

Proposed interest during construction approach for offshore transmission and Project NEMO

Consultation

Publication date: 18/10/2013

Response deadline: 15/11/2013

Contact: Helen Curry

Teams: Offshore Transmission; European
Electricity Transmission

Tel: 0203 263 9904

Email: Offshore@ofgem.gov.uk;
Cap.Floor@ofgem.gov.uk

Overview:

We issued an open letter in May 2013 to initiate a review of Interest During Construction (IDC) for offshore transmission to reflect current market conditions. This review is being conducted jointly with the work to establish the methodology to set IDC for the NEMO interconnector, which we intend to regulate under the Cap and Floor regime.

This document consults on the approaches that Ofgem is minded to take on deciding IDC for the offshore regime and NEMO. We welcome responses to the positions set out in the document by 15 November 2013.

Context

With the Government setting an ambitious target that 15% of the UK's energy needs to be met from renewable sources by 2020, a dynamic approach was needed to deliver the substantial investment required in transmission. The competitive regulatory regime for offshore transmission was established jointly by the Department of Energy and Climate Change (DECC) and Ofgem in June 2009. From the outset the offshore transmission regime has sought to encourage innovation and to attract new sources of technical expertise and finance, whilst ensuring that grid connections are delivered efficiently and effectively. Under the regime we run the competitive tender process to select and licence Offshore Transmission Owners (OFTOs). For a generator build offshore transmission project, the transmission assets are transferred to the selected OFTO and the developer receives a payment from the OFTO based on the transfer value determined by Ofgem.

In Great Britain (GB) we currently have limited capacity of electricity interconnection with neighbouring countries. Further cross border interconnection has been identified to be needed, through the European Energy Infrastructure Package, which could deliver a more efficient and integrated energy market. To facilitate efficient and timely investment in interconnectors, we are developing the Cap and Floor regulatory regime which we intend to apply to the proposed GB-Belgium interconnector, Project NEMO. Under this regime we will determine the asset value for the interconnector on the completion of its construction, which will be the basis for setting the range of allowed regulatory revenue going forward.

In determining the final asset values of generator build offshore transmission assets and of NEMO under the Cap and Floor regime, we include the efficient cost of capital for construction through IDC. This consultation sets out the methodology we are minded to take on IDC for both offshore transmission and NEMO.

Associated documents

IDC Review specific documents

[A review of interest during construction for generator build offshore transmission projects and Project NEMO: Policy development and illustrative IDCs \(October 2013\)](#)

[Open letter- offshore electricity transmission and interconnector policy: proposed scope and timetable for review of interest during construction \(May 2012\)](#)

Offshore Transmission

[Offshore Transmission: Guidance for Cost Assessment \(December 2012\)](#)

[Decision on interest during construction for offshore transmission assets \(October 2011\)](#)



Proposed interest during construction approach for offshore transmission and Project NEMO

[Offshore transmission: Interest during construction for transitional tender rounds \(July 2011\)](#)

[Grant Thornton: Interest during construction for TR2A offshore transmission assets \(March 2011\)](#)

[Ernst & Young: Interest during construction for TR1 offshore transmission assets \(March 2010\)](#)

Interconnectors

[Cap and floor regime for regulated electricity interconnector investment with application to Project NEMO \(March 2013\)](#)

[CEPA report: Financeability study on the development of a regulatory regime for interconnector investment based on a cap and floor approach \(March 2013\)](#)

Contents

Executive Summary	5
1. Introduction	7
Background	7
Aims and scope of the review	8
Interactions and interdependencies	8
Progress to date	9
Document structure	9
2. Proposed Approach and Rationale	11
Outline of the approach	11
Choice of comparator companies	13
Assessment of asymmetric risks	13
Forms of IDC for the regimes	16
3. Application	17
Offshore transmission – setting and reviewing the cap	17
NEMO – calculations carried out at FID	18
4. Illustrative Rates	20
5. Responding and Next Steps	21
Responding to this consultation	23
Next steps	24
Appendices	25
Appendix 1 – Summary of open letter responses	26
Appendix 2 – Glossary	28
Appendix 3 – Feedback questionnaire	31

Executive summary

We issued an open letter in May 2013 (“the May open letter”) to initiate a review of the Interest During Construction (IDC) for offshore transmission to reflect current market conditions. This review is being conducted jointly with the work to establish the methodology to set IDC for the proposed GB-Belgium interconnector, Project NEMO, which we intend to regulate under the Cap and Floor regime. This consultation outlines the position Ofgem are minded to take on IDC for both of these regimes. The joint review is aimed at achieving consistency where justified.

After assessing responses from stakeholders to the May open letter and feedback from workshops, and considering a report by our consultant Grant Thornton¹, we have arrived at a minded-to position on the methodology for setting IDC rates for both regimes.

The methodology we are minded to use for setting IDC is based on the Weighted Average Cost of Capital (WACC), with a Capital Asset Pricing Model (CAPM) for calculating the return on the equity component. When applying the CAPM, we use market data for companies that share characteristics with companies constructing offshore transmission links and interconnectors, to derive values for risk, equity and gearing that are appropriate to the sector. For offshore transmission this group includes integrated energy companies and transmission companies; for NEMO, it includes integrated energy companies.

Based on the WACC figures so derived, we are minded to take further adjustments. For offshore transmission, the relative low risk faced by the developer is reflected in the choice of the low end of a range of values. For NEMO, we are minded to include an uplift in IDC to reflect development and construction risk. Consistent with our approach for other rates of return under the Cap and Floor regime for NEMO, we also propose to carry out separate calculations for the IDC methodology based on GB and Belgian data. The rate that will be applied to NEMO will be the average of the two calculations.

For offshore transmission, we are minded to continue with the cap approach and publish a cap for all projects reaching Final Investment Decision (FID) in the same financial year. Unlike the current approach, the rate agreed at FID of a project will be applied for the whole of its development and construction period. We expect to review the cap and its methodology annually, but any changes resulting from such reviews would not affect the projects having already reached FID prior to such changes.

Our intention for the IDC rate for the Cap and Floor regime for NEMO is to establish a fixed calculation which will be applied at FID to establish the rate for the particular project reaching FID at that point.

¹ [A review of interest during construction for generator build offshore transmission projects and Project NEMO: Policy development and illustrative IDCs \(October 2013\)](#)

To aid the understanding of the minded-to methodology, we provide in this document illustrative results based on 30 June 2013 market data. For the offshore transmission regime, our minded-to approach produces an indicative nominal pre-tax cap for IDC of **7.00%**, which is the lower end of the range between 7.00% and 8.87% derived from applying the methodology. For NEMO, the minded-to methodology gives an indicative real vanilla² rate of **5.40%**. These figures are provided for illustrative purposes only. We will set out final figures for offshore transmission in 2014-15 based on prevailing market data when we publish our decision on the methodology. For NEMO, we intend to finalise the calculation at FID.

We welcome views of stakeholders on our minded-to methodology by 15 November 2013. We intend to publish our final decision for offshore transmission by January 2014, and for NEMO in the first quarter of 2014.

² The 'vanilla' cost of capital (or IDC in this case) consists of a pre-tax cost of debt and post-tax cost of equity, weighted by gearing.

1. Introduction

- 1.1. Developers of generator build offshore transmission assets and of Project NEMO, which we intend to regulate under the Cap and Floor regime, invest capital during the planning and construction phase with no return on this investment until the project is complete due to the single asset nature of these investments. In determining the final asset values, we include the efficient cost of capital for construction through Interest During Construction (IDC). IDC is accrued on the actual cash flow which represents when payments are made against the contracts for developing and constructing the transmission assets. We have determined that IDC should be allowed up to the point where the transmission assets are available for use for the transmission of electricity³.
- 1.2. We issued an open letter in May 2013 to initiate a review of IDC for offshore transmission to reflect current market conditions⁴. This review is being conducted jointly with the work to establish the methodology to set IDC for Project NEMO which we intend to regulate under the Cap and Floor regime. We are conducting this joint review of IDC for both regimes to ensure consistency where justified.

Background

Offshore transmission regime

- 1.3. For a generator build offshore transmission project, the developer receives a payment for the efficient cost of developing and constructing the assets from the OFTO at asset transfer. The payment is based on the economic and efficient costs of developing and constructing the assets as determined by Ofgem. The rate for IDC is based on the figure we consider an efficient offshore transmission company would have incurred to fund the development of the assets. We have calculated IDC on a pre-tax nominal basis. The use of a pre-tax rate ensures that developers receive a rate that enables them to meet the expected level of tax in the chargeable gain arising from the inclusion of financing costs in the assessed costs.
- 1.4. Since the establishment of the offshore transmission regime, our approach to IDC has been to use the developer's submitted rate (subject to economic and efficient justification) or a cap set by us, whichever is lower. Most recently in October 2011, we decided that an IDC cap rate of 8.5% would apply to expenditure incurred from 1 December 2011 onwards. We indicated in that decision that we would keep the IDC rate under review so that it remains fair and reflective of the market conditions.

³ [Offshore Transmission: Guidance for Cost Assessment \(December 2012\)](#)

⁴ [Open letter- offshore electricity transmission and interconnector policy: proposed scope and timetable for review of interest during construction \(May 2012\)](#)

The Cap and Floor regime for NEMO

- 1.5. The regulated regime for the electricity interconnector NEMO is being developed with the Belgian regulator CREG. Under the proposed regime design for NEMO, Ofgem and CREG will allow NEMO to recover economic and efficiently incurred capital expenditure.
- 1.6. The developers will be remunerated for their investment through revenues over the asset life instead of through a one-off payment as under the offshore transmission regime. The Cap and Floor regime for NEMO will ensure that the annual revenues developers receive from their investment do not fall below a minimum level (the floor) or exceed a maximum level (the cap). The floor and cap are set on the basis of relevant rates of return on the Regulated Asset Value (RAV) of the interconnector. The opening RAV is the efficient cost of constructing the interconnector assets and incorporates the IDC sum. This review seeks to outline the method that should be employed in calculating the IDC rate for NEMO, which currently aims to reach Final Investment Decision (FID) in 2014.

Aims and scope of the review

- 1.7. Our aims in conducting this review are to establish a methodology for setting IDC rates for offshore transmission and NEMO. The IDC rates need to be such that they enable efficient and economic investment. The methodologies for offshore transmission and NEMO will be consistent with each other, but take into account the different risk profiles and requirements of the two regimes.
- 1.8. This review does not cover when the accumulation of IDC on a project will end, or the type of costs that IDC will be applied to. In line with the cost assessment guidance for offshore transmission⁵, the IDC ceases when the transmission assets are able to transmit and only applies to costs that are deemed to be economically and efficiently incurred. We will continue this approach.

Interactions and interdependencies

- 1.9. Remuneration for financing costs during construction is implicitly or explicitly applied in regulatory arrangements for onshore and offshore transmission, and for NEMO under the Cap and Floor regime. The different treatments reflect differences in the regulatory frameworks, specifically with regard to the timing of costs being incurred and revenues being earned. While the methodologies for calculating IDC for offshore transmission and NEMO are guided by the same high-level principles as those for the onshore transmission regime, detailed aspects of the arrangements differ and decisions made during this review do not set precedent for the onshore regime.

⁵ [Offshore Transmission: Guidance for Cost Assessment \(December 2012\)](#)

Progress to date

- 1.10. We commissioned a report from Grant Thornton to contribute to this review. The report is published alongside this consultation, although the positions we are minded to take should be viewed independently. In addition to Grant Thornton's work, we have reviewed stakeholder responses to the May open letter and contributions at the two stakeholder workshops hosted by Grant Thornton in May and July. A summary of the responses to the open letter can be found in Appendix 1.
- 1.11. In the May open letter, we proposed the following criteria for how the IDC methodology should be applied:
- promoting value for money for present and future generations of consumers
 - transparency and predictability, so that developers and funders understand how the rate is calculated and applied for the duration of the project
 - ensuring risk is appropriately reflected in the calculation
 - flexibility, so that changes in circumstance can be reflected where appropriate.
- 1.12. In their responses to the consultation and during the workshops, stakeholders expressed their support for the use of these criteria, while they stressed the importance for predictability and stability over flexibility.

Document structure

- 1.13. This document contains four further chapters:
- Chapter 2 outlines the approach we are minded to take for calculating IDC. This starts with an outline of the approach for calculating the WACC. We then consider two specific methodological issues: the choice of comparator companies used, and the approach for accounting for asymmetric bias in risk relative to the comparator group for offshore transmission and NEMO
 - Chapter 3 outlines the application aspects of setting the rate of IDC for relevant projects



Proposed interest during construction approach for offshore transmission and Project NEMO

- Chapter 4 sets out illustrative IDC numbers for both methodologies. These figures are based on input parameters relevant for 30 June 2013, and will be updated prior to the decisions being published
- Chapter 5 discusses the next steps in the review and invites stakeholders to respond to the document

2. Proposed approach and rationale

Chapter summary

This chapter outlines the key methodological positions we are minded to take, and the illustrative IDC rates these would give. It then discusses in more detail specific aspects of the minded-to methodology, including the choice of the comparator companies that we are minded to use when calculating the WACC, and the additional adjustments we are minded to include for offshore transmission and for Project NEMO. It also gives illustrative rates these minded-to methodologies would produce based on recent market data.

Question Box

Question 1: Is the use of WACC and CAPM appropriate for calculating IDC here?

Question 2: Is our minded-to approach to accounting for risk bias for offshore transmission and NEMO appropriate?

Outline of the approach

Current approach

- 2.1 Our current approach to setting the cap of the IDC rate for offshore transmission is based on deriving an estimate of the WACC. The WACC is calculated as the sum of the cost of debt and the cost of equity in proportion to their relative weights in the capital of the company (the gearing), as shown by the formula below:

$$WACC_{pre-tax} = (k_d \times D / (D + E)) + (k_e \times E / (D + E) \times 1 / (1 - t))$$

Where: k_d = Cost of debt, k_e = Cost of equity, D = Net debt
 E = Equity market capitalisation, t = Tax rate.

- 2.2 The cost of debt is the interest rate a company pays for its debt. This is calculated based on the iBoxx sterling non-financial corporate bond yield over 10 years. These yields are for A rated and BBB rated bonds for offshore, and BBB rated bonds for NEMO⁶.
- 2.3 The cost of equity is estimated using the CAPM. The CAPM describes the cost of equity as equal to the risk free rate plus a premium that investors bear to

⁶ This conforms to the proposal in the [March 2013 consultation on the NEMO cap and floor regime](#) March 2013 consultation on the NEMO cap and floor regime, paragraph 3.28.

reflect the systematic risk inherent in the market. Systematic risk arises as a result of a range of macroeconomic factors that affect all asset classes with different magnitudes. The value of the premium consists of the required additional return for a diversified portfolio of assets (market risk premium) multiplied by a measure of the covariance of a particular asset's returns relative to the variance in returns on the market as a whole (known as equity beta or β). The cost of equity can be expressed using the following formula:

$$k_e = R_f + (\beta \times \text{MRP})$$

Where: R_f = Risk-free rate, β = Equity beta,
MRP = Market risk premium

- 2.4 The risk-free rate is estimated as the observed return available from Government bonds, specifically the 10 year average on 10 year bonds. The equity beta is calculated for a set of comparator integrated energy companies. The market risk premium is calculated using historic market data.
- 2.3 When calculating the WACC, comparable companies that share characteristics with the companies constructing offshore transmission links are used to derive values for the equity beta and gearing that are appropriate to the sector. These values are then fed into the CAPM and used for the WACC respectively.
- 2.4 In response to the May open letter and workshops, stakeholders expressed the view that the use of the CAPM remains suitable in principle. This methodology has been used in earlier studies of IDC, both by EY and Grant Thornton.

Minded-to approach

- 2.5 Having considered potential alternative options, as outlined in Grant Thornton's report published alongside this document, we have decided to continue with the same broad calculation approach for offshore transmission and apply this approach to NEMO. Our review includes the updating of relevant parameters in the offshore model as well as extending the methodology to NEMO and consideration of differences to reflect potentially relevant risks.
- 2.6 In this review we have given more detailed consideration to two specific methodological issues:
- what comparator groups appropriately reflect the risk profile of OFTOs and NEMO respectively

- whether there may be potential asymmetric risk in comparison to the chosen group of comparator companies, and how best to reflect this in the IDC calculations

Choice of comparator companies

- 2.7 Our minded-to methodology is to use two different comparator groups to calculate the WACC for offshore transmission and for NEMO. For offshore transmission, we have decided to use both integrated energy companies and transmission companies. The functions of offshore transmission would be better reflected by including companies specialising in transmission since their revenues are provided through network charges. Under the offshore regime, offshore transmission assets do not take operational volume or price risk, making transmission companies appropriate comparators as well as more general players in the energy industry – the integrated energy utilities – which are representative of larger developers of wind farms.
- 2.8 Our minded-to methodology uses only integrated energy utilities as the comparator group for NEMO. This is because interconnector revenues come from the power price differentials between the two interconnected countries. As such, the interconnector bears operational volume and price risk post-construction between the cap and the floor

Assessment of asymmetric risks

- 2.9 The theoretical basis for remunerating non-systematic risk is strictly limited to where that risk is asymmetric. If the distribution of expected outcomes is such that the risk of a loss is greater than the 'risk' of a gain, it is appropriate to provide compensation for that risk, and vice versa.

Development risk

- 2.10 An investor in a diversified portfolio of interconnectors may still reasonably expect some to be aborted before they are able to generate revenue. It may be appropriate, therefore, to provide an allowance (in this case through an uplift of the IDC) compensating this risk. This allowance, however, would only be granted to a project that operates under the Cap and Floor regime, i.e. we will not compensate developers of aborted projects for lost costs. To recognise the risk of potentially unremunerated investment during this particular period of an interconnector project, we are minded to uplift the IDC for NEMO. The estimate of the uplift we are minded to adopt is based on the increase of the cost of capital for companies exclusively dealing in oil and gas exploration activities, compared to integrated oil and gas companies. We welcome stakeholder views on this approach.
- 2.11 For generator build offshore transmission, the uncertainty in the project lies with the build of generation capacity, while the transmission link is a

necessary consequence of the decision to establish generation. Furthermore, the economic and efficient costs of development relating to exploring various options for an offshore transmission project are reimbursed to the developer. Therefore, such activities do not incur a higher level of risk compared to subsequent construction.

- 2.12 For these reasons, Ofgem is minded to apply an additional allowance of 0.54% expressed as an addition (or 5.88% expressed as a multiplier) for development risk, as recommended by Grant Thornton, to the calculation of IDC for Project NEMO but not to the IDC cap for offshore transmission projects.

Construction risk

- 2.13 Under both the offshore transmission regime and the Cap and Floor for NEMO, Ofgem establishes the asset value based on an ex-post review of costs. If the developer has spent resources inefficiently during construction then Ofgem will disallow these costs from the final value. This has been cited by the developers as a risk for their investment that they feel should be reflected in the IDC rate. However, the developer should only be remunerated for efficient investment, and we must be mindful not to undo the decision of disallowance of inefficient capex through increase in IDC.
- 2.14 It could be argued that the potential uncertainty of any cost disallowance might present higher risks to investment during the construction phase. However, for offshore transmission, this risk has been adequately addressed by a transparent process and a solid track record of rational decision making. For example, Ofgem has set out clear cost assessment principles in the guidance and published cost assessment reports for all offshore transmission projects setting out clear rationale for any disallowances. Furthermore, the ex-post nature of the cost assessment means that any unexpected, but efficient, cost overruns are accepted in the final asset value, which substantially reduces the risks faced by the developer during construction, in comparison to risks faced by the comparator companies during construction and operation phases.
- 2.15 The Cap and Floor regime for NEMO does not yet have a track record to rely on like offshore transmission. In addition, the technology risks may be greater for interconnectors. Therefore, construction risk may appear asymmetric, making it reasonable to include an uplift. Grant Thornton's estimate of the uplift is based on the difference in the cost of capital for relevant PFI projects during and after construction. We welcome stakeholder views on this approach.
- 2.16 Ofgem is minded to provide an additional allowance of 0.91% expressed as an addition (or 16.60% expressed as a multiplier) for construction risk, as recommended by Grant Thornton, to the calculation of IDC for NEMO, but no uplift for offshore transmission.

Reflection of other differences in risk profile

- 2.17 Here we examine other potential bias of risks faced by the developer of a generator build offshore transmission project during the development and construction phases, against those implied by the base calculation using the comparator group data.
- 2.18 Under the offshore transmission regime, the efficient costs of development and construction are reimbursed to the developer. The ex-post cost assessment regime is now well established, with clear guidance about the costs that will be allowed in the transfer value. Of particular note is the fact that any unexpected but efficient cost overruns are included in the allowed transfer value. This reduces the risk of the construction phase considerably in comparison to the typical commercial construction and operation activities as carried out by the comparator companies.
- 2.19 Our WACC calculation based on Grant Thornton's IDC analysis assumes a maximum debt funding level of 40% for offshore (36% for NEMO). We consider this level of gearing is particularly conservative. Some offshore transmission links will be built using project finance and we consider that this should be available to all developers. Such project finance would be expected to attract over 80% funding from borrowing. Debt funding is also available from sources other than commercial banks and the capital markets. The European Investment Bank have provided debt funding to offshore wind farms and other quasi-state lenders such as the Green Investment Bank and export credit guarantee organisations are active in the provision of debt to this market. Therefore the mean WACC based on Grant Thornton's data is likely to be higher than appropriate for offshore transmission.
- 2.21 We also note, in comparing this review with its predecessor, that all the component elements of the WACC used for the IDC, bar one, have reduced as economic conditions continue to be poor. This contrary parameter is the observed equity beta of the comparator group of companies. While Grant Thornton's current work results in a comparator group with a significantly increased equity beta (0.88), the company which is arguably the closest parallel to a regulated transmission operator, National Grid, has an equity beta of 0.31. In addition, a study by Ofgem's consultants for the RIIO price control reviews found that the equity beta for a regulated network business may lie between 0.35 and 0.50⁷. Whilst this is an area deserving of more study in a subsequent review, we are minded to keep the method proposed by Grant Thornton for simplicity. However, we note that this is another factor that could also lead to the mean WACC based on Grant Thornton's data being higher than appropriate for offshore transmission.
- 2.22 We note that offshore transmission developers are able to access a variety of financing options, and benefit from the stability and clarity provided by the

⁷ RIIO Reviews Financeability Study, Imrecon working with ECA (November 2012)
<https://www.ofgem.gov.uk/ofgem-publications/48160/gd1financeabilitystudydec12.pdf>

offshore regime. They also receive a one-off payment fully reimbursing their economic and efficient investment, allowing the capital to be recycled. We also note the levels of debt sustained by regulated transmission companies and the general reduction in components of IDC. We therefore believe that it is appropriate to select a cap at the bottom of the range proposed by Grant Thornton.

Forms of IDC for the regimes

Offshore transmission – nominal pre-tax cap

- 2.23 We will continue to set the offshore transmission IDC cap value in nominal terms, because the cash flow is reported in nominal terms. The rate is set at a pre-tax value, to allow developers to meet the potential level of tax in the chargeable gain arising from the inclusion of financing costs in the assessed costs.

NEMO – real vanilla rate

- 2.24 IDC applied to the Cap and Floor regime for NEMO will need to be factored in to the RAV for calculating the cap and floor. In order to set it on a consistent basis with the rest of the regime, we intend to set the rate in real vanilla terms. The cap and floor themselves will be set in real terms (and indexed to the Retail Prices Index (RPI)). They will also incorporate a specific allowance for tax costs, so (unlike for offshore transmission) such costs do not need to be included in the IDC.

3. Application

Chapter summary

This chapter outlines the application aspects of setting the IDC cap and rate. It outlines the rationale for fixing the IDC rate for each offshore transmission project at FID, based on the applicable cap at that time, and how the IDC cap should be reviewed annually. It also outlines how the IDC will be calculated and factored into the opening RAV of NEMO.

Question Box

Question 3: Do you agree with our minded-to approach of applying the IDC cap and rate for offshore transmission and NEMO?

- 3.1. This chapter sets out our minded-to view on the application aspects of how the IDC rate will be set for offshore transmission and Project NEMO. In considering alternative options, we take into consideration how these would perform against the criteria we set out in the May open letter and summarised again in Chapter 1, as well as the stakeholder views on how these criteria should be prioritised in application.

Offshore transmission – setting and reviewing the cap

- 3.2. Currently, a single cap is used for all live projects accumulating IDC at any one time. This cap is periodically reviewed. For projects accumulating IDC when the new cap is applied, the revised cap is used for expenditure incurred for the period following the change.
- 3.3. We are minded to adjust this position. We propose that there should be one cap for all projects reaching FID in the same financial year, with that rate applying to the projects for the whole of their construction period. The change from the current approach should provide greater predictability and stability in the financing decisions of developers and should lead to lower financing risk premiums, which should in turn bring down the overall costs for consumers.
- 3.4. To ensure the regime is flexible and can account for changes to the market, we are minded to review the cap and its methodology annually. Changes resulting from such reviews are not expected to affect the projects that have already reached FID prior to the review.
- 3.5. During the workshops following the May open letter, some developers voiced a preference for the cap to be changed to a fixed rate. We have decided not to take this approach, and to continue to apply our current policy of a cap to the

IDC rate. This is because during the full length of construction that the rate is to be applied to, it is likely that some developers would access capital at a lower rate and it is important that the efficiency benefit is captured for consumers.

- 3.6. For projects that have already reached FID before the minded-to methodology and value are adopted, we are minded to continue with the existing policy. That is, the IDC cap that will apply will be the one in force at the time that expenditure is incurred, rather than the rate agreed at FID. This means that the new cap will apply to expenditure incurred on these projects from April or May 2014, depending on when the decision document is published. This is because this is the approach outlined in the last IDC review and in the cost assessment guidance, and was the approach understood by these developers when they committed to their projects.

NEMO – calculations carried out at FID

- 3.7. We are minded to calculate and fix the rate when Project NEMO reaches FID.
- 3.8. We propose to carry out separate calculations for the IDC methodology based on GB and Belgian data. This is consistent with our approach for other rates of return in the Cap and Floor regime for NEMO. The rate that we intend to apply to NEMO will be an average of the two calculations.

Cost of debt

- 3.9. We intend to use the same iBoxx data set used in the RIIO cost of debt index.⁸ However, the time horizon over which the averaging would take place would be 20 days before FID, estimating the cost of debt prevailing at the time of FID and the terms that are likely to be available to the interconnector developers for that project.

Cost of equity

- 3.10. We intend to calculate the risk-free rate as the 10-year average yield on 10-year benchmark UK index-linked gilts and Belgian nominal government bonds.⁹ Belgian bonds will be deflated by 2.0%, in line with the Eurozone inflation target.

⁸ For GB this will be the iBoxx indices for sterling-denominated bonds issued by non-financial companies with at least 10 years remaining maturity and credit ratings in the BBB and A categories. For Belgium this will be comparable indices for Euro-denominated bonds. The GB index will be deflated by 10-year breakeven inflation data, while the Euro index will be deflated by the official inflation target of the European Central Bank (i.e. 2.0%).

⁹ Or nearest maturity if a 10-year benchmark is not available.

- 3.11. The equity risk premiums for the UK and Belgium will be sourced from the Credit Suisse Global Investment Returns Sourcebook,¹⁰ as with offshore transmission. In order to be consistent with the calculation of the risk-free rate, the premiums will be calculated relative to bonds.
- 3.12. For the equity beta we intend to use the observed equity beta for the comparator group of companies – integrated energy utilities as discussed above. Since the sample includes companies from a range of European countries, the same equity beta estimate will be used for both GB and Belgium.

Gearing

- 3.13. Gearing will similarly reflect the observed gearing of the relevant comparator group of companies. We intend to calculate the group's gearing in the relevant period closest to FID.

¹⁰ http://www.investmenteurope.net/digital_assets/6305/2013_yearbook_final_web.pdf

4. Illustrative numbers

- 4.1. To aid the understanding of the minded-to methodologies, the tables below outline an illustrative range and cap for offshore transmission and an illustrative rate for NEMO. These figures are based on input parameters relevant for 30 June 2013. For offshore transmission, they will be updated in our final decision document to reflect prevailing input parameter values at the time. For NEMO, they will be updated to reflect prevailing input parameter values at FID.

Table 1: Illustrative offshore IDC based on minded-to methodology

Offshore Transmission	Parameter	Low value	Source	High value	Source
A	Cost of debt (nominal)	4.38%	2-year average for A- and BBB-rated bonds - iBoxx Sterling Non-financial. Data used on a last twelve months basis - less one standard deviation	5.10%	As before but plus one standard deviation
B	Risk-free rate (nominal)	2.89%	10-year average of the 10-year UK gilt. On a monthly basis. Bank of England – less one standard deviation	4.92%	As before but plus one standard deviation
C	Market risk premium	4.40%	Credit Suisse Global Investment Returns Sourcebook 2013, Table 74	4.40%	As before
D	Equity beta	0.88	Hybrid comparator group assembled by Grant Thornton	0.88	As before
$E = B + (C \times D)$	Cost of equity (nominal)	6.74%		8.78%	
F	Gearing	40.13%	Hybrid comparator group assembled by Grant Thornton	40.13%	As before
G	Tax rate	23.00%	HM Treasury	23.00%	
$H = A \times F + E \times (1 - F) \times 1 / (1 - G)$	Pre-tax WACC (nominal)	7.00%		8.87%	

Table 2: Illustrative NEMO IDC based on minded-to methodology

NEMO	Parameter	GB value	GB source	Belgium value	Belgium source
A	Expected inflation	3.30%	ONS ¹¹	2.00%	ECB inflation target
B	Cost of debt (nominal)	4.84%	20-day average yield on iBoxx GBP Non-Financials 10+ BBB index	4.14%	20-day average iBoxx EUR Non-Financials 10+ BBB index
$C = (1+B) / (1+A) - 1$	<i>Cost of debt (real)</i>	1.49%		2.09%	
D	Risk-free rate (nominal)	3.90%	10-year average of the 10-year UK gilt. On a monthly basis. Bank of England	3.80%	10-year average yield on Belgium 10-year benchmark government bonds
$E = (1+D) / (1+A) - 1$	Risk-free rate (real)	0.58%	10-year average yield on UK 10-year benchmark gilts	1.76%	
F	Market risk premium	4.40%	Geometric mean equity return over bonds for 1900-2012 'World' category	4.40%	Geometric mean equity return over bonds for 1900-2012 'World' category
G	Equity beta	1.07	Comparator companies	1.07	Comparator companies
$H = E + (F \times G)$	<i>Cost of equity (real)</i>	5.31%		6.47%	
I	<i>Gearing</i>	36.1%	Comparator companies	36.1%	Comparator companies
$J = C \times I + H \times (1 - I)$	<i>Vanilla WACC (national basis)</i>	3.93%		4.89%	
K	Average vanilla WACC			4.41%	
L	Development risk premium uplift %			5.88% ¹²	
M	Construction risk premium uplift %			16.60% ¹³	
$N = K \times (1 + L + M)$	IDC			5.40%	

¹¹ Ofgem will ensure that this calculation is consistent with the RIIO Cost of Debt index

¹² Ofgem has converted Grant Thornton's proposed Additional Factor from a addition to the WACC to a multiplier to ensure consistency of application in both nominal and real terms

¹³ Ofgem has converted Grant Thornton's proposed Additional Factor from a addition to the WACC to a multiplier to ensure consistency of application in both nominal and real terms

5. Responding and Next Steps

Chapter Summary

This chapter outlines how to respond to this consultation, and the next steps we will be taking on IDC for NEMO and offshore transmission.

Responding to this consultation

- 5.1. Ofgem would like to hear the views of interested parties in relation to the issues set out in this document. We would especially welcome responses to the specific questions which we have set out at the beginning of each chapter heading and which are repeated below. Please also send us supporting evidence to substantiate your views.
- 5.2. Responses should be sent to:
- **Name:** Helen Curry
 - **Team:** Offshore Transmission
 - **Address:** Ofgem, 9 Milbank, London, SW1P 3GE
 - **Telephone number:** 0203 263 9904
 - **Email:** offshore@ofgem.gov.uk; cap.floor@ofgem.gov.uk
- 5.3. 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. 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 electronically, but written submissions are also welcome. Respondents are asked to put any confidential material in the appendices to their responses.

Questions for response

Question 1: Is the use of WACC and CAPM appropriate for calculating IDC here?

Question 2: Is our minded-to approach to accounting for risk bias for offshore transmission and NEMO appropriate?

Question 3: Do you agree with our minded-to approach of applying the IDC cap and rate for offshore transmission and NEMO?

Next steps

- 5.4. Once the consultation closes on 15 November, we will assess and take due account of the responses. We intend to publish our final decision for offshore transmission by January 2014, and for NEMO in the first quarter of 2014.
- 5.5. For Project NEMO, the IDC calculation will be applied to the project's opening RAV. For offshore transmission, a revision to the IDC cap for the regime will apply from 1 March 2014 or 1 April 2014 depending on when the decision is published. The new cap will be used for projects reaching FID after the date the cap is applied. For projects which have started accumulating IDC before the date of application, the new cap will apply to expenditure incurred after that date. This is in line with the current policy on IDC as outlined in the last IDC decision¹⁴.

¹⁴ <https://www.ofgem.gov.uk/ofgem-publications/51464/idc-decision-letter-final-version.pdf>.

Appendices

Appendix	Name of Appendix	Page Number
1	Summary of open letter responses	26
2	Glossary	28
3	Feedback questionnaire	31

Appendix 1 – Summary of open letter responses

→ The open letter consultation closed on Friday 21 June 2013. We received responses from 6 offshore wind farm developers (Centrica, DONG, E.ON, RWE, SPR and SSE) and 2 interconnector developers (NEMO developers and Transmission Investment).

Main messages

- 1.1. The respondents felt that we had identified the main **risks**. Stakeholders stated that capex complexity and technology risk are important, especially as market conditions mean the developers are bearing more of the risk than contractors, increasing likelihood of delays/cost overruns. This, in the context of an ex-post review, has heightened concerns over regulatory risk (risk of disallowance).
- 1.2. Concerning the proposed **methodology**, the respondents agreed that the CAPM is a good choice but highlighted that the choice of equity beta must reflect the project-specific risk. They argued that either there needs to be a discretionary top-up to the cost of capital or a comparator other than vertically integrated energy companies needs to be used. Historic returns, based on sale price, were suggested as an alternative measure given the absence of independently listed comparators.
- 1.3. A number of issues were raised about **financing considerations**. Some respondents noted that factors that influence the cost of capital (e.g. cost of equity dependent on market volatility) do not impact lending considerations. Project-specific risk and risks during construction, such as that for gearing, were cited as important considerations. Respondents stated that the ability to use project finance is important.
- 1.4. Respondents strongly supported a **fixed rate** of IDC set at the Final Investment Decision (FID) that remained stable for the duration of the construction phase. There were mixed views on whether there was scope for the rate to vary during the development phase before FID. Interconnector developers favoured one rate set for the development phase and another for the construction phase.
- 1.5. The most important **criteria** identified by the respondents are risk reflectivity, predictability and transparency. It was felt that flexibility is desirable but where it conflicts with predictability the latter should be prioritised due to financing considerations.
- 1.6. Respondents were unsure as to whether generator build offshore transmission projects and interconnector projects are sufficiently similar to OFTO build projects for this to be a suitable **comparator**. Questions were raised over

whether project-specific facts would be able to be isolated for generator build and OFTO build financing costs to be compared. Both interconnector developers suggested looking at historic returns based on asset sales.

Key differences between offshore transmission and interconnectors

- 2.1. The interconnector developers proposed that IDC for interconnectors should be a blended rate of development phase IDC (up to FID) and construction phase IDC. They stated that **development risk** is higher for interconnectors because the regulatory regime being developed is influenced by at least two governments, National Regulatory Authorities and European bodies.
- 2.2. Offshore developers suggested that IDC should continue to be paid at a risk-free rate during the period between the transmission assets becoming available to the handover of these assets to the OFTO, as the delay can be up to 18 months.

Other issues raised

- 3.1. Concerns were raised over the use of project finance in the IDC methodology as it cannot be secured in the development phase.
- 3.2. Respondents requested greater clarity of the definitions of cap and floor commencement for interconnectors and first energisation.
- 3.3. It was suggested that historic returns could be used an alternative to setting the IDC methodology using the CAPM. This would be the ratio between investment capital and asset sale prices following the successful completion of development or construction stages of the project.

Appendix 2 – Glossary

C

Capex

Capital expenditure.

Capital Asset Pricing Model (CAPM)

The primary IDC estimation methodology used.

CREG

The Belgian regulator for electricity and gas: *Commission de régulation de l'électricité et du gaz, Commissie voor de Regulering van de Elektriciteit en het gas*.

D

Developer

The person responsible for the construction of the transmission assets, either for offshore transmission or an interconnector.

E

EIB

European Investment Bank

Energy Infrastructure Package (EIP)

This was proposed by the European Commission in 2011 with the aim of promoting the completion of Europe's 'transport core network', the 'energy priority corridors' and the 'digital infrastructure'.

F

FID

Final Investment Decision.

G

GB

Great Britain.

Gearing

The ratio of debt funding to equity funding.

I

Interconnector

Equipment used to link electricity systems, in particular between two Member States of the European Union.

Interest During Construction (IDC)

The allowance for the cost of financing the development and construction of electricity transmission assets.

O

[Offshore transmission](#)

Offshore transmission is defined in the Electricity Act 1989 as 'the transmission within an area of offshore waters of electricity generated by a generating station in such an area'.

[Ofgem](#)

Office of Gas and Electricity Markets.

[OFTO](#)

Offshore Transmission Owner.

P

[PFI](#)

Private Finance Initiative.

[Project NEMO](#)

The proposed electricity interconnector between Belgium and Great Britain.

R

[RAV](#)

Regulatory Asset Value.

[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.

[Risk-free Rate](#)

The risk-free rate for a given period is the return on government bonds for that period.

[RPI](#)

Retail Prices Index.

T

[TR1](#)

Transitional Tender Round 1.

[TR2](#)

Transitional Tender Round 2.

[Transmission assets](#)

As defined in the Electricity Act 1989, transmission assets are '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 transmission operator in order for it to fulfil its obligations.

U

[UK](#)

United Kingdom.

[Uplift](#)

An additional factor added to the WACC to give the rate of IDC.

V

[Vanilla WACC](#)

The pre-tax cost of debt combined with the post-tax cost of equity.

W

[WACC](#)

Weighted Average Cost of Capital.

Appendix 3 – Feedback questionnaire

Ofgem considers consultation to be 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

Please send your comments to:

Andrew MacFaul
Consultation Co-ordinator
Ofgem
9 Millbank
London
SW1P 3GE

andrew.macfaul@ofgem.gov.uk