

Offshore Transmission Cost Assessment: Development proposals

Consultation

Publication date: 4 December 2013
Response deadline: 11 February 2014

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Overview:

Ofgem has developed a cost assessment process to calculate the economic and efficient costs of developing and constructing offshore transmission assets built by generator developers participating in the offshore tender process. The cost assessment process has been followed for qualifying projects in the transitional tender rounds.

As projects under the transitional tender rounds are nearing completion, we consider it an appropriate time to review how the cost assessment process has been implemented, and whether it can be further developed to the benefit of future tender rounds. This document sets out for consultation our initial views on how benchmarking could be further incorporated into the process, how Ofgem could engage with developers, and whether it might be appropriate to introduce new incentives for developers in relation to the costs of developing and constructing offshore transmission assets.

Context

Ofgem and the Department for Energy and Climate Change (DECC) have developed a regulatory regime for offshore electricity transmission. A key part of this regime is that 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 (the “Tender Regulations”) provide the legal framework for the process which Ofgem follows for the grant of offshore electricity transmission licences. The Tender Regulations provide 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.

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 is used by the Authority to determine the value of the transmission assets to be transferred to the successful bidder. This transfer value will be reflected in the tender revenue stream payable to the OFTO under the offshore electricity transmission licence granted to the successful bidder.

Ofgem has followed the current cost assessment process in respect of the calculation of costs for all 13 transitional tender round projects. The process has evolved over the course of the regime and we consider that it is appropriate for us to assess whether the process could be enhanced for future tender rounds of offshore transmission projects. This document presents options for future tender rounds for generator build projects only. Details of how we would conduct cost assessment of pre-construction activities carried out by developers under the OFTO build model will be provided in due course.

Associated documents

- 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](#)

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Executive Summary

As the transitional tender rounds are nearing completion, we consider it an appropriate time to review how the cost assessment process has been implemented, and whether it can be further developed to the benefit of future tender rounds. This document discusses options for developing the cost assessment process in respect of the following three main areas and invites comments on the way forward.

Benchmarking

The current cost assessment process incorporates a comparative cost analysis with respect to direct costs incurred in constructing the transmission assets. We have also used this type of analysis to review development costs and the interest during construction rate.

We have reviewed our experience so far and the data collated from the projects assessed to date. Our initial view is that it may be possible to conduct benchmarking for various components for future projects, based on a combination of comparative data and project specific factors. This should provide a useful and transparent reference point for both developers and Ofgem, and would help focus the cost assessment scrutiny. We illustrate potential approaches by using some of the relevant cost data in this document to inform stakeholders' considerations.

Engagement process

For the transitional tender round projects, construction was already underway or completed when developer engagement commenced. Future projects may enable and/or require engagement at different stages or levels, where construction of the transmission assets either has not commenced or is at an early stage.

Our initial view is that the cost assessment process should largely remain as it is currently, where we make formal decisions on costs through determination of indicative and final transfer values. We will, however, seek to provide greater initial clarity on the data and information required from each stage of the project.

Developer incentives

We consider the existing incentives for developers to reduce costs of building offshore transmission assets and the appropriateness and possibility of introducing adjustments. Our initial view is before considering whether and how to set any incentive, we would first need to explore our capability to set target costs, and understand the extent to which the developers have control of the upsides and downsides.

Next steps

We welcome stakeholder views on the content of this document by 11 February 2014. We will be holding a workshop on this subject on 13 December 2013. We plan to publish peer reviewed benchmark data in early 2014 and invite further views



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from stakeholders. We expect to come to a decision on the way forward shortly afterwards.

1. Introduction

Chapter Summary

We outline the purpose of the consultation document and set out some of the interactions between cost assessment and other relevant offshore transmission policy areas.

The Regime

1.1. The Department for Energy and Climate Change (DECC) and Ofgem have developed a regulatory regime for offshore electricity transmission. This comprises both a transitional and an enduring regime.

The transitional regime

1.2. Under the transitional regime developers construct the transmission assets which are then transferred to an OFTO appointed through the competitive tender process run by Ofgem. The developer transfers these transmission assets at a transfer value set by Ofgem following an assessment of the economic and efficient costs of developing and constructing them. Ofgem expects this transfer to be effected by a Transfer Agreement which is commercially agreed between these parties.

1.3. OFTOs then operate and maintain the assets in accordance with the requirements of the Offshore Transmission Licence and the wider regulatory framework (including industry codes).

The enduring regime

1.4. The qualification period for projects to be included in the transitional tender rounds has now passed. All projects from tender round 3 (TR3) onwards will fall under the enduring regime arrangements. Under the enduring regime, developers may choose to either:

- develop and construct the transmission assets themselves and transfer them to the OFTO identified through a competitive tender exercise (the “generator build” option); or
- undertake high level design and preliminary works, but then have an OFTO, identified through a competitive tender exercise, undertake the detailed design, procurement and construction of the transmission assets (the “OFTO build” option).

1.5. In the case of generator build, the current cost assessment process will continue to apply, subject to any modification arising as a result of this (and any

further) consultation. The cost assessment process for the OFTO build option under the enduring regime will require some modification to establish the economic and efficient costs for the developer to complete the preliminary works. Although the same high level principles apply to both cases, the detailed steps in the process will differ.

1.6. Regardless of the party that constructs the offshore transmission assets, an OFTO will be responsible for the ongoing ownership and operation of the transmission assets.

Purpose of this document

1.7. Ofgem has developed a cost assessment process to calculate the economic and efficient costs which ought to be, or ought to have been, incurred in connection with developing and constructing offshore transmission assets. This calculation is the basis for determining the final transfer value of the offshore transmission assets for each generator build tender exercise.

1.8. We have followed the current cost assessment process to calculate the costs for all of the transitional tender round projects. Now that we will soon commence TR3 under the Enduring Regime, we consider that it is timely to review past experience, feedback from developers and other stakeholders, and consider areas where we might develop the cost assessment process. Regarding stakeholder input, the further developments mentioned in this document also consider feedback received during the cost assessment workshops we held during the past year.

1.9. The purpose of this document is to consult on our initial views with respect to options for developing the generator build cost assessment process for the Enduring Tender Rounds. Our thoughts on how the process might develop for OFTO build will follow in 2014.

Structure of the document

1.10. This document has six chapters as set out below:

- This chapter outlines the context and purpose of this document, indicates the interactions and interdependencies with other offshore transmission policy areas, and tells readers how to respond to this consultation document.
- Chapter 2 provides an overview of the offshore transmission regulatory framework and outlines the current stages of the cost assessment process. It also discusses areas for further development within the current process, alongside what we aim to achieve through any changes.

- Chapter 3 considers the potential for utilising benchmarking in the cost assessment process based on a review of our experience to date and data available from previous transitional tender round projects.
- Chapter 4 outlines and assesses options for cost assessment engagement that Ofgem could undertake at each of the key stages during the development and construction of a typical generator build project.
- Chapter 5 discusses the potential for setting developer incentives for the efficient development and construction of transmission assets, through the cost assessment process.
- Chapter 6 sets out the next steps for this work.

Interactions and interdependencies

Offshore Enduring Regime developments

1.11. Following the introduction of the regime, Ofgem has consulted with industry on the arrangements that will prevail after the end of the offshore transitional arrangements. Our generator build policy statement¹ published in July 2013 summarises our key decisions relating to generator build, including those relating to the OFTO licence under generator build. The policy statement also provides an overview of the regulatory regime and the tender process in advance of starting the first round of generator build exercises under the Enduring Regime.

1.12. The statement confirms that cost assessment will continue to be part of each generator build tender exercise, in order to fulfil Ofgem's obligation to calculate the economic and efficient costs which ought to be, or ought to have been, incurred in connection with developing and constructing the transmission assets for a qualifying project. This confirmation does not prohibit the cost assessment process itself from changing, but does indicate that it will only do so after appropriate consultation with stakeholders.

Tender Round 3 implementation

1.13. We intend to launch TR3 early in 2014. This will be the first tender round under the Enduring Regime.

1.14. Not all the process options presented in this paper may be ready for implementation at the commencement of TR3. However, subject to the outcome of this consultation and sufficient notice being given to relevant developers, we will

¹ Offshore Electricity Transmission: Statement on future generator build tenders, July 2013: [Link](#)

seek, where possible, to include any practical improvements such as changes to data collection templates at the earliest opportunity.

Offshore coordination policy developments

1.15. In December 2012, we consulted on a proposed framework to enable the coordination of offshore transmission². The consultation included three categories of investment relating to the development and construction of coordinated offshore transmission assets, namely: Generator Focused Anticipatory Investment (GFAI); developer-led Wider Network Benefit Investment (developer-led WNBI); and, non developer-led Wider Network Benefit Investment (non developer-led WNBI).

1.16. In July 2013 we published a policy statement³ setting out our view on the proposed way forward for two categories of investment: GFAI and developer-led WNBI. The policy statement highlighted next steps in these areas. The document also set out that for the third category of investment: non developer-led WNBI, policy development is ongoing.

1.17. In the July statement, we confirmed that following consultation and careful consideration of responses, we continue to consider that the key factor in giving GFAI developers greater confidence on their route to cost recovery is effective management of GFAI stranding risk. We remain of the view that this can best be achieved within the scope of the current industry framework.

1.18. In respect of developer-led WNBI, we confirmed our intention to implement a voluntary gateway assessment process. This would generally allow for gateway assessments on the rationale for inclusion of WNBI to be conducted ahead of preliminary and construction works. The policy statement also confirmed high level criteria for assessing gateway submissions. We continue development of the gateway assessment process, and will ensure consideration of relevant cost assessment issues in this development.

1.19. Our intention for this document is to focus on the development of the core cost assessment process, independently of the ongoing development of the coordination policy. Our current view is that the range of proposals contained in this document could be readily amended to include new developments under our coordination work.

² Consultation on a proposed framework to enable coordination of offshore transmission, December 2012: [Link](#)

³ Statement on the proposed framework to enable coordination: An update to our December consultation, July 2013: [Link](#)

Responding to this document

1.20. We would welcome comments from respondents on all issues in this document, although particular issues on which we expressly seek feedback are highlighted in the relevant chapters. Responses received will normally be published on the Ofgem website. Respondents who wish to have their responses remain confidential should clearly mark the document(s) to that effect and include the reasons for confidentiality. It would be helpful if responses could be submitted both electronically and in writing. Respondents are asked to put any confidential material in the appendices to their responses. We would also be happy to discuss the questions raised in the document with stakeholders and interested parties.

1.21. All responses should be received no later than 11 February 2014 and sent to: offshore.costassessment@ofgem.gov.uk.

1.22. We will be holding a workshop on the content of this consultation on 13 December 2013. Parties interested in attending should register their interest at the e-mail address above. Invites will also be sent out through the Ofgem daily e-mail and directly to our offshore stakeholder mailing list.

2. The current cost assessment process

Chapter Summary

We present an overview of the current stages of the offshore transmission cost assessment process. Potential areas in which the current process could be improved are presented, alongside what we aim to achieve by any changes.

Question box

Question 1: Are there any factors, other than those mentioned, that we should consider in relation to developing the cost assessment process?

Stages of the current cost assessment process

2.1. The Tender Regulations provide for the Authority to determine the value of the transmission assets to be transferred to the OFTO, by calculating the economic and efficient costs which ought to be, or ought to have been, incurred in connection with developing and constructing the transmission assets. The detailed process and principles used in determining the transfer value are contained in the Guidance for Cost Assessment document⁴ (the "Guidance"). The calculation exercise comprises two key stages, as follows:

- Undertaking an estimate of the costs which ought to be, or ought to have been incurred, where the construction of the transmission assets has not yet reached the stage that 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 be, or ought to have been incurred, where approximately 90 – 95% of the project costs have been incurred. This assessment of costs is used by the Authority to determine the value of the transmission assets to be transferred to the OFTO. This transfer value is referred to as the Final Transfer Value (FTV).

2.2. The cost assessment process is conducted by the Authority in parallel to the tender process, which it also manages. Set out below is a high level overview of the stages in the cost assessment process and the points at which they currently interact with the bid side of the tender process.

⁴ Offshore Cost Assessment: Guidance for Cost Assessment, Ofgem, December 2012: [Link](#)

Initial transfer value

2.3. Prior to identifying the ITV by undertaking the cost estimate exercise, an initial transfer value is identified. This is the developer's initial estimate of how much they anticipate the offshore transmission assets will cost to develop and construct.

2.4. Ofgem provides the developer with a cost template in which to submit this cost information, broken down into different cost categories. Ofgem performs a high level review of the cost information at this stage.

2.5. The initial transfer value forms part of 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"). It is used to give bidders a reasonable indication to bidders of the size and value of the project.

Indicative Transfer Value

2.6. The ITV stage of the process is the 'estimate' of the costs referred to in the Tender Regulations. At this stage, the developer submits updated cost information upon which Ofgem, with the support of its technical and financial consultants, carries out a forensic accounting review and a technical analysis.

2.7. The forensic accounting exercise entails a review of the contracts that the developer has entered into in connection with the development and construction of the transmission assets. The proposed cost allocations between the generation assets (which are excluded from the cost assessment) and the transmission assets are also reviewed.

2.8. The technical analysis focuses on two aspects:

- Reviewing the overall design of the project, the main purpose being to ensure the project design is functionally appropriate for the connected generation.
- Ensuring the costs for the project have been or will be economically and efficiently incurred. We do this by comparing developer cost submissions with both costs from other transmission projects which Ofgem has assessed (making allowances for project specific elements) and the cost data held by our advisers.

2.9. To date, the ITV has been published at the start of the ITT stage of the tender process. Qualifying bidders at the ITT stage use the ITV as an assumption underpinning the tender revenue stream which they bid to own and operate the transmission assets.

Final Transfer Value

2.10. The FTV stage of the process is the 'assessment' of costs referred to in the Tender Regulations. The trigger point for commencing this assessment has been when approximately 90 – 95% of the project costs have been incurred.

2.11. As with establishing the ITV, Ofgem instructs both accounting and technical consultants to support this stage of the cost assessment process. The accounting analysis undertaken to date has focused on reconciling contract status with invoiced amounts and bank statements showing payments. The technical review tends to focus on areas where there have been significant cost increases since the ITV, or where comparative analysis has indicated costs to be outside their expected ranges.

2.12. Following this assessment exercise, Ofgem sends the developer a draft cost assessment report setting out the assessed transfer value for the transmission assets of the project. This gives the developer the opportunity to correct factual errors and propose redaction of commercially confidential information prior to its publication.

Potential areas for development

2.13. The cost assessment process has been used to determine transfer values for over £1.4bn of offshore transmission assets. Some of the forthcoming projects may share similar characteristics with the transitional projects; others are expected to be significantly different, for example in terms of size, distance from shore and technology adopted. There may be justification for Ofgem to become involved earlier on in the project development process than has been the practice to date in respect of the transmission round projects. It is therefore worth considering what options for developing the cost assessment process might be available going forward. This will also allow us to incorporate developer feedback and learning points from the transitional round projects.

2.14. Based on our own experience and feedback from stakeholders, a number of areas for developing the cost assessment process for future projects have been raised. These are outlined below.

- *Data definition and data provision* – Clearer data definitions and improved cost templates would help developers to establish a robust set of cost data in a timely manner. It may also help developers to document the rationale for decisions taken during the course of the project.
- *Continuity and clarity* – The longer timelines of future projects might benefit from a more clearly defined engagement process, so that there is continuity between Ofgem and the developer. This would also allow developers to gain a better understanding of both the process and the associated timelines for data submissions.

- *Certainty of regulatory treatment of costs* – A large proportion of the cost efficiency analysis is carried out after the expenditure is incurred. Some developers have expressed concern about the uncertainty as to whether the costs they incur will be included in the final transfer value and consider it desirable for greater certainty to be provided earlier in the cost assessment process.

2.15. We consider the feasibility of dealing with these issues, and how they might be addressed, in the following chapters.

Question 1: Are there any factors, other than those mentioned, that we should consider in relation to developing the cost assessment process?

Aims for improving the current process

2.16. In considering any potential changes from the current process, we need to evaluate the impact of such changes across a number of relevant areas of principle and policy, for example:

- Transparency – Reducing any uncertainty in the cost assessment process by confirming clear expectations for the process;
- Proportionality of regulatory intervention – Ensuring that the process is proportionate and does not impose undue regulatory burden;
- Fit for purpose – Ensuring that the process remains flexible to different project characteristics; and
- Practicality in application – Taking account of the information available and the overall impact on project timelines.

3. Potential approaches for developing benchmarking

Chapter Summary

We present our initial views on the potential approaches of benchmarking in assessing the efficient costs for developing and constructing offshore transmission assets for future tender rounds. We illustrate these approaches by using data we have collected from the transitional tender round projects we have assessed to date.

Question box

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?

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

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

Overview

3.1. Benchmarking has been widely used by economic regulators in setting cost allowances and/or performance requirements. We have used a moderate amount of benchmarking so far in the cost assessment process. This chapter discusses potential approaches of benchmarking to assess the economic and efficient costs of developing and constructing the offshore transmission assets for enduring regime projects. We illustrate these approaches by using data we have collected from the transitional tender round projects we have assessed to date.

3.2. Closely related to the benchmarking approaches is the use of the benchmarking results in deriving the final allowed cost value. This is considered in relevant parts of the next two chapters.

Benchmarking

What is benchmarking?

3.3. In the context of the cost assessment process, benchmarking is the process of comparing one party's costs to those of others in the industry or in comparable external organisations. It can be used to establish, in terms of costs, what can be reasonably expected by an "average" or "best" performer in the comparator group. It can also be used to judge whether a party's costs are at an efficient level, or more

of an outlier. Within Ofgem, benchmarking is used in setting the ex-ante price control allowances or performance targets for onshore transmission and distribution network operators⁵.

3.4. When used in comparing the costs of systems or projects composed of a number of elements, there are two benchmarking approaches: (a) using total project cost benchmarking or (b) component cost benchmarking to build up a total cost based on the aggregation of individual elements.

3.5. Both of these approaches require the ability to derive suitable cost drivers, as well as the identification of the relationship between the cost level and the drivers (for example whether they are linearly related), in order to account for difference in scale and other relevant factors when making cost comparisons. Also, the data used must be subject to similar quality control standards and there must be a sufficiently large dataset for each performance metric to allow meaningful analysis.

3.6. For costs incurred in different time periods, the relevant data need to be converted to a comparable basis by taking account of factors such as inflation and/or commodity price movements. Further consideration may need to be given to the diversity or relative independence of the dataset; for example, whether the costs are derived from a sufficiently large pool of competitive suppliers.

Benchmarking in offshore transmission cost assessment

3.7. Given that there was a limited amount of comparable data available when assessing the transitional tender round projects, benchmarking has not been used to determine specific values of the economic and efficient costs for any particular project. However, we have used analysis to review allowed levels for certain cost elements such as development cost and to set the interest during construction (IDC) rate. We have also used benchmarking to guide our decisions on what cost areas it may be appropriate to investigate further, rather than as an absolute determinant of allowable costs. The data used for such analysis has included those that we have obtained relating to offshore transmission projects or onshore networks. It has also included data sourced externally.

3.8. Now that we have accumulated a reasonable amount⁶ of relevant data and experience of comparative analysis for the offshore transmission projects, there may be a greater scope for using benchmarking to establish efficient costs for future projects, either on an overall costs or an individual major component basis.

⁵ RPI-X@20: The future role of benchmarking in regulatory reviews, Frontier Economics, May 2010, contains an overview of the techniques for, and uses of, benchmarking in the GB onshore transmission and distribution sectors (available on the Ofgem website)

⁶ We have determined the FTV for nine of the thirteen projects in the transitional tender rounds and have determined the ITV for the remaining four projects.

3.9. The following sections discuss potential approaches for how benchmarking could be carried out to assess the efficient offshore transmission costs, illustrated by the use of the data we have collated from transitional round 1 and 2 projects.

Overview of transmission cost data used by Ofgem

Offshore data collected by Ofgem

Offshore data collection process

3.10. Under the current cost assessment process, Ofgem receives from developers a detailed breakdown of cost data, categorised in line with our template, at three main stages:

- **Initial Stage:** For the pre-qualification stage of the tender process, the developer completes a pro forma cost template provided by Ofgem which is used to generate the initial transfer value for the project;
- **ITV Stage:** For the ITT stage of the tender process, the developer submits updated project costs which are analysed and used to generate the ITV for the project. Some of the costs submitted at the ITV stage are estimates rather than firm values - later submissions can be noticeably different; and
- **FTV Stage:** Once about 90 - 95% of the project costs have been incurred, we receive the developer's final transfer value cost submission (DFTV). The DFTV sometimes includes data errors and misallocations, which Ofgem and its consultants correct. The FTV determined by Ofgem adjusts the corrected DFTV by excluding costs incurred which are deemed to be not economic or efficient.

3.11. Whilst all data collected at each of the above stages could be used in the comparative analysis, the values submitted at both the initial and ITV stages of the tender process are forecast figures without firm commitment and often do not relate well to the actual costs incurred by the time of project completion. The most relevant data for benchmarking are those directly associated with the final outcome, ie those from the FTV stage.

3.12. Our initial view is that either the DFTV, corrected for data errors and misallocations, or the FTV, should form the dataset on which to derive benchmarks. The corrected DFTV would include the cost incurred due to issues that arise in reality during the actual construction, eg construction delays, and so represent a factual view of the comparators in a group. By contrast, the FTV reflects a view of the efficiency cost for each of the comparator group. The choice of the dataset should be considered together with the benchmarking technique adopted (for example whether it focuses on the average or the efficiency frontier of the group). These two factors will affect the extent to which developers are likely to incur higher or lower costs than the benchmark value, and will need to be considered together when using the benchmark value to determine the allowed costs.

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?

Data presented in this chapter

3.13. During the FTV stage, the review of whether the costs are economic and efficient is often conducted iteratively and in tandem with the data assurance process, to avoid delays to the transaction process. Regardless of the choice of the dataset as discussed in the section above, a rigorous review is required to ensure that the data is on a consistent basis.

3.14. From our previous discussions with developers, we understand that it is helpful to inform their consideration of the potential benchmarking approaches with real project cost data. Without prejudice to the final view of the choice of dataset, we have used the uncorrected DFTV dataset throughout this chapter for illustrative purposes only, to indicate how benchmarking could be used to assist Ofgem in its assessment of economic and efficient costs for future offshore transmission projects.

3.15. Subject to stakeholder feedback to the question of the choice of dataset, we plan to publish a peer reviewed version of both the DFTV and FTV cost datasets during the first quarter of 2014. This will potentially include separate adjustments by firstly removing all errors and misallocated costs, and by secondly removing inefficient and uneconomic costs. We expect that this should further allow stakeholders to develop an informed view on the relative merits of these datasets and their suitability for use in developing benchmarks. Stakeholder views on those datasets will also be considered in our deciding the way forward on cost assessment.

Onshore data collected by Ofgem

3.16. Onshore transmission and distribution cost data is collected as part of the price control processes. There are common components between onshore and offshore costs. For example, data for underground 132 kV cable supply and installation costs and all the major components of onshore substations, such as transformers and switchgear, would appear in both onshore and offshore datasets. There is general compatibility on cost levels between the two datasets, although there can be differences: for example, some onshore components are replacements whereas all offshore components are new builds on green field sites. So although there are benefits to using a bigger dataset, care must be taken to ensure the compatibility of data.

3.17. Our intention is to examine these common component costs in greater detail, so that compatible costs can be combined to form a more robust dataset.

Data from external sources

3.18. Ofgem has also considered the use of external data sources, such as data in the public domain and data provided by consultants. Our experience is that good

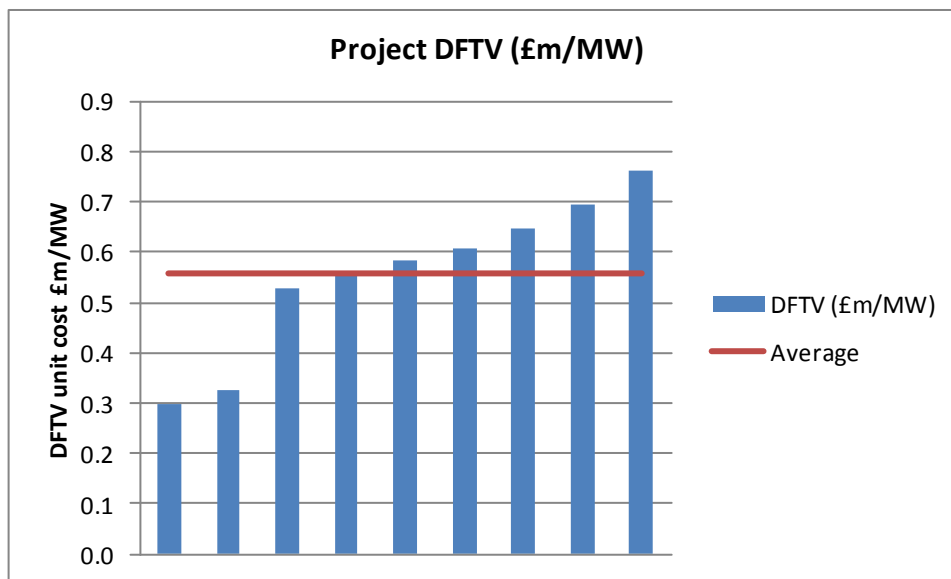
quality data on offshore capex costs is difficult to acquire, and that which has been available is not necessarily compatible with the GB cost base. This has made it difficult so far to increase our pool of benchmark data for offshore capex elements beyond the offshore transmission projects we have assessed to date. Comparable data on other elements of total project cost, such as IDC and project management costs, are more readily available for use.

Potential approaches for developing benchmarking

3.19. We discuss here potential benchmarking approaches to assess the economic and efficient costs for future offshore transmission projects. This could be done in one of two ways: through total cost benchmarking, or through a component-level costing approach.

Total project cost benchmarking

3.20. One potential approach is to set the total project cost based on overall cost drivers, eg the total installed generation capacity connected by the project, or the total generation capacity multiplied by the length of the cable route. Most of the projects to date have similar aggregate characteristics (eg distance from shore, near full utilisation of transformer capacities, etc). The chart below illustrates how the transitional projects rank on a £m per MW basis.



3.21. Under this approach, a total project cost in £m could be derived by multiplying the project capacity in MW by the mean (or median) of the range in the above, which is approximately £0.56m/MW. This has the advantage of being very simple to implement.



3.22. However, there is clearly a wide range of variability in this measure. Also, with changing characteristics (eg increasing distances from shore⁷) expected of the future enduring projects, we would expect such a measure to require recalibration to account for other factors such as the greater distances of cable to shore.

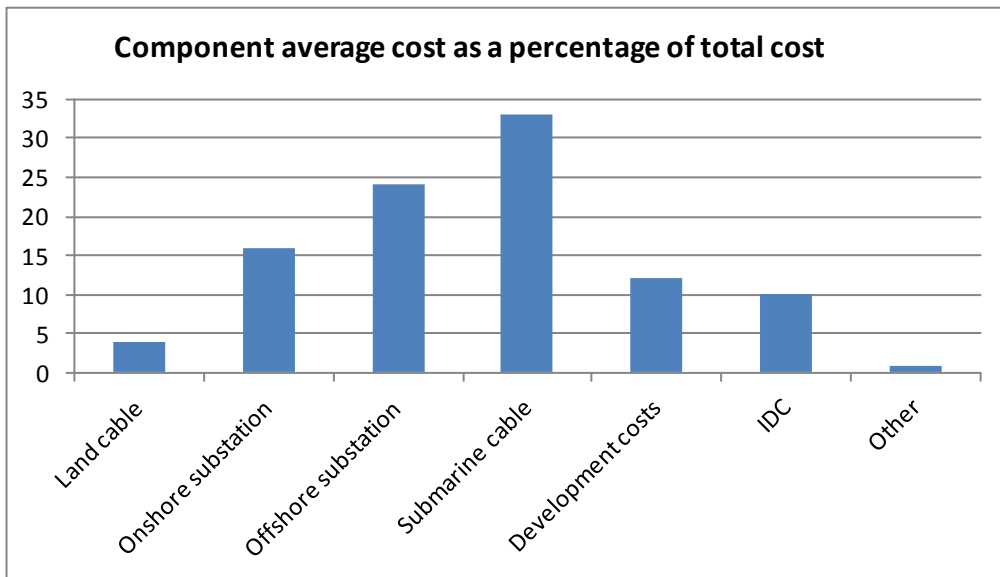
Question 2: What are your views on the appropriateness of total project cost benchmarking? If you believe it is an appropriate approach, what should be the cost driver(s) to be used for such benchmarking?

Component cost benchmarking

3.23. An alternative potential approach is to benchmark individual major cost components. These could be used to build up a total project cost. We have considered the costs of the major components for the transmission assets, as follows:

- Land cables supply and installation
- Onshore substations
- Offshore substations
- Submarine cables supply and installation
- Development costs
- Interest During Construction (IDC)
- Other (Transaction costs and miscellaneous costs)

3.24. The average percentage cost of these major cost components, based on developer submissions, is shown below.



⁷ The projects later than TR3 are expected to be 80 – 150km from shore, whereas most transitional projects have been less than 50km from shore.

3.25. Our initial component level analysis has been kept to a relatively simple format, to avoid complexity:

- we have used single cost drivers such as the installed capacity in MW or length of cable in km, as appropriate to the cost component; and
- we have only considered straight line relationships between the costs and the drivers without fixed costs, ie costs derived solely by multiplying the cost coefficients (eg in £/MW or £/km) and the size of the drivers in MW or km.

3.26. It may be that further detailed analysis will reveal a requirement to modify some of these simplifications, but they should be sufficient for the purposes of illustrating the potential for use of this data.

3.27. In order to preserve the confidentiality of the cost data, we are presenting aggregate statistics for each component. A summary table of the regression coefficients follows at the end of the discussion on the individual components. This should allow stakeholders to take a view on the average cost levels we have seen for these components, along with the goodness of fit for the cost predictions for each component.

Land cables

3.28. Offshore transmission export cables usually come ashore in rural areas. Most of the transitional projects have had short land cable routes of less than 10km, all of which have been buried underground. We have chosen cable length as the cost driver of land cable supply and installation. We have limited this analysis to cables of a similar capacity. In future, where cables of a different capacity may be used, a MWkm driver may be more appropriate.

3.29. The dataset on land cables splits into two distinct groups; those projects where the cable route is less than 10km, and those where it is greater than 10km. Those with a route less than 10km appear to have a significantly higher unit cost than projects with a longer route, presumably because projects with a longer route benefit from economies of scale. The levels of unit costs we have seen for both groupings are similar to the typical costs of rural land cables supplied and installed for the onshore transmission owners.

Onshore Substations

3.30. The onshore substations installed as part of an offshore transmission system use the same electrical components as those used in conventional onshore transmission and distribution systems. However, new substation builds on greenfield sites will have additional physical infrastructure costs, which tend to be very project specific and depend on the remoteness of the location from pre-existing infrastructure. In addition, installations use differing types of switchgear, and some projects require harmonic filters, while others don't. All these additional factors distort the obvious cost driver of £ per MW of installed capacity.

3.31. Our current view is that the onshore substation cost could be estimated by combining a transformer cost (using installed capacity in £ per MW as the cost driver) alongside a project specific element to account for other required electrical components, civil works and installation, etc. These additional costs would need to be considered on a case by case basis.

3.32. As with land cables, the individual components of onshore AC substations tend to be very compatible with the onshore price-control data and both datasets could be used together to establish costs for the electrical components of substations.

Offshore Substations

3.33. Offshore substations tend to cost more than their equivalent onshore substations as the equipment (transformer and switchgear suitable for offshore use) has to be installed in the relatively confined space of the platform and has to operate in the harsher offshore environment. There are also the additional costs of constructing and deploying the offshore platform.

3.34. Offshore transformer costs and enclosures tend to be based on MW capacity. Platform installation costs are dependent on the load carrying requirements, water depth and submarine ground conditions. Any benchmarking must therefore take account of all of these factors.

3.35. Our current view is that the offshore substation cost could be estimated by combining an equipment cost (using installed capacity in MW as the cost driver) with a project specific element to account for platform installation costs. As noted in the earlier discussion on the overall project cost driver, the similar terrain for the transitional round of projects has resulted in this project specific element being similar across all of the projects.

Submarine Cables

3.36. Offshore cable costs constitute about one-third of the total transmission project cost. Given their relative materiality, we have considered the supply and installation costs in their own right.

Offshore cable supply

3.37. Submarine export cables are required to transmit electrical power from the offshore substation to the onshore system. All except one of the assessed projects to date have used 132kV submarine alternating current (AC) cables, and they all have similar load carrying capability. For these projects, cable length would appear to be a suitable cost driver. However, with the likely use of higher voltage and/or different capability submarine AC cables, it may be that other factors would need be included in the consideration of the cost driver, for example by factoring the load carrying capability into a composite driver such as MWkm at a later stage.

Offshore cable installation

3.38. The installation of submarine cables is the most challenging part of constructing the transmission assets and therefore carries the biggest risk. Costs per kilometre tend to increase more than any other major component from the initial cost estimate to the final transfer value, by an average of more than 40 per cent. Cable installation issues also have knock-on effects elsewhere, such as increased development costs and increased IDC, with overall project costs driven up as a result.

3.39. We consider that the dominant driver of costs for cable installation is simply the length of cable; however, all of the projects have had issues regarding the offshore cable installation, albeit to varying degrees. Our initial analysis of the total submitted costs for offshore cable installation shows a comparatively weak regression co-efficient, indicating that the resulting forecasts are not as robust as some of the forecasts of other costs.

Development Costs

3.40. These indirect costs are composed of pre-construction design, survey and planning costs, project management costs, insurance costs, and other miscellaneous costs not involving the purchase of physical assets. For earlier projects, these costs had tended to be close to 15 per cent of total project cost, but more recent projects have shown that these can be reduced to the 10 -11 per cent range. As has been already stated this is one of the cost components that tend to escalate if issues arise with one of the major physical components.

3.41. Our current review of the data suggests that rather than being compared to the level of total project cost, it would be more appropriate to benchmark development costs as a proportion of the project direct costs (ie the capex components discussed in the sections above).

IDC

3.42. Interest During Construction (IDC) refers to the financing costs incurred by a developer in the period of developing and constructing the transmission assets and is only applicable to the cash flow that represents the associated capital expenditure and development costs. The size of this sum is controlled by two elements: (a) the interest rate and (b) the combination of capital expenditure profile and duration of the construction phase of the project.

3.43. For transitional round projects, we have capped the rate of IDC allowed⁸. The high variability of rates submitted by developers led us to impose this cap, which has

⁸ The maximum rate applicable on expenditure incurred up to 30 November 2011 was 10.8 per cent; this was reduced to 8.5 per cent from 1 December 2011 (both rates being pre-tax nominal)

been established on the basis of benchmarking the cost of capital for a group of comparable companies. Ofgem is consulting on its approach to setting the IDC rate⁹ and the outcome of that consultation will be applied to future cost assessments, as appropriate.

3.44. A related issue that can be considered for comparative analysis is the capital expenditure profile and how that impacts on the IDC entitlement. Only IDC that is incurred economically and efficiently is allowed, which applies to both the rate and construction period. Should the programme for expenditure contain inefficient costs or inefficient delays it will not be applied to those costs or during those delays.

3.45. Whilst it seems to be difficult to benchmark based on a straightforward cost driver, we have reviewed the expenditure profile for the transitional projects and would expect to take a view of the IDC entitlement period in future projects on the basis of what has been achieved by the current project rounds, after making allowance for the complexity of the given project.

Summary of illustrative component cost benchmarking

3.46. The table below gives a summary of our current analysis on potential cost drivers for the main components, along with their statistical measures for goodness of fit and estimates for reliability of prediction. These are provided for illustrative purposes at this stage. We expect to release a peer reviewed set of analysis on the corrected DFTV during the first quarter of 2014.

⁹ Offshore electricity transmission and interconnector policy: minded-to position on interest during construction (IDC), Ofgem, 18 October 2013

Component	Cost Driver unit	Co-efficient ¹⁰ (£m/driver unit)	Goodness of fit (R ²) ¹¹	Comments
Land cable supply and installation	km	1.214	0.744	For cable length less than 10km
Land cable supply and installation	km	0.555	n/a (too few points)	For cable length more than 10km
Onshore substation	MW	0.014	0.636	Excludes civils costs
Offshore substation	MW	0.013	0.824	Excludes platform costs
Submarine cable supply	km	0.489	0.941	132kV cables only
Submarine cable installation	km	0.352	0.578	
Development costs	Direct costs	0.155	0.888	
IDC	Total spend	Less than or equal to 8.5%	n/a (market based data)	Currently under review

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

Project cost from component cost benchmarking

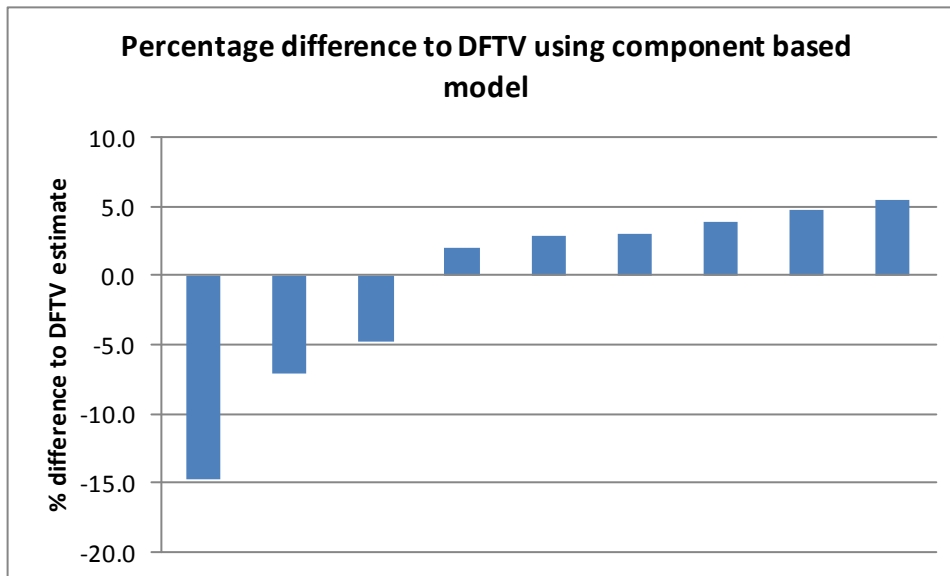
3.47. If all relevant component costs can be established from individual benchmarking analysis, then it is possible to put all of these component costs together to derive a total project cost. The following chart compares the percentage difference¹² of such a total cost model against the developer's submitted transfer

¹⁰ This is assuming a simple linear model of the form Cost = Cost driver * Co-efficient

¹¹ The R² 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.

¹² This is calculated as (Actual - Prediction)/Actual, so a negative difference means that the project submission was less than predicted by the model, a positive figure that the submission was more than predicted. Note that the ranking on this basis is not necessarily the same as the ranking in the previous chart of total cost benchmarking on a £m/MW basis.

value for the assessed transitional projects. These estimates include project specific costs for items such as onshore civils, offshore platforms, as discussed above. Most of the project predictions are within a ± 10 per cent band of the actual submission.



Limitations of using historical data

3.48. Benchmarking based on historical data, even when adjusted for factors such as inflation and commodity price movements, would not be sufficient to deal with all future projects. Under the enduring regime, it is expected there will be a more diverse range of project solutions than have been so far encountered. There are newer HVAC and HVDC transmission technologies that could be used for larger projects and if benchmarking is relied on these would have to be subject to a mixture of total cost and individual component cost approaches to determine whether the project is giving value for money to consumers.

Initial views and next steps

3.49. In the absence of further evidence, we consider that the use of total project cost benchmarking does not provide a sufficiently robust basis for use in our cost assessments.

3.50. On the basis of the analysis presented above, our initial view is that it may be possible to use benchmarking for some offshore transmission project costs (such as equipment supply costs, development costs and IDC), and other costs would have to be derived from project specific elements (such as civils, platforms and installation costs). In most cases, total project cost estimates based on component cost benchmarking seem to provide a reasonable agreement with actual costs.

3.51. However, application of this approach may be limited by the availability of suitable cost data going forward. We will be reviewing the possibility of combining

our current dataset with relevant onshore cost data to overcome this limitation. We consider that benchmarking based on data we collect could be developed to provide a useful and transparent reference point for both developers and Ofgem, and to help focus the cost assessment scrutiny. In the meantime, we will continue to use our dataset to inform our project specific assessments.

3.52. Subject to stakeholder feed back to this document, we plan to publish our accumulated and suitably anonymised project cost data, in the first quarter of 2014. This will be peer reviewed by external consultants and include separate adjustments for data correction and for efficiency. This should help to further inform stakeholders on the potential use of the data in benchmarking going forward.

4. Options for Ofgem engagement

Chapter Summary

Outlines and assesses options for how Ofgem may, as part of the cost assessment process, engage with developers at each stage of development and construction of the generator build project.

Question box

Question 1: What are your views on the 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?

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?

Overview

4.1. This chapter outlines and assesses options of engagement that Ofgem could undertake for the purpose of cost assessment at each of the key stages of a typical generator build project. We have set out our current views on the merits and issues with each of these options, and would welcome stakeholder views on the options and areas that we should focus on going forward.

Key project stages

4.2. All generator build projects will go through the following development and construction stages as summarised below:

- *Connection Offer:* The generator makes an application in writing to the National Electricity Transmission System Operator (NETSO), under the Connection and Use of System Code (CUSC). Following discussions with NETSO under the connection process, a firm offer is agreed between the parties (or referred to Ofgem for a determination).
- *High-level design and consent:* the generator produces a high level performance specification as part of their pre-construction works. The generator also undertakes an environmental impact assessment, obtains land acquisition rights (where necessary) and acquires the necessary property rights and planning consents.
- *Procurement:* the generator obtains the necessary agreements with equipment and services providers on the specification for works, secures manufacturing capacity and negotiates and signs construction contracts.

- *Financial investment decision (FID)*: the generator secures financing for the construction of the transmission assets. This generally involves formal sanction of the proposed project funding by the developer's management board.
- *Construction*: the transmission assets are manufactured following procurement of suppliers, and installed on site. Following completion of the assets there will be a commissioning period, when a set of tests and related activities take place to demonstrate that the transmission assets are compliant with relevant industry codes and fit for use either as a transmission system or as part of a transmission system.

4.3. To date projects have taken roughly 7-10 years to go through the entire process; future projects may take longer since they are expected to provide a greater capacity and be further offshore than the transitional tender round projects.

Ofgem engagement options

4.4. We have considered options for different levels of Ofgem engagement in the cost assessment process at the key stages of project development and construction. These options have stemmed from our own internal discussions on the current process and through discussion and feedback from developers at industry workshops.

Option 1: Retain current process with minor clarifications

4.5. Under this approach, the cost assessment process would largely remain as it is currently. Engagement with Ofgem prior to commencement of the tender exercise would primarily be for the purpose of the developer providing project updates, so that Ofgem is prepared for starting the tender. Ofgem would not request supporting information and evidence until the project had reached the point at which it was ready to commence a Tender Exercise. Authority views on costs would continue to be given through the Indicative and Final Transfer Value determinations.

4.6. The difference could be in the extent to which Ofgem sets out the data and information required from the developer at each stage of the process. Ofgem's guidance could be expanded further and this could be backed up by improved data collection templates that allow for pre-tender costs and issues to be logged in a more consistent manner than is currently the case.

Option 2: Collect data and review accuracy/completeness at each project stage

4.7. Under this option, we would provide the revised data template as under option 1. In addition, we would begin the formal data collection process from the developer at the end of the high-level design and consent stage, and at regular intervals thereafter.

4.8. At each project stage we would examine the accuracy and completeness of the information submitted to us. We would raise any clarifications with developers as soon as the need arises, and give developers the opportunity to discuss these further and submit updated information to us where relevant.

4.9. We would not take a view on the appropriateness of allocation or the efficiency of costs proposed until the developer has submitted a full cost template and the Authority has determined to commence a tender exercise with respect to the project. Once the tender has commenced, we would engage with the developer to determine the initial and final transfer values, in line with our current process.

Option 3: Collect data and assess costs at each project stage

4.10. This option was mentioned in feedback from some developers. 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. We would communicate our views on costs with developers following discussion with the developer. We would provide the developer with the opportunity to further substantiate areas where we have requested clarification, so that the developer is fully aware of our view on relevant costs at each stage.

4.11. Once the tender exercise has commenced we would request an updated cost template based on the costs we have already reviewed, and the total cost associated with that template would be used as the initial transfer value. Following on from this, additional forensic and engineering assessments may be carried out, as costs are incurred, to establish the indicative transfer value. This would include taking a view on any cost overruns related to items we had already assessed. Determining the final transfer value would follow a similar process.

Option 4: Defer cost assessment until after the Preferred Bidder (PB) has been appointed

4.12. This option was also mentioned in feedback from some developers. Under this option Ofgem would not formally engage on the detail of the cost assessment until after the Preferred Bidder (PB) had been determined. Ofgem would accept the developer's initial submission as the indicative transfer value for the purposes of the ITT, subject to only some high level checks of the data submitted, eg, ensuring that costs have been allocated correctly, but without any in-depth assessment for accuracy of data or efficiency of costs. We could also use our benchmarking data to highlight potential outliers and help calculate the likely range for an acceptable indicative transfer value.

4.13. Following announcement of the PB, the developer would be required to provide Ofgem with a completed cost template in one submission. At this point we would analyse the data and procure external technical and financial advisers to help with this process.

Question 1: Are there any other approaches to engagement through the various project stages that you think we should be considering?

Ofgem's initial views

4.14. We set out in this section our initial views on the options outlined above.

Option 1 – Retain current process with minor clarifications

4.15. The current process is well understood by current developers. It defers Ofgem's decision making until the later stages of the developer's project, thereby reducing the administrative burden (relative to options 2 and 3). This also allows the developer to progress with managing its project, without undue process. We consider that it could be developed by improving Ofgem's data collection methods by revised templates and pro formas and providing updates to Ofgem's Guidance, as appropriate. Both of these actions would address developer concerns about process transparency and should make the outcomes more predictable.

4.16. This option does not fully address the concern raised by developers about the uncertainty on allowed costs until Ofgem makes its final assessment of the economic and efficient costs of developing and constructing the transmission assets. However, there is now a growing number of publications, including the cost assessment reports for individual projects published by Ofgem, which should help developers' understanding of how costs will be treated. This, combined with the Guidance, should offset a significant proportion of the developer concerns on cost uncertainty.

Option 2 – Collect data and review accuracy/completeness at each project stage

4.17. This option deals with the concerns of timely data collection and being able to substantiate cost incurred in near real time. There is the issue that while it reduces the resource intensity of the process at the indicative and final transfer value stages, it shifts a significant proportion of the work to the beginning of the process. It may also encourage developers to seek Ofgem approval before committing to a course of action, which will not be possible. In addition, although we would request further information from developers at each project stage, we would not formally be taking a view on these until the tender exercise has commenced. Therefore, this option does not remove the cost uncertainty for developers.

Option 3 – Collect data and assess costs at each project stage

4.18. This approach would involve Ofgem assessing costs at the time they are submitted, which should allow us to communicate any concerns earlier on in the process. Developers have indicated that they could benefit from more certainty through the course of the project as to the costs that will be included in the FTV.

4.19. Unless an earlier view of all cost components could be taken by a high-level approach, for example benchmarking (an approach which is still very limited, as discussed in the previous chapter), this option is more labour intensive than the current process, and would be likely to increase tender costs for both developers and Ofgem as a result. It risks delaying the project, as developers may hold off critical decisions until approved by Ofgem. We therefore have reservations as to the appropriateness of this approach.

Option 4 – Defer Ofgem cost assessment until after the Preferred Bidder (PB) has been appointed

4.20. Under this option the data would be collected and analysed by Ofgem for assessment after the expenditure had been incurred. There are potential resource savings when compared with the current process, since there is only one stage of analysis as against the current two stages (indicative and final transfer values). This option also potentially reduces the administrative burden of the current process and allows developers to focus their resource on the project up to the point where the assets are near complete.

4.21. A large amount of work would need to be undertaken to unpick developers decisions taken throughout the process, and this could potentially be more time consuming to complete than required under the other options. There is a risk that information could be incomplete and/or cannot be adequately substantiated at the point of submission, which may lead to costs being disallowed.


4.22. Without performing an estimate to reach an indicative transfer value, there would be no reliable basis upon which bidders could estimate the tender revenue stream to be incorporated into bids. Accordingly, this option does not meet the requirements of the tender process.

4.23. In addition, this option does not meet the requirements of the Tender Regulations to perform both an estimate and a subsequent assessment of costs. It would therefore not be possible without a change in the law.

Conclusions on options

4.24. We have presented our initial views on the advantages and disadvantages of each of the options above. Based on our analysis, we consider that option 1 is our preferred way forward. Although it does not fully address the issue of cost uncertainty for developers, it is based on a process familiar to developers.

4.25. In our view, while option 2 may address data quality issues for the analysis stage, it is more costly and does not resolve developer cost uncertainty as the assessment will still be performed at the end of the cost assessment process. Option 3 deals with the cost uncertainty issue, but involves significant additional resourcing and expense at several stages of the process for both Ofgem and the developer. Option 4 presents a degree of risk for both developers and Ofgem and



Offshore Transmission Cost Assessment: Development proposals

would not meet the requirements for the robustness of the tender exercise to select a PB and would also require changes to the Tender Regulations.

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?

5. Potential options for efficiency incentives

Chapter Summary

We discuss how the current cost assessment process incentivises developers to develop and construct offshore transmission assets economically and efficiently. We then discuss the potential for new incentives.

Question box

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

Overview

5.1. Our experience from analysing costs from the transitional tender round projects is that nearly all of the projects incurred significant additional costs that had not been anticipated at the ITV stage. We believe that there is scope to learn from these projects; there may be ways to reduce the costs of developing and constructing offshore transmission assets in future. At the same time, there will be new challenges arising from future projects being constructed further offshore, and some of these may require new technologies or innovative approaches. To ensure that developers have the appropriate focus on ensuring efficiencies, we need to consider how developers are incentivised to reduce the cost of developing and constructing the transmission assets in a generator build scenario.

5.2. This chapter discusses whether and how we might introduce new incentives for developers in relation to the development and construction of offshore transmission assets. It is worth noting that the introduction of incentives would be dependent on the ability to establish the efficient costs by means such as the use of benchmarking.

Incentive mechanisms – key considerations

5.3. An incentive mechanism may take the form of establishing a target value before the activity is undertaken, followed by some assessment after completion of the activity. Where actual costs deviate from the proposed target value, there are a number of options for dealing with the difference:

- Excess costs or savings from overspend or underspend relative to the target value sit entirely with the regulated entity;
- There can be pre-agreed symmetrical/asymmetrical mechanisms in place to allow for sharing of losses/gains (so that only part of the risk/gain sits with the

regulated entity). These are frequently combined with caps and collars to limit the likelihood of windfalls; and

- There can also be mechanisms that allow for separate treatment of specific cost elements in response to changes in the underlying assumptions (usually where the risks are proven to be outside of the regulated entity's control).

5.4. While the above list is far from exhaustive, it is representative of many of the incentive mechanisms in place in the GB onshore electricity regime.

5.5. For offshore transmission, developers have an incentive to minimise the cost of the transmission assets, since a significant proportion of those costs feed back into their eventual Transmission Network Use of System (TNUoS) charges. However, this incentive is diluted, largely due to the fact that approximately 15-20% of the costs¹³ are socialised through the generic part of the TNUoS tariff. This effect of developers bearing part of the costs of offshore transmission assets would need to be reviewed carefully and taken into account in the consideration of appropriate incentives for them to reduce costs.

Setting a transfer value based on benchmarked target cost

5.6. To extend the conventional incentive mechanism based on an ex-ante target value to efficient development and construction of offshore transmission, we would need to set a target transfer value before the development and construction activities start. The target value could be based on benchmarks for the developer's transmission asset specification (where these exist). Where appropriate, this target could be adjusted (either up or downwards) for known factors arising from further consideration of the project's specific circumstances.

5.7. That value would become the project's target transfer value, and we could set an appropriate level of incentives for the developer to manage their costs to meet or beat the proposed target. Depending on the outcome, the developer could be exposed to the types of risks and rewards bulleted in paragraph 5.3 above.

5.8. This approach could simplify the overall cost assessment process and reduce the resources required for all parties. It also could provide developers with a degree of certainty over the project's transfer value, while setting them an explicit incentive to minimise transmission costs. However, before we explore this approach further we need to be able to set target costs in a robust manner and understand the potential upsides and downsides that the developer would be exposed to, as well as the scope for it to make meaningful efficiency savings.

¹³ A review of the transitional projects indicates that typically 15 – 20 per cent of the FTV costs are paid for by the generality of consumers

5.9. On the basis of our analysis in Chapter 3, our initial view is that we would need to analyse our data and develop the benchmarking technique further to see whether we can establish our capability to set target costs. In addition, we would need to fully understand the extent to which developers have control of the upsides and downsides of the cost variations around this target. Following on from this, we would then be in a position to further consider whether and how to set any new incentive.

5.10. We expect to consider this matter further after the completion of tender round 3.

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

6. Next steps

Chapter Summary

We set out next steps that will need to be taken following the close of this consultation.

6.1. To facilitate discussion of the issues raised in this consultation, we will be holding a workshop on 13 December 2013. We expect this to help to inform stakeholder responses to this document, which are due by 11 February 2014.

6.2. We will consider the responses to the document and issues raised during the workshop in coming to our view on how to progress these topics. We will also take into account any views by stakeholders on the peer reviewed data that we plan to publish in the first quarter of 2014. We would expect to confirm our views on how we will take this work forward soon afterwards.

6.3. In parallel, we plan to progress work on items such as improved cost templates, data categorisations, and any necessary updates to the cost assessment guidance, which we consider are needed irrespective of the how the above issues develop.

Appendices

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Appendix 1 - Consultation Response and Questions

1.1. Ofgem would like to hear the views of interested parties in relation to any of the issues set out in this document.

1.2. We would especially welcome responses to the specific questions which we have set out at the beginning of chapters 2 to 5 and which are replicated below.

1.3. Responses should be received by 11 February 2014 and should be sent to:

Roger Morgan
Offshore Cost Assessment
9 Millbank
London
SW1P 3GE
offshore.costassessment@ofgem.gov.uk

1.4. Unless marked confidential, all responses will be published by placing them in Ofgem's library and on its website www.ofgem.gov.uk. Respondents may request that their response is kept confidential. Ofgem shall respect this request, subject to any obligations to disclose information, for example, under the Freedom of Information Act 2000 or the Environmental Information Regulations 2004.

1.5. Respondents who wish to have their responses remain confidential should clearly mark the document/s to that effect and include the reasons for confidentiality. It would be helpful if responses could be submitted both electronically and in writing. Respondents are asked to put any confidential material in the appendices to their responses.

1.6. Next steps: We will consider the responses to the document and issues raised during the workshop in coming to our view on how to progress these topics. We will also take into account any views by stakeholders on the peer reviewed data that we plan to publish in early 2014. We would expect to confirm our views on how we will take forward this work soon afterwards.

1.7. Any questions on this document should, in the first instance, be directed to:

Roger Morgan
Offshore Cost Assessment
9 Millbank
London
SW1P 3GE
roger.morgan@ofgem.gov.uk

CHAPTER: Two

Question 1: Are there any factors, other than those mentioned, that we should consider in relation to developing the cost assessment process?

CHAPTER: Three

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?

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

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

CHAPTER: Four

Question 1: What are your views on the 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?

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?

CHAPTER: Five

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

Appendix 2 – Glossary

A

Anticipatory Investment

Investment that goes beyond the needs of immediate generation, reflecting the needs created by a likely future generation project or projects.

Authority

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

B

Benchmarking

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

C

Coordination

The work we are undertaking to support the development of onshore and offshore transmission networks in a strategic and coordinated manner.

CUSC

Connection and Use of System Code.

D

DECC

The Department for Energy and Climate Change, which is the government department responsible for, among other things, the introduction of the regulatory regime for offshore electricity transmission. It has responsibility for commencing the relevant sections of primary legislation and approves new and amended tender regulations.

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).

Distribution Network Operator (DNO) or Distribution System Operator

An entity that operates an onshore electricity distribution network, which includes all parts of the network from 230V up to and including 132kV in England and Wales. In Scotland, DNOs operate all parts of the network up to but not including 132kV as 132kV is considered to be part of transmission rather than distribution.

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

Gateway Assessment

An Ofgem assessment of the rationale for Developer and Non-Developer led Wider Network Benefit Investment being taken forwards at the preliminary works and/or construction stage.

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.

Generator-Focused Anticipatory Investment

Anticipatory investment that provides offshore transmission capacity for specific future offshore generation projects.

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.

N

National Electricity Transmission System Operator (NETSO)

The National Electricity Transmission System Operator is the entity responsible for coordinating and directing the flow of electricity over the National Electricity Transmission System.

Non developer-led WNBI

Investment to develop offshore transmission assets that would support reinforcement of the wider transmission network, onshore or offshore, but have not been identified as part of a developer's Bilateral Connection Agreement (BCA).

O

Offshore Transmission Coordination Project (OTCP)

A project launched jointly by Ofgem and DECC in 2011 to assess the potential costs, risks and benefits that may arise from the development of a more coordinated offshore and onshore electricity transmission network. It published its final report in March 2013.

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.

OFTO Build

A model for the construction of offshore assets. Under the OFTO build option, the Developer obtains the connection offer and undertakes high level design and preliminary works. The OFTO constructs, operates, maintains and decommissions the transmission assets.

P

Phase

A grouping of transmission assets to be built out over a period of time, where the grouping is defined by certainty of build out (for example, in relation to a Final Investment Decision and/or key contractual obligations). A phase may include stages. Each subsequent phase of the transmission assets would constitute a separate Qualifying Project.

Pre-Qualification (PQ) Stage

The stage of a Tender Exercise starting from the publication of the pre-qualification documentation, including the preparation, submission and evaluation of pre-qualification submissions and ending once Ofgem has published the long list of Qualifying Bidders who have pre-qualified for the qualification to tender stage.

Q

Qualification to tender (QTT) stage

The stage of a Tender Exercise starting from Ofgem publishing the confidentiality agreement in relation to the qualification to tender stage. It includes the publication by Ofgem of the long list of Qualifying Bidders who have pre-qualified for the qualification to tender stage, the preparation, submission and evaluation of Qualifying Bidder's responses to the qualification to tender documentation. It ends once Ofgem has notified the Qualifying Bidders of its selection of Qualifying Bidders to be invited to participate in the invitation to tender stage.

R

Regression analysis

A statistical process for estimating the relationships among variables.

RIIO

Revenue = Incentives + Innovation + Outputs. The RIIO price control model is the price control framework applied to onshore transmission and distribution of gas and electricity.

S

Stranding Risk

The risk that when investment in transmission or generation assets is made, expected build out is not reached, resulting in underutilised transmission assets or generation assets unable to transmit.

Successful Bidder

The Preferred Bidder in a Tender Exercise to which the Authority intends to grant an offshore transmission licence.

T

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. Currently the 2010 Tender Regulations (only for certain Qualifying Projects) and 2013 Tender Regulations are in force.

2013 Tender Regulations

The Electricity (Competitive Tenders for Offshore Transmission Licences) 2013.

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.

Transfer Agreement

The agreement to be entered into by the Successful Bidder and the Developer to transfer any property interests, rights or liabilities in or relating to Transmission Assets from the Developer to the Successful Bidder in respect of the relevant Qualifying Project subject to a Tender Exercise.

Transitional regime

The offshore transmission regulatory regime covering all projects that met the Qualifying Project requirements set out in the 2010 Regulations before 31 March 2012.

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.

TR3

Tender Round 3. The first tender round to be held under the enduring regulatory regime for offshore transmission.

W

Wider Network Benefit Investment (WNBI)

Investment which has wider network benefits by serving to mitigate the need for separate reinforcements of the onshore transmission network.

Appendix 3 - Feedback Questionnaire

1.1. Ofgem considers that consultation is at the heart of good policy development. We are keen to consider any comments or complaints about the manner in which this consultation has been conducted. In any case we would be keen to get your answers to the following questions:

1. Do you have any comments about the overall process, which was adopted for this consultation?
2. Do you have any comments about the overall tone and content of the report?
3. Was the report easy to read and understand, could it have been better written?
4. To what extent did the report's conclusions provide a balanced view?
5. To what extent did the report make reasoned recommendations for improvement?
6. Please add any further comments?

1.2. Please send your comments to:

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