, cable lengths are increasing, as are the communication requirements. This means that the cost associated with the supply and installation of the fibre optic cables is a significant cost.

3.57. As the fibres used for generation purposes are not available to the OFTO and the OFTO gains no benefit from them, we requested that the Developer provide us with an evaluation of the cost of the generation portion of the Project for its use of the fibre optic cables. Following the generation allocation review, the value of £0.3m for offshore was not included in the FTV to reflect the generator's share of their fibre costs and cannot be included in the FTV.

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Onshore cables

Land Payments

3.58. As part of the onshore development, a number of farms and related premises were disrupted by the construction as a direct result, compensation for crop loss or similar loss if earnings was offered to the landowners. As well as these costs, reinstatement costs for the land to return it to its original condition pre-construction were incurred and were scheduled to be incurred after first power.

Ofgem's View

3.59. It is Ofgem's position that costs relating to ongoing compensation payments and related costs after first power are considered an operational cost and as such have been disallowed from the Assessed Costs. However, reinstatement costs would not be excluded as they are a construction cost that must occur as a result of the work and by the nature of this work, must be carried out once work has been completed.

3.60. A total of £3.5m was removed from the FTV for land payments, due to them being classed as operational costs.

Carillion Contract incorrect value

3.61. As part of the Developer's submission, a correction was made to the Carilion contract costs. This reduced the costs submitted by the Developer by £0.5m related to this contract.

Ofgem's view

3.62. We have reviewed this correction and are satisfied that this is the correct treatment of these costs.

Onshore fibre optic cables for generation related activities

3.63. As described earlier, both the submarine and onshore cables contain fibre optic cables and a number of these fibres are used for the transmission of generation data and control. No associated costs for the use of this was allocated to the Generation Assets as it had all been included as Transmission Assets.

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Ofgem's view

3.64. As the fibres used for generation purposes are not available to the OFTO and the OFTO gains no benefit from them, we requested that the Developer provide us with an evaluation of the cost that the generation portion of the Project should assume for their use of the fibre optic cables. Following the allocation review, £0.2m was not included in the Assessed Costs to reflect the Developer's share of the fibre costs.

GT Deduction

3.65. GT conducted a thorough review of the Developer's costs. GT's report was made available to both Ofgem and the Developer. GT proposed an adjustment to remove the costs listed for Brooklands Compound, which had a total of £0.1m.

Ofgem's view

3.66. We have reviewed this adjustment and agree with GT's suggested treatment and have therefore not included the £0.1m in the Assessed Costs as the variation for the Brooklands Compound was not required and no cost was therefore incurred.

Onshore substation

Generation Equipment Costs

3.67. As offshore projects are getting larger and their communication requirements increasing, we have observed that the space occupied by equipment housed within the onshore substation for generation purposes is increasing in proportion to the project size. This space is not avaible for OFTO use and has a cost associated with it.

Ofgem's view

3.68. We routinely scrutinise all costs associated with generation related equipment for new projects to ensure that the apportionment between Generation and Transmission Assets is appropriate and costs remain economic and efficient.

3.69. Therefore, we have apportioned the cost associated with housing the Generation Assets in the onshore substation and we have not included the £0.1m for the generation use of space in the onshore substation. This is because it is considered a generation cost and cannot be included in the FTV.

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Other Costs

Crown Estate Seabed Leasing

3.70. The project obtained a 50 year lease for the use of the seabed from The Crown Estate. This lease must be obtained to allow construction and operation of the project. The project is scheduled to operate for less than half of the duration of the lease and the 20-year revenue stream for the OFTO in its licence reflects this.

Ofgem's View

3.71. As the OFTO is only scheduled to operate for 20 years, Ofgem is of the view that costs associated with the additional time should be disallowed. Therefore, we made an allowance for the duration of the OFTO as well as 4 years' worth of construction and decommissioning time, giving a total of 24 years and we have excluded the remaining 26 years. This resulted in £0.6m not being included in the FTV.

AXA – CAR Insurance

3.72. During the assessment of the costs, a discrepancy in the value of the CAR insurance was highlighted and confirmed by the Developer. The Developer proposed that the value should return to the value submitted for the ITV as no change had taken place between the ITV and FTV stages.

Ofgem's view

3.73. We engaged with the Developer over this issue and were satisfied that the ITV value should be reinstated, resulting in a reduction of £0.4m from the Developer's submission.

Additional Staff Costs

3.74. As part of the FTV submission, additional staff costs were included for the painting work that had to be completed offshore on the OSP. This was an additional cost as it was not done to an acceptable standard for a 20-year life and had to be redone to a higher standard. This work was also done offshore and attracted a higher level of costs to reflect this. Additional project management costs were submitted by the Developer for this work.

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Ofgem's view

3.75. As the Developer took the decision to take the OSP from Babcock incomplete and not up to an acceptable standard, we consider this as not economic and efficient as it is duplicating the staff costs already incurred. Ofgem took the position that the additional staff costs not included in the FTV was £0.3m.

Interest during construction

3.76. At the ITV stage, a reduction of £1.8m was made in relation to an applied abatement of the first 60 months' IDC payments. This was based on our view of the efficient duration of the development phase of a project. The Developer has since provided further information during the FTV process which indicated that the duration of the development phase was as efficient as possible, and any additional duration was due to the consenting process that had to be followed. This has resulted in a positive adjustment of £1.8m being included within the FTV following a detailed review, which has cancelled out the negative adjustment made at the ITV.

3.77. Finally, a reduction of £3.1m was made reflecting all Capex adjustments made following the conclusion of the broader FTV cost assessment. The cost assessment guidance states:

> "IDC will not be applied to costs deemed to be inefficient, and will also be curtailed in line with any Capex reductions made to the project."

Ofgem's view

3.78. The increase in IDC was offset by the reduction in IDC due to the adjustments to the proportionate reduction in Capex for disallowed costs. The overall reduction to IDC is £0.8m (see Table 2) which results in an overall decrease of £0.4m since ITV. The total IDC for the Transmission Assets at FTV is £17.8m.

Transaction costs

3.79. The Developer had submitted an estimate of the transaction costs it expected to incur up to the point of asset transfer. We have reviewed this estimate and assessed transaction costs at £1.4m.

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3.80. The Developer provided a breakdown of the transaction costs submitted. It included both internal and external costs. The external costs related to professional services (e.g. legal) in respect of the tender.

3.81. Transaction costs decreased by £0.1m since the ITV due to the transaction budget being revised and costs estimates being firmed up.

Ofgem's view

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

Confirmation in relation to tax benefits

3.83. 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. 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.

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Conclusion

3.84. 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 £279,498,584.

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Appendix

Index

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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 Rampion Offshore Windfarm transmission assets.

C

Capex

Capital Expenditure

CAT

Cost Assessment Template

Cost Assessment Guidance

Can be found here https://www.ofgem.gov.uk/system/files/docs/2019/05/offshore_transmission_guidance_for_cost_assessment_april_2019.pdf

D

Developer

Rampion Offshore Wind Limited

E

EPQ

Enhanced Pre-Qualification

F

FTV CAT

The Developer cost assessment template submitted on July 2019

FTV

Final Transfer Value

G

GEMA

The Gas and Electricity Markets Authority

Generation Assets

The Rampion Windfarm Generation Assets

DRAFT

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 on April 2018

ITV letter

The formal ITV letter issued to the Developer in February 2019

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

OTM

Offshore Transformer Module

P

PIM

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

PM

Project Management

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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

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

The Rampion Offshore Windfarm Transmission Assets

TRS

Tender Revenue Stream

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