

# Offshore Transmission Cost Assessment Development Update

## Conclusion

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### Overview:

Ofgem has developed a cost assessment process to calculate the economic and efficient cost of developing and constructing offshore transmission assets built by generator developers participating in the offshore tender process. We have issued a guidance document to explain the cost assessment process and this process has been applied to the 13 offshore projects assessed to date.

We have reviewed how the offshore cost assessment process has been implemented and whether it could be developed further for the benefit of future tender rounds. This document sets out our position that we will maintain the current cost assessment process, while introducing improvements in our process of engagement with developers.

## Context

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We have reviewed whether changes to the offshore transmission cost assessment process are needed to ensure our process remains fit for purpose for future tenders. We published a consultation document in December 2013 which discussed potential approaches to benchmarking project costs. We also proposed options for improving our engagement with generator developers. These issues were discussed extensively with stakeholders, including in industry workshops. Stakeholders have also had the opportunity to provide written responses.

## Associated documents

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- Offshore Electricity Transmission: Tender Rules for the Second Transitional Tender Round, November 2010: [Link](#)
- Offshore Transmission: Guidance for Cost Assessment, December 2012: [Link](#)
- The Electricity (Competitive Tenders for Offshore Transmission Licences) Regulations February 2013: [Link](#)
- Offshore Electricity Transmission: Statement on future generator build tenders, July 2013: [Link](#)
- Statement on the proposed framework to enable coordination: An update to our December consultation, July 2013: [Link](#)
- Offshore Transmission Cost Assessment: Development proposals consultation, December 2013: [Link](#)

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## Executive Summary

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We have reviewed how the offshore cost assessment process has been implemented and whether it could be developed further for the benefit of future tender rounds. In our December 2013 consultation we considered our approach to benchmarking costs and options for improving our engagement with developers.

### **Benchmarking**

We engaged consultants to review our offshore transmission cost data from the projects assessed to date. Following their review and taking into account responses to the consultation, we concluded that due to the limited sample size and the variety of project specific factors across the range of offshore developments, it is not appropriate to solely rely on benchmark data to set target values for capital expenditure costs.

Our consultation document asked for views on whether we should implement ex-ante developer incentives. Based on our consultants' analysis, our data does not support the introduction of a strong ex-ante target cost incentive mechanism for all cost components of offshore transmission projects. Therefore, we will not pursue the use of ex-ante incentives for offshore transmission projects at this stage.

We will continue to use comparative cost analysis in our review of developers' capital expenditure. This analysis will be carried out at both an individual component and total project cost level.

For the avoidance of doubt, we will continue to apply caps on Interest During Construction (IDC).

### **Options for engagement**

We have considered a number of options that may improve engagement with developers. We will retain the current developer engagement process, while making incremental improvements to the means by which we gather and exchange information with developers. We have already issued improved data collection templates to developers. These were devised in conjunction with developers during a series of workshops and bilateral meetings held in 2014.

# 1. Introduction

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## Chapter Summary

This chapter provides background on our cost assessment process and outlines the work we have undertaken since our previous consultation.

## Background

### The regulatory regime for offshore electricity transmission

1.1. Offshore electricity transmission licences may be granted to Offshore Transmission Owners (OFTOs) following a competitive tender process run by Ofgem. The Electricity (Competitive Tenders for Offshore Transmission Licences) Regulations 2013<sup>1</sup> (the “Tender Regulations”) provide the legal framework for the procedure for the grant of offshore electricity transmission licences. The Tender Regulations set out the requirement for the Authority to calculate, based on all relevant information available to it at that time, 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.

1.2. Where the Authority has determined to grant an offshore electricity transmission licence to the successful bidder in respect of a particular project, the assessment of costs shall be used by the Authority to determine the value of the transmission assets to be transferred to that successful bidder.

### The cost assessment process

1.3. The Authority’s determination of the value of the offshore transmission assets to be transferred to the OFTO, is by way of two key stages:

- An estimate of the costs which ought to be incurred, where the construction of the transmission assets has not yet reached a stage when they are available for use for the transmission of electricity. This estimate is referred to as the Indicative Transfer Value (ITV). In practice, the ITV has been determined prior to the Invitation to Tender (ITT) stage of the tender process and used by qualifying bidders as a financial assumption in their ITT bid submissions.
- An assessment of the costs which ought to have been incurred, where construction of the transmission assets has reached the stage that they are available for use for transmission of electricity. This assessment of costs is used by the Authority to determine the value of the transmission assets to be transferred to the OFTO, and is referred to as the Final Transfer Value (FTV). The trigger point for commencing this assessment has been when circa 90 – 95% of the project costs have been incurred.

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<sup>1</sup> S.I. 2013/175

1.4. The cost assessment process is conducted by the Authority in parallel to the tender process.

### **Issues considered in the review**

1.5. Having gathered a level of cost data across offshore transmission projects, we launched a consultation<sup>2</sup> to ask for feedback from developers and interested stakeholders on areas where we might develop the cost assessment process. The issues considered included:

- Using unit cost benchmarking to both benchmark individual major cost components and to build up a total project cost;
- How the developer engagement process could be improved; and
- Using benchmarks to set ex-ante incentives or targets.

### **Progress since consultation**

1.6. During the consultation period, we held an industry workshop to discuss the issues above.

1.7. CEPA<sup>3</sup>, in collaboration with SKM, was appointed to undertake a peer review of our project cost data, recommend appropriate cost drivers, and assist us in developing a benchmarking process that is fit for purpose. The full report<sup>4</sup> of the work undertaken is published alongside this document.

1.8. Industry participants were keen for us to progress improvements to the means by which we gather and exchange information with developers. A joint Ofgem/industry working group was established to review and develop the existing cost assessment templates for exchanging project cost information. The updated cost templates were implemented during the early part of 2014 and are published alongside this conclusions document.

## **Purpose of this document**

1.9. This update document sets out findings of the review of our work on benchmarking and process options for engagement with developers.

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<sup>2</sup> "Offshore Transmission Cost Assessment: Development proposals", Ofgem, 4 December 2013

<sup>3</sup> Cambridge Economic Policy Associates, who led on the statistical methods element of the data analysis. Sinclair Knight Merz advised CEPA on the physical interpretation of the data and analysis outcomes.

<sup>4</sup> "OFTO Benchmarking", CEPA, 19 December 2014

## Structure of the document

1.10. This document has two further chapters:

- Chapter 2 describes the benchmarking data review undertaken by our consultant and explains how this has informed our current position on benchmarking and the use of ex-ante targets.
- Chapter 3 summarises our views on the cost assessment process and options for engaging with developers.

1.11. Appendix 1 includes a summary of responses to our December 2013 consultation on the offshore cost assessment process. All non-confidential responses are available on the Ofgem website.

## 2. Benchmarking

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### Chapter Summary

This chapter summarises our conclusions with regards to our review of benchmarking. It also sets out the rationale that underpins our conclusions.

### Background

2.1. We use benchmarking in our cost assessment process to help us determine whether a project's costs are economic and efficient when compared against industry averages derived from similar projects. These costs include capital expenditure (capex) and non-capex cost categories such as contingency, development costs and interest during construction (IDC).

2.2. Our approach involves comparing individual cost components on a project against similar costs from comparable prior projects. We also use benchmarking to derive estimates of total project costs based on both top-down cost drivers and bottom-up techniques.

2.3. Using benchmarks helps us to quickly and effectively identify areas to focus on for further investigation. Developers are given the opportunity to substantiate why their costs may differ from those of similar projects. In the absence of appropriate evidence to justify these differences, we have regard to benchmarking to determine economic and efficient costs.

### Consultation themes

2.4. Our December 2013 consultation document asked for views on how benchmarking could be further utilised to assess economic and efficient costs for future tender rounds.

2.5. We consulted on the appropriate dataset that may be used for benchmarking and sought stakeholder views on using benchmarks to set target costs on a total project or component cost basis. We presented the results of in-house analysis of unit cost levels per major component (e.g. cable supply costs, offshore platform costs), alongside comparisons of overall project cost projections and actual costs, based on differing cost drivers.

2.6. We proposed to engage an external consultant to peer review our data sets and committed to publish anonymised benchmarking data. There was generally strong support from industry for us to publish our peer reviewed anonymised benchmarking data.



## Benchmarking data review

### CEPA's benchmarking analysis

2.7. After a competitive tender process, we appointed CEPA to assist us with the review. We asked CEPA to review our project data, determine its suitability for benchmarking and help us to develop a benchmarking approach that is fit for purpose. CEPA reviewed our data for a range of cost categories for the two stages of the cost assessment process:

- **ITV:** For the ITT stage of the tender process, the developer submits project costs which we analyse to determine the ITV for the project based on the efficient and economic costs that ought to be incurred in connection with developing and constructing the assets. Some of the costs submitted at the ITV stage are estimates rather than firm values, and can end up being noticeably different for the later submissions;
- **FTV:** Once 90 - 95% of the project costs have been incurred, the developer submits their project cost data in the FTV cost assessment template.
  - Firstly, we analyse the data provided by the developer with the aim of ensuring that the data is free from errors and costs are allocated across the correct CAPEX categories (DFTV).
  - Secondly, we then assess the data against efficient and economic costs that ought to have been incurred in connection with developing and constructing the assets (AFTV).

2.8. At the time of the review, AFTV data was available for 11 offshore transmission projects.

2.9. The work undertaken by CEPA involved analysing our data to determine suitable cost drivers (e.g. cable length and transmission capacity) and then develop cost models using these drivers to estimate both individual component and total project costs on a bottom up basis.

2.10. The data was aggregated along the following capex cost categories:

- Offshore platform and substation costs;
- Onshore substation, equipment and connection costs;
- Land cable costs; and
- Sea cable costs.

2.11. Prior to commencement of the modelling work, the base data was reviewed to ensure that costs had been correctly allocated across the capex

categories. This also involved taking note of any additional factors that might have skewed individual values (e.g. non-recurring project specific costs), and where possible, offsetting the data for that impact.

2.12. CEPA identified cost drivers based on their understanding of factors that influenced each cost category. Cost drivers were assessed on their ability to predict asset costs and if they were suitably predictive and robust they were included in the benchmarking models.

2.13. The offshore projects under review had been constructed over a ten year period. Cost submissions made to Ofgem are in nominal terms without adjustment for inflation. CEPA adjusted the nominal costs to real prices using Retail Price Indices, but they did not adjust costs for other factors, e.g. copper prices.

2.14. The models used to calculate the benchmark costs for the cost categories were based on linear and log-linear formulae. CEPA also used averages from combinations of models to derive bottom-up estimates of total project costs, and compared these to actual project costs.

### ***CEPA's findings and conclusions***

2.15. CEPA generated a number of models for each of the main components, and assessed these against criteria of theoretical correctness (was the model appropriate, e.g. did it have a suitable cost driver), statistical performance (were the coefficients in line with expectations? Was the goodness-of-fit coefficient meaningful?) and robustness (driven by size of data set, where larger data sets are more robust). While some models were considered acceptable on the first two of these criteria, the comparative lack of data meant that CEPA were less able to endorse the models as being statistically robust.

2.16. CEPA also reviewed the predictive power of their bottom-up model relative to the actual project costs. While a number of the modelled cost predictions were within a +/-20% band of the actual costs, CEPA's analysis identified significant variations for some projects. This was true across all data sets, i.e. ITV, DFTV and ATV. The largest variations were related to the early projects where the cost reporting was done retrospectively.

2.17. The differences were attributed to a number of factors including cost allocation issues (again, largely relating to earlier projects), a relatively small dataset, project specific differences, restricted cost driver information and insufficient granularity in the costs reported for earlier projects to allow for sufficiently detailed modelling.

2.18. Given the limitations identified above, CEPA did not recommend using benchmarks to set target costs, but it concluded that our offshore transmission data set is a useful tool for comparative cost analysis.

2.19. CEPA recommends that both the individual component and bottom-up total cost models may be useful for assessing the costs of future projects.

However, with the current data set and given the variation in modelled estimates to actual costs, CEPA considers that the data does not support the introduction of a strong ex-ante target cost incentive mechanism for all cost components of offshore transmission projects.

## Ofgem's position

### Ofgem's approach to benchmarking

2.20. We have considered CEPA's analysis and recommendations. We were already mindful that the small data set would mean that whatever relationships might be indicated by our data would have to be treated with some caution, especially for some cost components. CEPA's analysis has confirmed this. However, it has also demonstrated that the data set does have value for comparative cost analysis.

2.21. We acknowledge CEPA's view that use of the data to impose capex targets or target costs with incentive mechanisms for all cost components of offshore transmission projects would expose developers to potentially significant and unjustified gains and losses. Developers have indicated that they welcome cost certainty up front, but only where they consider the target cost is well-founded and robust. In light of CEPA's analysis, we will not be introducing target costs or developer incentives at this time.

### Ofgem's use of the DFTV and AFTV data sets

2.22. Our December 2013 consultation considered whether we should preferentially base our benchmarks on the DFTV data set. We had concerns that use of the DFTV might place undue upward pressure on transfer values, while noting that use of the AFTV could result in the opposite effect.

2.23. The majority of respondents supported the use of the DFTV dataset for deriving benchmarks, suggesting that it was the better representation of the actual costs faced by developers.

2.24. The Tender Regulations make it clear that Ofgem's role is to calculate the economic and efficient costs of developing and constructing the transmission assets. We consider that using the DFTV dataset alone for deriving benchmarks is not consistent with our role to determine what the economic and efficient costs of developing and constructing the transmission assets are for a project. Additionally, CEPA analysis has not established a superiority of either data set in respect of being able to model efficient cost levels.

2.25. Our view is that the DFTV should reflect the upper bound of the likely efficient cost level, and the AFTV the lower bound of the likely cost level, before project specific factors are taken into account. We consider that both data sets contain useful information that should be taken into account as appropriate in ascertaining the economic and efficient costs for offshore transmission projects. We also take into account project specific factors in the calculation of the AFTV, so long as they are underpinned by robust evidence that the costs are efficiently and economically incurred in developing and constructing the assets.



2.26. We recognise that the reliability of statistical modelling approaches generally improves as the size of the dataset increases. As more data becomes available we will update our data set to enhance the robustness and use of benchmarking within the cost assessment process.

### **Current views on average cost levels**

2.27. Our consultation included our initial views on the cost levels of major system components, e.g. cables, offshore platforms and transformers. These were derived from our data prior to CEPA's subsequent data review and the adjustments for inflationary effects, copper and fuel price volatility. In light of the CEPA analysis we have reviewed our December 2013 published figures.

2.28. The table below gives our revised average unit cost levels for the main capex items and other project activities, taking the above factors into account. Our analysis of the respective proportion of overall cost attributable to each item remains largely unchanged<sup>5</sup>.

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<sup>5</sup> Page 20 in our previous consultation.

Component	Cost Driver unit	Co-efficient <sup>6</sup> (£m/driver unit)		Goodness of fit (R <sup>2</sup> ) <sup>7</sup> for 2015 value	Comments
		2013 value	2015 value		
Land cable supply and installation	km	1.214	1.566	0.80	For cable length less than 15km
Land cable supply and installation	km	0.555	0.531	n/a (too few points)	For cable length more than 15km
Onshore substation	MW	0.014	0.046	0.69	Excludes civils costs
Offshore substation	MW	0.013	0.046	0.34	Excludes platform costs
Submarine cable supply	km	0.489	0.520	0.77	132kV - 155kV cables
Submarine cable installation	km	0.352	0.496	0.71	

**Table 2.1: Unit costs for key components of offshore transmission systems.** (All cost figures in 2013 prices.)

2.29. The main changes from the previously published figures are:

- Land cable supply and installation cost has increased, primarily as a result of the inclusion of copper price volatility. Note that we have also slightly increased the threshold for short cables from 10km to 15km.
- Onshore and offshore substation values now include an allowance for additional equipment in respect of reactive power compensation and harmonic distortion correction.
- Submarine cable installation costs now include consideration of fuel price volatility.

<sup>6</sup> This is assuming a simple linear model of the form Cost = Cost driver \* Co-efficient

<sup>7</sup> The R<sup>2</sup> value provides a measure of how well the actual data are replicated by the model, where 1 indicates a perfect fit and 0 indicates there is no fit.



- 2015 analysis includes project data that was not available in 2013, namely Gwynt-Y-Mor and West of Duddon Sands.

## Summary and next steps

2.30. In the short term we will continue to use benchmarking analysis to facilitate the establishment of efficient costs of offshore transmission projects.

2.31. We also plan to improve the value of such analysis by:

- continuing to update our dataset and maintain an open and transparent cost assessment process; and
- continuing to improve our cost assessment template so that cost information is collected at the appropriate levels of granularity and in an appropriate format.

2.32. In the longer term, we intend to keep our current benchmarking approach under review.

## 3. Options for Ofgem engagement

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### Chapter Summary

This chapter summarises our conclusions with regards to the options for engaging with developers throughout the project stages. It also sets out the process improvements undertaken by the industry working group formed by Ofgem.

### Background

3.1. Under the current offshore tender process, we start engaging with developers before the tender exercise commences. Developers provide periodic updates on progress towards satisfying tender entry conditions such as entering into construction contracts and obtaining the necessary planning consents, land and property rights. This information helps Ofgem prepare to start a tender exercise for the project.

3.2. When the Authority decides to start a project's tender exercise, Ofgem provides the developer with a cost template to populate with costs relating to developing and constructing the offshore transmission assets and a high level review of costs commences. Ofgem's scrutiny becomes more detailed as construction progresses and reaches its peak as the project nears completion or is completed.

3.3. We have adopted the engagement approach described above for the cost assessment of 15 offshore transmission projects to date.

### Consultation themes

3.4. Developers had raised the concern with regards to the current cost assessment process that there is no certainty of the AFTV until construction of the transmission assets nears completion or the project is completed.

3.5. There were also concerns that the current process lacked transparency and this contributed to the uncertainty of allowed costs. The specific issues around the lack of transparency are as follows:

- Lack of timeliness in the collection of data, hence inability of developers to substantiate costs incurred in real time; and
- Lack of consistency in Ofgem's data collection methods. Also related to this, was lack of up to date guidance to aid developers with the data submission process.

3.6. To address these concerns, our December 2013 consultation proposed four different options for how Ofgem could engage with developers at each stage of a project. The options proposed in the consultation document were supported by feedback we received from developers. We provided an outline of each engagement option as well as our initial views on the merits and drawbacks of each option.

3.7. The four options that we proposed are briefly outlined below:

- Option 1 – The cost assessment process would remain as it is currently. Ofgem would engage on data collection once the tender process for a particular project commences. This would be facilitated by improved data collection templates and further guidance for developers to complete the templates. This was our preferred option at the time of consultation.
- Option 2 – The revised templates will be provided as per option 1. Ofgem will begin the formal data collection process from the developer at the end of the high level design and consent stage, i.e. much earlier than in the current process.
- Option 3 – In addition to the changes described under option 2, we would take a firm view on the appropriateness of allocation and efficiency of costs as they are submitted.
- Option 4 – Under this option, we would defer the cost assessment until after the Preferred Bidder (PB) for a particular project has been appointed.

## Stakeholder views

3.8. At the workshop held during the consultation period, industry participants suggested that we retain the current developer engagement process but progress improvements to the means by which we gather and exchange information with developers. This suggestion was in line with Option 1 as outlined in the consultation document and consistent with our proposed way forward in the consultation. This was also the dominant view of respondents to the consultation.

### Industry working group

3.9. Following the industry workshop, we established a working group that consisted of Ofgem and five developer representatives. The group's terms of reference focused on reviewing and developing the existing cost assessment templates for exchanging project cost information.

3.10. A number of improvements were identified that were supported by the working group. The proposed changes to the templates and recommendations for improving the data exchange process were circulated and amended based on comments from interested parties. Changes were subsequently agreed and the following improvements were made:

- Improved timings were agreed for information exchange between developers and Ofgem;



- Guidance was agreed on additional information templates in respect of insurance, foreign exchange and contracts with major commodity price elements within them; and
- An improved granularity of cost reporting for certain assets, such as offshore substations, was agreed.

## Conclusions and implementation

3.11. The improvements outlined above provide clear direction to developers regarding the type of information required to complete cost assessments with associated templates.

3.12. The updated cost templates and additional guidance information were circulated and implemented during 2014. The updated cost templates have been used by the two most recent projects<sup>8</sup> to report both their initial transfer values and ITVs.

## Ofgem's position

3.13. While option 2 might address improvements in data quality, beginning the formal data collection process earlier may be more of an administrative burden than providing the level of cost certainty that developers value. Option 3 provides further cost certainty, however it is also more resource intensive than the current process, and also risks inadvertently delaying projects as developers may wait for Ofgem approval prior to commercial commitment. Option 4 is likely to reduce the transparency around data; our experience is that the later the engagement, the more difficulty there is with obtaining clarifications of detail. This would only serve to increase the developer uncertainty around cost recovery, and so would not be a positive change. The respondents to the consultation broadly agreed with our views on the advantages and disadvantages of the options.

3.14. Therefore, at this stage, we will retain the current developer engagement process. There was strong consensus for this option from the industry workshop, the working group and from written responses to the consultation. Notwithstanding the developer concerns in respect of cost uncertainty, the process has worked well to date and industry now has sufficient precedent and guidance to allay its concerns.

3.15. We have made incremental improvements to the means by which we gather and exchange information with developers. The benefit of the updated cost template is already evident from the recent projects where greater cost granularity has given better information on the split of onshore substation costs into electrical and civils elements. This in turn has allowed for a more targeted discussion on the cost submissions.

3.16. We will continue to keep our cost assessment engagement process under review to ensure it is fit for purpose.

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<sup>8</sup> Westermost Rough and Humber Gateway



# Appendices

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## Appendix 1 – Detailed responses

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### Respondents' views

#### Benchmarking

In addition to seeking respondents' views on the consultation document, we held an industry workshop during the consultation to gather stakeholders' feedback on developing benchmarking and introducing incentive mechanisms. Industry participants were broadly in support of our proposals. In particular, industry suggested that we:

- Use DFTV dataset for benchmarking;
- Progress unit cost benchmarking;
- Publish our offshore transmission benchmarking information; and
- Develop incentives to be in line with how we intend to incorporate unit cost benchmarking into our process.

The written responses to the three questions that we presented in our consultation document were aligned with the views expressed at the industry workshop.

The questions and summary of responses are outlined as follows:

#### ***Appropriate dataset for benchmarking***

Question 1: What are your views on the appropriate dataset to use for deriving benchmarks and how they could be used in the cost assessment process? What are your reasons for this preference?

Of the six responses to the consultation, three supported Ofgem's view that DFTV is the appropriate dataset to use for deriving benchmarks. Two respondents did not express their views on what dataset to use and one respondent was not in favour of using DFTV to derive benchmarks.

One respondent in support of using DFTV stated that the reason for their preference is because it represents the actual costs incurred by the developer. They also stated that DFTV should be used for benchmarking rather than the AFTV as AFTV masks costs that are assessed as not economic and efficient by Ofgem.

Another respondent in support of using DFTV for benchmarking said it provided a complete picture for assessing different project costs. This respondent also considered that there could be value in using ITV at ITT stage as it reflects unamended contract prices without additional variation orders that may have been submitted or caused by alterations to the project scope.

The respondent not in support of using DFTV to derive benchmarks did not believe that the offshore transmission market was mature enough to benefit from using benchmarking to assess costs, especially if implemented at the FTV stage as developers would be unable to mitigate any cost issues identified.

### **Total project cost benchmarking**

Question 2: What are your views on the appropriateness of total cost benchmarking? If you believe it is an appropriate approach, what should be the cost driver(s) to be used for such benchmarking?

Five out of the six respondents did not support the use of total cost benchmarking for the following reasons:

- It is not robust for technologies such as HVDC or design criteria requiring reactive compensation;
- It doesn't account for different treatment in terms of risk allocation and contracting strategies, as well as differences in site location and other project specific costs;
- It is not useful in helping developers mitigate costs and adds no benefit to the process; and
- It offered limited effectiveness as factors such as supply chain capacity and availability of installation vessels may influence costs at any particular time resulting in deviations from a benchmarked cost appraisal.

One respondent recommended that an alternative way to make better use of total cost benchmarking was to generate unit costs from Transmission Entry Capacity (TEC) rather than using total installed generation capacity as this reflects the export capacity of the offshore transmission assets.

### **Component cost benchmarking**

Question 3: What are your views on the appropriate measures for benchmarking each of the individual component cost drivers?

All six respondents were supportive of using component cost benchmarking albeit with the following caveats:

- Ensure adjustments are made to the simple benchmarks that Ofgem currently used. E.g. benchmarks for offshore cable installation should be adjusted for cable burial depths and different marine environments;
- Different contract strategies should be accounted for in benchmarking; and
- Benchmarking should take place earlier in the cost assessment process to identify outliers. This will enable the developer to mitigate risks prior to contract negotiation phase and Financial Investment Decision.

### **Potential options for efficiency incentives**

Question 1: What are your views on whether and how to develop incentives for generator build projects?

Five of the six respondents were not in support of developing incentives. All broadly agreed that developers are already incentivised to minimise the overall cost of the offshore transmission assets from cost assessment risk and their exposure to TNUoS charges.

The respondent in support of developing incentives believed careful consideration should be given prior to the implementation of any new approaches and that an assessment methodology should be developed to test the incentive methodology against future larger HVDC projects.

### **Options for engagement**

Question 1: What are your views on options for Ofgem engagement discussed in this chapter? Are there any other approaches to engagement through the various project stages that you think we should be considering?

All six respondents welcomed the options for Ofgem engagement discussed in the consultation document. The respondents made the following recommendations:

- For complex projects e.g. those involving anticipatory investment or new designs, Ofgem should offer the opportunity for developers to present designs and procurement strategies prior to construction to provide developer with early assurance that costs will not be disallowed at a later stage;
- Benchmarking discussions should be had prior to FID, at contract negotiation phase to present developers with opportunities for cost savings.
- Further consideration should be given to developing arrangements that would provide earlier certainty for developers in order that risk can be mitigated.
- There is a need to understand differences in scale, complexity and risk of round 3 projects in comparison to rounds 1 and 2 projects.
- The cost model should be reviewed in light of round 3 HVDC projects which would make clear the level of detail required for option 3.

Question 2: Do you agree with our views on the advantages and disadvantages of the options presented? Which option offers the best way forward for the enduring regime, and why?

The respondents were broadly in support of the advantages and disadvantages of the options presented. Four respondents expressed their support for option 1. One respondent expressed support for early engagement with Ofgem on cost assessment to provide earlier certainty for developers over cost recovery. One respondent made recommendations on how options 1, 2 and 3 would benefit the process as outlined below:

- Option 1: On retaining the current cost assessment process, the respondent is of the view that this option could be acceptable if detailed guidance and cost assessment criteria was consulted upon and advised to industry.
- Option 2: This option may be constructive if the first review (with clearly defined deliverables) is completed following acceptance of the connection offer from National Grid.
- Option 3: This option may be administratively burdensome, but the transition to larger, more complex offshore locations may ensure that an appropriate knowledge of costs is developed.

## Appendix 2 – Glossary

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→ **Instructions:** Any technical or industry abbreviations used in your document must be set out together with an explanation in the glossary. Ensure that abbreviations definitions provided are used consistently by Ofgem.

### A

#### Authority

The Gas and Electricity Markets Authority established by section 1(1) of the Utilities Act 2000. The Authority governs Ofgem.

#### AFTV

Assessed Final Transfer Value

### B

#### Benchmarking

The process of comparing one party's costs to those of others in the industry or in comparable external organisations.

### D

#### Developer

The 2013 Tender Regulations define a 'developer' as 'any person within section 6D (2)(a) of the 1989 Act or within a developer group'. Section 6D(2)(a) of the Electricity Act 1989 defines such person as 'the person who made the connection request for the purposes of which the tender exercise has been, is being or is to be, held'. In practice, such person is also the entity responsible for the construction of the generation assets and, under Generator Build, the transmission assets.

#### Developer final transfer value (DFTV)

Once 90 - 95% of the project costs have been incurred, the developer submits their Final Transfer Value (DFTV) cost template.  
Developer-led Wider Network Benefit Investment (WBNI)  
Investment in transmission capacity to provide wider network benefit, led by developers as part of the development of their connection (whether Generator or OFTO build).

### E

#### Enduring Regime

The regulatory regime for offshore transmission for any project qualifying for a Tender Exercise after 31 March 2012.

## **F**

### Final Transfer Value

Ofgem's assessment of the economic and efficient costs that ought to have been incurred in connection with:

- (a) for a Generator Build Tender Exercise, the development and construction of the relevant transmission assets; or
- (b) for an OFTO Build Tender Exercise, obtaining the relevant preliminary works.

## **G**

### Generator Build

A model for the construction of offshore transmission assets. Under the generator build option, the Developer carries out the preliminary works, procurement and construction of the transmission assets. The OFTO operates, maintains and decommissions the transmission assets.

## **I**

### Indicative Transfer Value

Ofgem's estimate of the economic and efficient costs which ought to be incurred in connection with:

- (a) a Generator Build Tender Exercise, the development and construction of the relevant transmission assets; or
- (b) an OFTO Build Tender Exercise, obtaining the relevant Preliminary Works.

### Industry codes

The industry codes underpin the electricity wholesale and retail markets and define the terms under which industry participants can access the electricity networks including the Connection and Use of System Code (CUSC), the Balancing and Settlement Code (BSC), the Grid Code, the System Operator – Transmission Owner Code (STC), the Distribution Connection and Use of System Agreement (DCUSA) and the Distribution Code.

### Initial Transfer Value

This is the developer's initial estimate of how much they anticipate the offshore transmission assets will cost to build. The initial transfer value is published in the preliminary information memorandum in respect of a qualifying project which Ofgem publishes at the Pre-Qualification stage of the tender exercise (the PQ stage).

### Interest During Construction (IDC)

The financial allowance provided to developers for the cost of financing the development and construction of electricity transmission assets.

### Invitation to Tender (ITT) Stage

The stage of a Tender Exercise during which bidders are invited to submit their tender so that the Authority may determine which Qualifying Bidder becomes the Preferred Bidder or whether to hold a BAFO stage.



## L

### Linear formulae

Linear regressions assume that marginal costs are constant.

### Log-linear

Log-linear regressions allow marginal costs to vary.

## O

### Offshore Transmission Owner (OFTO)

The holder of an Offshore Transmission Licence.

### Offshore Transmission System

A Transmission System that is used for purposes connected with offshore transmission. An Offshore Transmission System is made up of Transmission Assets.

## T

### 2013 Tender Regulations

The Tender Regulations are made under section 6C of the Electricity Act 1989 and set out the legal framework and powers for the Authority to run a competitive tender process for the grant of an Offshore Transmission Licence in respect of an Offshore Transmission System.

### Tender Round

The Tender Exercises run by Ofgem in order to identify Successful Bidders to be granted Offshore Transmission Licences in relation to Qualifying Projects.

### Total cost benchmarking

This approach involves setting total project costs based on overall cost drivers, for example, total generation capacity.

### Transmission Assets

Are defined in paragraph 1(3) of Schedule 2A of the Electricity Act 1989 as 'the transmission system in respect of which the offshore transmission licence is (or is to be) granted or anything which forms part of that system'. The transmission system is expected to include subsea export cables, onshore export cables, onshore and offshore substations, and any other assets, consents, property arrangements or permits required by an incoming OFTO in order for it to fulfil its obligations as a transmission operator.

### Transmission Licence



The licence awarded under section 6(1)(b) of the Electricity Act 1989 authorising the NETSO or a TO to participate in the transmission of electricity including an Offshore Transmission Licence. The licence sets out a TO's rights and obligations as a transmission asset owner and operator.

#### Transmission Network Use of System (TNUoS) charges

Charges made by the NETSO to users of the National Electricity Transmission System for the provision of transmission network services to recover the tender revenue stream of all offshore transmission owners according to the TNUoS charging methodology in the CUSC.