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The regulation of future electricity interconnection: Proposal to roll out a cap and floor regime to near-term projects

Consultation

Publication date: 23 May 2014

Response deadline: 18 July 2014

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Overview:
We are consulting on the regulation of new electricity interconnection projects. We propose to roll out a developer-led cap and floor regime to near-term interconnection projects and open an initial window for cap and floor applications. We are seeking stakeholders' views on the proposed regime design and regulatory assessment framework. In particular, we invite comments on the eligibility criteria, approach to cost assessment, application process and timing.

Context

Electricity interconnectors are the physical links which allow the transfer of electricity across borders. They have potentially significant benefits for consumers: lowering electricity bills by allowing access to cheaper generation, providing more efficient ways to deliver security of supply and supporting the decarbonisation of energy supplies.

Only a limited number of interconnectors have been built under the current regulatory framework. Therefore we have been evaluating and consulting on alternative regulatory options that would facilitate investment in interconnection where that is in consumers' interests.

This consultation sets out our proposal for there to be a new regulatory approach available for investment in new electricity interconnectors. It builds on the work to date on the potential cap and floor regulated regime for the proposed new interconnector to Belgium (the Nemo project). It also builds on our work on the planning and delivery of interconnectors as part of the Integrated Transmission Planning and Regulation (ITPR) project.

We envisage publishing our decision on a cap and floor for the Nemo project shortly, subject to finalisation of our approach with our partner regulator in Belgium and the project developers.

Associated documents

Cap and Floor Regime for application to project NEMO: Impact Assessment

Published: Dec 2013

Offshore electricity transmission and interconnector policy: minded-to position on interest during construction (IDC)

Published: Oct 2013

Cap and Floor Regime for Regulated Electricity Interconnector Investment for application to project NEMO

Published: March 2013

Preliminary conclusions of the regulatory regime for project NEMO and future subsea electricity interconnector investment

Published: December 2011

Cap and floor regime for regulation of project NEMO and future subsea interconnectors (86/11)

Published: June 2011

Open Letter on next steps from Ofgem's consultation on electricity interconnector policy

Published: September 2010

Electricity Interconnector Policy Consultation (12/10)

Published: January 2010

Open Letter: Update on the Integrated Transmission Planning and Regulation project

Published: Nov 2013

Integrated Transmission Planning and Regulation Project: Emerging Thinking

Published: Jun 2013

Contents

Executive summary

Electricity interconnectors can offer significant benefits to existing and future consumers. Our objective is to make sure that economic and efficient interconnection is delivered in a timely manner.

Regulation of interconnectors differs from our role in regulating the network in GB in that we need to agree our approach with the National Regulatory Authority in the connecting market. Different regulators may have different approaches and the situations of individual projects may vary. Furthermore the rules which govern the sale of interconnector capacity are still being developed, as are some of the relevant market rules (for example, relating to capacity payments). All of this means we will need to be able to vary our approach if there are good reasons to do so, in line with the objective above.

These proposals therefore represent a basis for discussions with other regulators, based on a market-to-market interconnection project where the costs and revenues are to be split 50:50 between GB and the neighbouring market. They also provide a structured process by which projects which are close to investment decisions can engage with us and gain clarity on their regulatory framework from the GB end.

We have developed these proposals to fit with the existing legal framework in GB and the EU. We will continue to consider how best to regulate interconnection investment in the longer term as part of our Integrated Transmission Planning and Regulation (ITPR) project, for which we expect to publish draft conclusions in September. As an alternative to this regulated model, developers can still seek exemptions from regulatory requirements.

Regime design

All projects under a regulated route would be subject to some restriction on revenues. The cap and floor regime we are proposing also provides for some protection against downside risks and so supports investment in interconnection. It builds on the model developed for the Nemo project and incorporates elements of the approach we have used for Strategic Wider Works under our RIIO-T1 price control.

We envisage developers providing set information in a pre-determined application window. Projects will be eligible for this window if they have a connection date before the end of 2020 and meet other proposed criteria. Our focus is on providing a framework for projects looking to make significant investment decisions in 2015. We will set out the process we envisage for new interconnector investment beyond this window in due course.

Following submission, we will assess whether each project is in consumers' interests based on the information submitted by the developers and our own analysis (akin to the 'needs case' process for Strategic Wider Works and in line with our impact assessment guidance). This will include an assessment of the efficient level of costs where we have the information to do so. For some projects this cost assessment may need to follow after our initial assessment of the needs case. If our final assessment

shows that a project is likely to benefit consumers then we would expect to grant a cap and floor arrangement.

Following this assessment, we would then envisage establishing a cap and floor on the revenues to which the developer is entitled, whether for the whole project in conjunction with the other regulator or just with respect to the share of the project owned by the GB licensee. Interconnector capacity would be sold in line with the requirements of European network codes – such as through market coupling arrangements. If this led to aggregate income, net of any firmness costs (costs of compensating parties who have purchased capacity that cannot be provided), which exceeded a pre-specified cap then the excess would be transferred to transmission customers. If income is below a floor level then there would be a top-up payment to developers funded by transmission customers.

The levels of the cap and floor will be set up front and remain fixed (in real terms) for the duration of the regime, subject to an availability incentive and unless specific re-openers are triggered. The regime would be set for 25 years and revenues assessed against the cap and floor every five years, with scope for more frequent assessments if necessary. The floor would be based on the cost of debt using a benchmark of yields on A and BBB rated debt, and the cap based on a benchmark cost of equity applicable to a generator. In both cases, we are setting out our methodology for the GB parameters and would expect to blend this with parameters from the neighbouring country where applicable.

Both the cap and floor would take account of our assessment of efficient costs. We expect our assessment of capital costs to be based on an assessment ahead of construction based on the proposed scope of works. Any uncontrollable costs resulting from changes to the scope of the works (eg due to weather) would be assessed following construction. Our assessment of operating costs will be based on an assessment as a project nears operation, subject to a potential re-opener to review future costs after 10 years of the project lifetime.

Next steps

Subject to consideration of consultation responses, we propose to make our decision to open an application window for a cap and floor for new interconnector projects as soon as practicable. We envisage a deadline for complete applications of the end of September if the application process and information we would be requesting remains broadly as indicated here. We therefore encourage developers to begin to consider their applications in parallel with this consultation. If material changes are needed, we will provide an update on content and timing as soon as possible.

We will then review the information and engage with neighbouring regulators and developers over the autumn and winter. Subject to the quality of information and progress with discussions, we could be in a position to make proposals for individual projects by the spring of 2015.

1. Introduction

Chapter summary

Interconnectors provide benefits to consumers, but the amount of interconnection between GB and other markets remains limited. This is in part due to challenges with the current investment regime. We are therefore proposing changes to the regulatory regime to encourage efficient investment in interconnectors.

Background and drivers for change

1.1. Electricity interconnectors[1] are the physical links which allow for the transfer of electricity across borders. They allow electricity to be generated in one market and used in another.

Benefits of interconnectors

1.2. Interconnection can provide significant benefits to consumers by:

- lowering electricity bills through allowing access to cheaper sources of electricity generation
- lowering electricity bills through providing alternative, cheaper ways to achieve secure electricity supplies, for example by connecting new providers of short-term balancing services to the System Operator (SO)
- supporting the decarbonisation of energy supplies by making it easier to manage intermittent renewable generation sources and locate low carbon generation where it is most efficient.

1.3. The level of benefit from a specific project will vary depending on a number of factors. These include the generation mix in the interconnected markets, the pattern of demand, and the costs of building and operating the cables.

1.4. In the European Commission's November 2012 Communication on the internal market[2], more interconnection between the UK and other EU Member States was considered a priority. Similarly, the Department of Energy and Climate

[1] For ease, we will refer to electricity interconnectors as 'interconnectors' in the remainder of this document.
[2] November 2012 Communication on 'Making the internal energy market work': http://ec.europa.eu/energy/gas_electricity/doc/20121115_iem_0663_en.pdf

Change (DECC) published a policy statement[3] in December 2013 supporting an appropriate increase in electricity interconnection capacity.

1.5. We agree that additional interconnection between GB and other markets can bring benefits to consumers and so want to put a regulatory framework in place that brings forward new investment where it is likely to deliver those benefits.

Extent of interconnection in GB

1.6. The GB electricity market currently has 4GW of interconnector capacity. This is made up of:

- 2GW to France via the Interconnexion–France–Angleterre (IFA) interconnector
- 1GW to the Netherlands via the BritNed interconnector
- 500MW to Northern Ireland via the Moyle interconnector
- 500MW to the Republic of Ireland via the East-West Interconnector.

Why the current regime does not deliver the right level of interconnection

1.7. At the moment, the regulation of interconnection is distinct from that of transmission in that interconnector developers are exposed to market (revenue) risk and so their views of the interconnector's profitability drive which projects are taken forward. Recent interconnector projects to the continent have been developed through developers bringing forward projects without any consumer underwriting, ie they do not receive any guaranteed regulated revenue and face the full downside risk related to the use of the interconnector.

1.8. Developers typically seek some protection from European requirements with regards to how they use their revenues or the basis on which capacity can be sold. Such protection has been provided through exemptions from European legislation, eg on third-party access, unbundling and use of revenues, and from certain licence requirements. This approach is set out in European

[3] Department of Energy & Climate Change Policy paper (17 December 2013) 'More interconnection: improving energy security and lowering bills': https://www.gov.uk/government/publications/more-interconnection-improving-energy-security-and-lowering-bills

legislation[4] and we intend to continue to review exemption applications on a case-by-case basis.

1.9. In approving exemption requests on projects to date, the relevant National Regulatory Authorities (NRAs) or the European Commission have imposed caps on returns to ensure that the developer does not receive excessive profits.[5]

1.10. An alternative approach, which is employed widely around Europe, is that the incumbent transmission system operator (TSO) will consider cross-border capacity needs as part of their overall assessment of transmission system developments and be responsible for building interconnectors. They receive a regulated return on such investment, underwritten by consumers, and are not exposed to variability in interconnector revenues. Under this route the projects generally have to comply with all aspects of European legislation. This route has been used for the existing interconnectors to Northern Ireland and Ireland which are underwritten by Northern Irish and Irish consumers respectively.[6]

1.11. While some projects continue to be developed in GB without consumer underwriting and through seeking exemptions, it has proven to be an increasingly challenging way to deliver further interconnection. Several factors, including the risks inherent in the exemption process, have resulted in only a limited amount of new interconnection. This led us to consider a new regulatory approach.

Our work to date

1.12. In 2010 we explored the need for change[7] and decided to develop a new 'Cap and Floor' regulated route for the proposed Nemo interconnector to Belgium.[8] In 2011 we set out our high-level principles for interconnection[9] and in 2013 consulted on more detailed parameters of the cap and floor regime for the Nemo interconnector.[10]

[4] New direct current interconnectors may, upon request, be exempted, for a limited period of time, from the provisions of Article 16(6) of EU Regulation 714/2009 and Articles 9, 32 and Article 37(6) and (10) of Directive 2009/72/EC. Exemptions from certain articles of EU legislation are reflected by switching off the relevant GB licence requirements.
[5] The European Commission imposed a cap on returns in the case of the BritNed interconnector. We, together with our French counterparts, have recently proposed a cap on returns for the proposed Eleclink interconnector. See our April 2013 decision letter for further detail: https://www.ofgem.gov.uk/ofgem-publications/87163/eleclinkdecisioncoverletter.pdf
[6] The East-West interconnector was initiated by the Irish TSO, EirGrid, and is wholly supported by Irish consumers. The Moyle interconnector is a mutualised company, wholly owned by Northern Irish consumers.
[7] https://www.ofgem.gov.uk/ofgem-publications/83477/interconnectorpolicyconsultation.pdf
[8] https://www.ofgem.gov.uk/ofgem-publications/59364/ofgem-next-steps-letter.pdf
[9] https://www.ofgem.gov.uk/ofgem-publications/59340/cap-and-floor-regime-regulation-new-subsea-interconnector-investment5.pdf
[10] https://www.ofgem.gov.uk/ofgem-publications/59243/cap-and-floor-regime-regulated-

1.13. In 2013 we also looked at how other interconnectors beyond the Nemo project could be regulated as part of our Integrated Transmission Planning and Regulation (ITPR) project consultation.[11]

Our objectives for interconnection regulation

1.14. We believe that the high-level principles for interconnection regulation that we established in 2011 remain appropriate for how we intend to regulate interconnectors.

1.15. Our high-level principles can be summarised in the following objective: 'We are aiming to bring forward timely, economic and efficient investment in interconnection where that is in the interests of existing and future consumers.'

Scope of this consultation

1.16. We have considered several regulatory options for investment in electricity interconnection.

1.17. We are proposing to make the developer-led cap and floor regime available to other near-term interconnectors in addition to the Nemo project.

1.18. This consultation sets out the basis for the cap and floor regime we propose to use for new interconnectors. We will keep this approach under review and will be flexible to varying our approach if there are good reasons to do so. We will consider any potential variations against our objective and principles of regulating interconnection.

1.19. In particular, variations could be as a result of discussions with the NRA in the connecting market. Different regulators have different approaches and so we will work to agree an approach on a case-by-case basis. It will be important to ensure that the regulation in both countries provides aligned incentives to maximise consumer benefits and works together to be fit for purpose for the particular markets that are being connected. Variations could also be needed to reflect the fact that the rules which govern the sale of interconnector capacity and other relevant market rules (eg relating to capacity payments) are still being developed.

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electricity-interconnector-investment-application-project-nemo.pdf

[11] https://www.ofgem.gov.uk/publications-and-updates/integrated-transmission-planning-and-regulation-project-emerging-thinking

1.20. In this consultation, we are seeking stakeholders' views on:

- our proposal to roll out the developer-led cap and floor regime to near-term interconnector projects (Chapter 2)
- the regime design and the assessment framework we will follow to grant cap and floor revenues, including cost assessment, the application process and eligibility (Chapters 3 and 4).

1.21. Our principal objective is to protect the interests of existing and future consumers. To achieve this and our other duties[12], we consider whether any regulatory requirement we are proposing to introduce is the best way to do this. We have assessed the impacts of the proposals in this document and set out why we consider them to be beneficial over the alternative leading options. We seek views on this assessment, including any impacts not covered. We intend to undertake detailed impact assessments when considering whether a cap and floor should be awarded to specific projects and we will normally consult on these.

1.22. Specific consultation questions for stakeholders are set out at the start of each chapter and are listed in Appendix 1.

1.23. Stakeholder views will inform whether and how we proceed with a roll-out of the cap and floor regime for future electricity interconnectors.

1.24. Our proposed next steps are set out in Chapter 5.

Interactions with other areas

1.25. We are consulting in the context of other work we are taking forward:

1.26. **The Nemo project** – we plan to publish our decision on the proposed cap and floor regime for the Nemo project shortly.

1.27. **Integrated Transmission Planning and Regulation (ITPR)** – our ITPR project is a review of the GB electricity transmission arrangements. Its aim is to determine whether the current system planning and delivery arrangements are appropriate to achieving a long-term efficient integrated transmission network – onshore, offshore and cross-border.

1.28. While we are proposing to roll out the cap and floor for near-term interconnector investment, we are considering how best to regulate interconnector investment in the longer term as part of the ITPR project. We are looking at issues including:

[12] For a detailed description of Ofgem's duties, please see:
http://www.ofgem.gov.uk//publications-and-updates/powers-and-duties-gema

- the role of the SO or potential other central coordinating body (or bodies), including in interconnection

- the regulatory regimes for investment in onshore and offshore transmission and interconnection, and whether there needs to be more flexibility between approaches

- how projects with multiple purposes, for example that include interconnection and a generation connection, should be treated.

1.29. We intend to publish draft conclusions on the ITPR project in September.

1.30. **Cross-border projects connecting non-GB generation to the GB market –** we propose that the cap and floor regime will apply to near-term investment in interconnectors which at the outset will exclusively connect the GB market with another market. At this stage we are not proposing that other transmission projects incorporating the connection of generation will be eligible for this regime. We have published an update letter alongside this consultation setting out our next steps on connections for non-GB generation.[13]

1.31. It is possible that in future, a change in use of an exclusively market-to-market interconnector to incorporate a direct connection to a generator could occur. We propose that market-to-market projects with this potential can be considered under the cap and floor assessment process detailed in this consultation.

1.32. Where developers wish to directly connect generation to an interconnector regulated through a cap and floor, this may constitute a re-opener in the cap and floor agreement and we propose to discuss this on a case-by-case basis with project developers.

1.33. Developers of near-term market-to-market projects may also want to design the project in anticipation of connecting generation in the future. We will consider whether anticipatory investment of this type should be included in our proposed needs case assessment and cost assessment on a case-by-case basis. We are open to discussing this with developers in advance of their submissions. When assessing such applications for a cap and floor we propose to consider how material the anticipatory investment is and whether there is likely to be a strong consumer impact if the project continues to be a pure market-to-market interconnector throughout its asset life.

[13] https://www.ofgem.gov.uk/publications-and-updates/update-regulation-transmission-connecting-non-gb-generation-gb-transmission-system

2. Proposals and policy assessment

Chapter summary

We propose to make a developer-led cap and floor regime available to near-term interconnectors in addition to the Nemo project. We think this approach can be implemented reasonably quickly, and could therefore incentivise economic and efficient projects in the near term that can deliver benefits for GB consumers.

Question box

Question 1: Do you agree that making the developer-led cap and floor regime available to near term projects would be in GB consumers' interests?

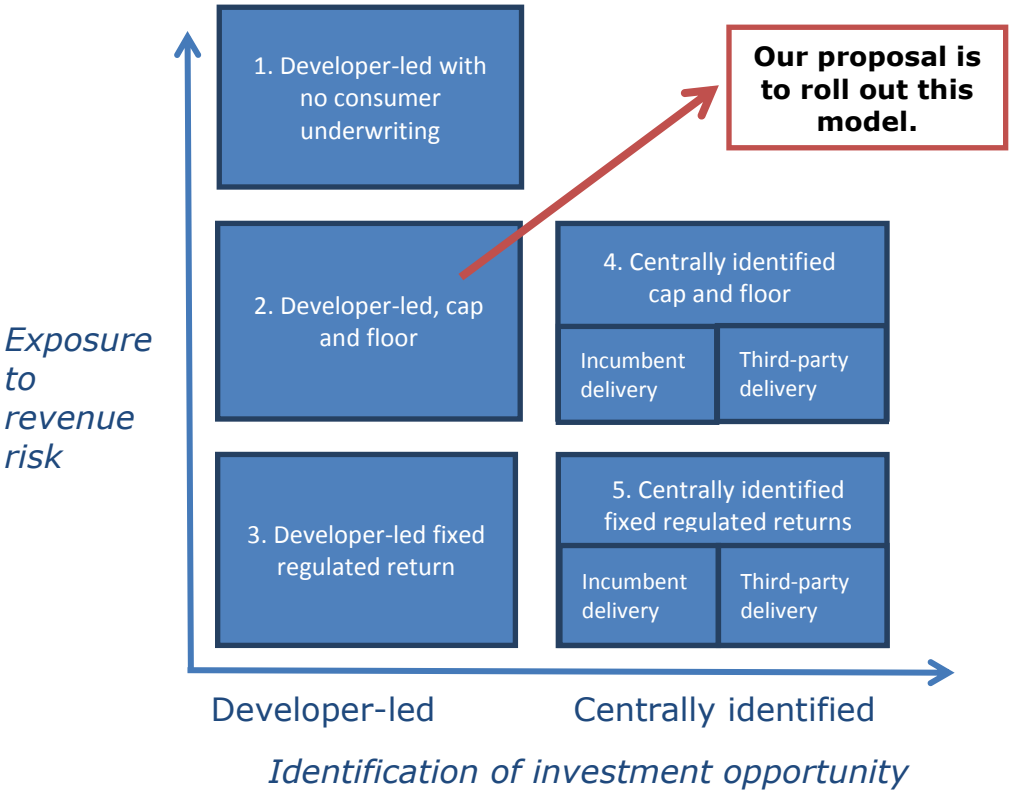
Summary of our proposals

2.1. We considered a number of regime options in our ITPR Emerging Thinking consultation (summarised in Figure 2.1). The developer-led cap and floor regime (Option 2) is our preferred regime for near-term projects.

2.2. We propose that new electricity interconnector projects ready to make significant investment decisions in the near-term should be eligible to apply for cap and floor regulated revenues.

2.3. Under the cap and floor regime, third party developers identify opportunities for additional interconnection and, if they go on to develop and construct them, receive the revenues from operating the interconnector. If their revenues exceed the cap then the surplus is returned to consumers. Conversely, if their revenue falls below the floor then consumers top up developers' revenue to the level of the floor. This is explained in more detail in Chapter 3.

Figure 2.1: Regime options for interconnector regulation



Reasons for our proposal

2.4. The cap and floor regime retains incentives for developers to bring forward projects that are likely to deliver benefits to consumers.

2.5. Under the current framework interconnectors derive their revenues principally from congestion rents, which are dependent on the existence of price differentials between markets at either end of the interconnector.

2.6. Figure 2.1 shows that developers' exposure to revenue risk is the highest under regime Option 1, where they have no guaranteed revenue. It is at the lowest under Options 3 and 5, where developers receive a fixed regulated return.

2.7. Under the developer-led cap and floor regime, developers remain exposed to the benefits their project provides. Under our proposals, this is because they will be exposed to variations in the revenues they earn from interconnection capacity sales and other sources (such as providing balancing services) between the cap and floor. As a result, developers are incentivised to invest in a project where the potential market value of interconnection and consequent revenues are greatest compared with their costs. This means there is also an incentive for developers to keep delivery and operation costs down. These incentives minimise the risk that consumers will have to provide any support

to the interconnector owner.

2.8. We believe there is benefit in introducing a floor. Interconnector projects that are likely to offer benefits to consumers may not be brought forward at the moment due to revenue uncertainty (including that based on policy risk). The floor insulates the developer's exposure to the full potential downside, partially reducing the risk of the investment. It also provides less consumer underwriting than a traditional fixed regulated approach.

2.9. To compensate for the risk that consumers are underwriting and to avoid excessive returns to the developer, the developer's upside is also capped, with excess revenues above the cap returned to consumers.

2.10. The developer-led cap and floor regime would not need legislative change to implement and so we could introduce it reasonably quickly. It could therefore facilitate near-term investment by developers who have mature proposals for new interconnectors. Conversely, Options 4 and 5 would take longer to implement (as they would likely require legislative changes) and so would delay investment in new interconnection, to the detriment of consumers.

2.11. Previous consultation respondents have been broadly in favour of rolling out the cap and floor to future projects.

Addressing the challenges of Option 2

2.12. Because Option 2 provides consumer underwriting through the floor, we intend to undertake robust project assessments to ensure that only projects in consumers' interests are awarded a floor. The proposed assessment framework is described in Chapter 4.

2.13. Under a developer-led approach the developer might not take into account any impact on investment needed to reinforce the onshore network as a result of the project. We propose to address this through evaluating the overall efficiency of the connection location as part of our assessment framework.

2.14. In the longer term, there are questions regarding whether a developer-led cap and floor regime can effectively support efficient levels of investment in interconnection. Developers may not be incentivised to invest up to the optimal level of capacity that would be in consumers' interests, particularly if some of the benefits to consumers (such as security of supply) would not be fully reflected in developers' potential revenues. In addition, interconnectors may become more complex (eg potentially also connecting to offshore wind farms or forming offshore grids or hubs) which may be more efficiently realised under alternative regulatory approaches.

2.15. We do not think that the challenges of Option 2, or the benefits of discounted other options (set out below), outweigh its likely benefits in being able to support efficient interconnector investment in the near term. We will consider these issues further when developing our draft conclusions on the longer-term regulatory treatment of interconnection as part of the ITPR project.

Other options

2.16. Other regulatory options we have considered are summarised in Figure 2.1. On the left of Figure 2.1, the developer identifies the opportunity and makes the decision to invest. Our role would be to approve or reject the application for an exemption, cap and floor or regulated return (as well as setting appropriate conditions and revenue parameters etc).

2.17. On the right of Figure 2.1, a central body identifies which opportunities should be taken forward. There are two distinct delivery options under central identification – the interconnection could be delivered by an incumbent transmission owner (TO) or the delivery party could be selected via a competitive tender.

Exemption route remains open

2.18. **Option 1** (the developer-led route without consumer underwriting) is provided for in EU legislation through the exemption process and will remain open for developers. We will consider exemptions on a case-by-case basis.

Discounted options for near-term interconnection investment

2.19. We do not think **Option 3** (the developer-led fixed regulated returns regime) has any significant benefit, as developers would not be incentivised to ensure they only bring forward good projects if they were not exposed to the benefits a project provides.

2.20. **Both Options 4 and 5** (the centrally-identified options) could take some time to implement as they would require changes to set up or give additional responsibilities to the central body that would be responsible for identifying what interconnection should be taken forward. This could have a significant negative impact on consumers as it would delay investment in new interconnection.

2.21. In addition, we do not think **Option 4** (the centrally-identified cap and floor) would have significant benefits. Under this option, having developers take on the risk that the benefits of the project would be different than expected (eg if they are exposed to the revenues earned by the interconnector) would be inefficient if it is the central body that identifies and takes the decision on whether to go forward with a project.

2.22. **Option 5** (the centrally-identified fixed regulated returns regime) may be able to support efficient levels of investment in interconnection in the longer term. However, this needs further consideration. In particular, further analysis is needed on which party would identify which interconnection opportunities should be taken forward, and how effective they would be likely to be in that role. The relative benefits of incumbent delivery or delivery by a third party selected via competitive tendering also need to be considered.

3. Cap and floor regime design

Chapter summary

This chapter describes the proposed cap and floor regime. The regime design builds on that developed to date for the Nemo project. This chapter also explains our thinking on the cost assessment process, which is a key part of setting the cap and floor levels.

Question box

Question 2: What are your views on the cap and floor regime design?

Question 3: What are your views on our proposed approach to the cost assessment process?

Question 4: Where do you think we may need to be flexible to accommodate the specifics of different projects and other national approaches?

3.1. We propose to roll out the cap and floor regime for electricity interconnector investment in the near term. We are seeking views on the specifics of this regime.

3.2. This chapter sets out an overview of the regime with more detail provided in Appendix 2. It also sets out our approach to setting cap and floor levels and cost assessment.

Overview of the cap and floor regime

3.3. This is a regulatory regime with incentives. The cap and floor regime sets a maximum (cap) and minimum (floor) level to the revenues accrued by interconnector developers.

3.4. Developers will sell the capacity of their interconnector in line with the requirements of European network codes. Their principal source of revenue is likely to be through congestion rents, including those earned through market coupling arrangements, whereby the capacity on interconnectors is allocated according to price differentials between the two connected markets.

3.5. The width between the cap and floor is designed so that developers are exposed to the benefits provided by the interconnection and so are incentivised to identify and develop projects in a way that maximises them. Unless the cumulative revenues during the assessment period are above the cap or below the floor, no payments are made to developers on behalf of consumers and developers do not return revenues to consumers.

3.6. The cap provides an investment route that ensures projects are compliant with Use of Revenues requirements in European legislation[14], and allows developers to receive appropriate but not excessive returns. Granting projects a floor underwritten by consumers reflects that it is in consumers' interests for more interconnector capacity to be built. Granting a floor is therefore contingent on our assessment of the benefits a project confers to consumers.

3.7. The proposed cap and floor regime is a cost-based regime. Both the cap and the floor will be determined through applying financial parameters to the efficient costs of developing and operating a project.

3.8. The levels of the cap and floor will be set up front and remain fixed in real terms (ie only increasing with inflation) for the 25 year duration of the regime unless specific re-openers are triggered. The 25-year length of the regime aims to provide a clear, long-term framework to support investment. We will assess outturn interconnector revenues against the cap and floor levels every five years to see if the cap or floor has been triggered. We intend to net off firmness costs[15] from interconnector revenues for the purposes of our assessment. We believe this provides appropriate incentives for developers to minimise interconnector unavailability, while also recognising that the rules regarding firmness are determined through European legislation. We therefore think it appropriate to partially expose developers to these costs.

3.9. If revenues fall below the floor over an assessment period then the interconnector developers will be paid by the National Electricity Transmission System Operator (NETSO)[16], which will in turn recover the costs through increased transmission charges to transmission users. This is only paid if the interconnector has been sufficiently available over that time. The floor supports investment, as it helps overcome some of the uncertainty associated with interconnector revenues. This includes uncertainties driven by wholesale price fluctuations between markets, which can be affected by changes in market fundamentals and changes in policy.

3.10. The cap limits the maximum revenue that developers can receive. This doesn't limit the actual revenue generated by trading on the interconnector, with any revenue above the cap in an assessment period being returned to the NETSO, who will in turn reduce charges for transmission users.

3.11. Each assessment period will be considered separately. Any payments due to the floor or cap being triggered in one period will not affect future periods, and outturn revenue earned in one period will not be taken into account in future periods.

[14] Article 16(6) of European Regulation 714/2009 describes how revenues generated from interconnector capacity allocation should be used.
[15] Costs of compensating parties who have purchased capacity on the interconnector that for some reason cannot be provided, for example because of an outage.
[16] This process will need to be formalised through licence changes.

3.12. The rest of this chapter discusses key aspects of the regime design, with a summary provided in Figure 3.1 below.

Figure 3.1: Summary of our high level regime design

High level regime design summary	
Regime length	25 years.
Cap and floor levels	Levels set at the start of the regime and remain fixed in real terms for 25 years from the start of operation. Based on applying mechanistic parameters to efficient costs: a cost of debt benchmark will be applied to give the floor, and an equity return benchmark to give the cap.
Availability incentive	The cap will vary by +/- 2% depending on performance against an availability target. The floor will only apply if a minimum availability threshold is met.
Assessment period (assessing whether IC revenues are above or below cap/floor)	The base case is 5-year assessment periods. To ensure the commercial viability of projects, there will be the option of within-period annual adjustments where this is justified. These will allow developers to recover revenue during the assessment period but will still be subject to true-up at the end of the assessment period.
Mechanism	If revenue is between the cap and floor, no adjustment is made. Revenue above the cap is returned to consumers and shortfall of revenue below the floor requires payment from consumers (via transmission charges).
Assessment of efficient costs to inform cap and floor levels	We will assess efficient capital expenditure (capex) costs ahead of construction, with limited, specific re-openers. Similarly, we will assess operational expenditure (opex) costs ahead of the project becoming operational with limited re-openers. We do not propose any sharing factors.

Setting the cap and floor levels

3.13. The cap and floor regime provides a return on investment at both the cap and floor. We are proposing a mechanistic approach and to base cap and floor returns on separate return benchmarks, rather than a single one. We are setting out our methodology for the GB parameters here and would expect to blend this with parameters from the neighbouring country where applicable.

3.14. We propose that the cap and floor will be set so that an efficient developer that meets our cost expectations and performance targets:

- Will be able to recover its investment in eligible assets, a rate of return on its net capital investment based on a cost of debt benchmark determined by the NRAs and its efficient operating costs at the revenue floor.

- Will be able to recover its investment in eligible assets, a rate of return on its net capital investment based on a cost of equity benchmark determined by the NRAs and its efficient operational costs at the revenue cap.

3.15. The cost of debt benchmark would be assessed on a 'spot' basis using a benchmark of yields on A and BBB rated debt. This aims to provide a sensible benchmark for reference to a range of capital structures and financing routes, and does not reflect the cost of debt or equity of particular project developers. The levered cost of equity would be assessed with reference to a 'moderately geared generator'. This is covered in more detail in Appendix 2 and we invite views on our proposal to fix an equity beta of 1.25.

3.16. Setting the revenue floor with reference to the cost of debt on the full eligible costs provides a foundation for more highly geared financing structures (compared to only applying the cost of debt to a portion of eligible costs). This increases the range of potential developers that could bring forward projects, which in turn supports competitive pressure and benchmarking.

3.17. In the worst case where interconnector developers receive the floor, a reasonably geared project will be able to service its debt and make a positive return (at the cost of debt) on its equity. As this limits the potential downside risk to the developer, we propose to undertake a robust project assessment to ensure that only projects which are expected to bring material consumer benefit qualify for a cap and floor approach.

3.18. Setting the cap with reference to a moderately geared generator aims to provide a level of return that is commensurate with the risk faced by developers. This also ensures that developer revenues are used in line with the principles set out in European legislation.

Potential revenues from the GB Capacity Market

3.19. DECC is continuing to work on developing a detailed policy solution which would allow the participation of interconnected capacity in the Capacity Market (CM) auctions from 2015. It is still to be determined whether non-GB generators or interconnectors would hold capacity market agreements, and therefore be the party receiving capacity market payments. Depending on the final policy design, there is likely to be interaction between our proposed cap and floor regulatory mechanism and any payments that may accrue to interconnector developers as a result of the participation of interconnected capacity in the CM.

3.20. Our initial thinking is that any revenues accruing to developers as a result of capacity payments to interconnected capacity would be treated in the same way as other interconnector revenues, ie they would count towards whether overall revenues exceed the cap or the floor. We expect that capacity payments would reduce the likelihood of interconnector revenues being below the floor in an assessment period and would increase the likelihood of these being above the cap. If the revenue stream from the CM meant that revenues in an assessment period were above the cap, these revenues would be returned to consumers.

3.21. We are in close discussion with DECC on these issues. We will continue to consider the interactions and firm up our views as DECC progresses towards a policy solution. We aim to ensure that the principles and operation of the cap and floor regime and Capacity Market are consistent and do not create any misaligned incentives. We are open to discussion with interested parties on these issues.

Availability incentive

3.22. We propose there will be mechanisms to ensure developers have incentives to maintain interconnector availability if they expect revenues to exceed the cap or fall below the floor in any given assessment period.

3.23. Projects will be subject to a symmetric availability incentive at the cap that provides a revenue adjustment of +/-2% around a target level. At the floor, there is a minimum availability threshold of 80% that must be met each year for the floor to be awarded (availability below this level would need to be demonstrated as out of the project's control for the floor to be awarded).

3.24. The levels of target availability are likely to vary on a project-specific basis to take into account the technical design of individual interconnectors. This will follow a methodology developed for us by SKM for the Nemo project.[17]

[17] SKM's report, 'Calculating Target Availability Figures for HVDC Interconnectors', is available at: https://www.ofgem.gov.uk/ofgem-publications/59247/skm-report-calculating-target-availability-figures-hvdc-interconnectors.pdf

Assessing whether the cap or floor has been triggered

3.25. Once the interconnector is operational, every five years we will assess outturn interconnector revenues against the cap and floor levels to see if the cap or floor has been triggered.

3.26. Each assessment period will be considered separately. Any payments due to the floor or cap being triggered in one period will not affect future periods, and outturn revenue earned in one period will not be taken into account in future periods. This provides project developers with certainty around their revenue stream and also ensures that project developers are incentivised to maintain interconnector availability over the whole regime.

3.27. We propose introducing a within-period annual adjustment which could allow developers to receive the floor payment where this is required within the five year assessment period. Any such adjustments would be made Net Present Value (NPV) neutral at the end of the period. This may be important for project financed projects to be realised.

3.28. To ensure the commercial viability of projects, the length of any lag between the triggering of a within-period adjustment and the actual payment to developers may need to be shorter than the default two years for any end of period payments. We expect to work with developers and NGET to establish whether this is necessary.

Cost assessment approach

3.29. The role of the cost assessment process is to examine the efficiency of capital expenditure (capex) and operational expenditure (opex) associated with the project. The cost assessment for capex is designed to identify the efficient investment in a project's eligible assets, and the assessment for opex to identify a project's efficient operating costs. Both are key elements in determining the levels of the cap and floor. Our approach to cost assessment will need to align with developers' project milestones and provide the basis for an informed investment decision.

Assessment of capex

3.30. We have considered three different potential approaches for assessing the efficient level of capex costs that would feed into the cap and floor:

- **Early cost assessment –** Under this approach we would assess the projected capex when the developers had reached an advanced stage of their tendering process (ie before construction). We would set what we consider to be an efficient level based on the information available at this time and this would feed into the cap and floor calculations. This is similar

to the ex-ante approach used for Strategic Wider Works assessments under RIIO-T1.

- **Late cost assessment –** Here the main review of costs would take place after construction, ie when final outturn costs are known. The cap and floor would be set based on our efficiency assessment of these outturn costs. This is similar to the ex-post approach used for offshore transmission assets.

- **A hybrid approach combining elements of the early and late cost assessment** – Under this approach we would undertake an early assessment for any costs already incurred (eg development costs) and for those associated with the proposed scope of construction works (this would predominantly cover the Engineering, Procurement and Construction (EPC) contracts to deliver the assets). This early assessment would be used to set a figure for eligible capex costs. Any changes to the scope of the works (eg due to weather or unfavourable sea bed conditions) would be assessed ex post. If these additional costs had been efficiently incurred and were due to factors outside the control of the developers then the eligible costs would be updated through a re-opener.

3.31. We have also considered whether it might be appropriate to use different approaches for setting the cap and floor. For example, the floor could be set using an early cost assessment approach (which would protect consumers from underwriting any additional costs incurred during construction) and the cap could be set using a late cost assessment approach (which would allow developers to retain the upside return potential).

3.32. We think that the hybrid approach is appropriate for use in the cap and floor regime for the following reasons:

- A pure early cost assessment approach would expose developers to significant risks from any unexpected costs that may arise outside of their control. We think that this would likely deter investment and would not be in the interests of consumers.

- A pure late cost assessment approach would give developers very little certainty ahead of making their investment decision. They would be faced with the risk of placing significant contracts that could be determined as inefficient ex post. Again, we think this could result in a suboptimal level of investment in interconnection.

- The hybrid approach gives the developers certainty over how costs incurred to date will be treated and the regulator's views on their contracts as they stand at the time of making the investment decision. An ex-post assessment of any changes to the scope protects the developers against risks that are outside of their control. We think this approach fits well with the incentives on interconnector developers (they have a natural incentive to minimise costs, so that they maximise returns based on the congestion rents they can earn) and gives them a sound basis on which to make their final investment decisions. It also means that we can make our

decision on whether a project is likely to create consumer benefit and so should receive a cap and floor based on a robust assessment of costs.

3.33. There may be certain situations where our proposed hybrid assessment approach is not an appropriate option, eg if regulators in the connecting markets have a strong preference for ex-post assessment. In such situations we would retain flexibility in our approach where we believe this to be in the interests of consumers.

3.34. If developers do not consider that the hybrid approach is appropriate for their project, we would expect a detailed rationale for this and why another approach would better meet our objectives. Indicative costs will need to be provided to inform the initial project assessment (discussed further in the next chapter) in any case.

3.35. We seek stakeholder views on our preference for a hybrid approach combining elements of early and late cost assessment.

Capex re-openers

3.36. As set out above we consider it is necessary to put in place a specific re-opener mechanism to deal with events during construction that change the scope of the required works. These events would need to be outside of the control of developers, eg extremes in weather or unfavourable sea bed conditions. We would expect to evaluate these towards the end of the construction period. We welcome developers views on what items would be appropriate to include within this mechanism and the justification for them.

3.37. We would also want to examine any changes that occurred between our early and late cost assessments to reflect potential capex savings – for example, if final contract costs were lower than those suggested by tender information examined at the early cost assessment.

Sharing factors

3.38. A sharing factor for under- and overspend on capital expenditure is included in the regulatory regime for onshore assets under the RIIO arrangements (including for SWW projects) so that consumers share any under- or overspend against baseline forecasts. We do not think such a mechanism is necessary for the cap and floor regime for the following reasons:

- Developers already have a natural incentive under the cap and floor to minimise their costs in order to maximise their returns.
- Changes to the scope of works due to factors outside the control of the developers will be assessed ex post as part of a re-opener mechanism.

3.39. We welcome views on the use of sharing as part of the cap and floor regime.

Interest during construction

3.40. In our Nemo assessment interest during construction (IDC) was used to capture the financing costs of the developer during construction.

3.41. Under the proposed approach for the cap and floor regime, revenues will only be recovered once an interconnector is operational. It is from this point that the cap and floor would start to operate. We continue to see the need for IDC to ensure that a difference in timing between costs being incurred and the regime taking effect is reflected in the cap and floor. Further details of our proposed approach are set out in Appendix 2, including the use of uplifts to reflect the uncertainties associated with a new regulatory regime.

Assessment of opex

3.42. The approach to cost assessment of opex will take the form of an ex-ante assessment. We propose it would take place shortly before the operational phase of the project. This means that we would not undertake a detailed review of these costs as part of our setting of the provisional cap and floor, though we would still require early estimates as part of our initial project assessment.

3.43. Given the difficulty of forecasting opex costs over the duration of the cap and floor period we consider there may be a case for a re-opener to review opex costs after ten years of operation. This would help to ensure any step changes in technology or interconnector operation could be reflected in the allowed level of opex. We envisage we would use benchmarking against the operating costs of similar projects to inform such assessments.

3.44. We are also proposing specific cost pass through items if particular events occur, such as property tax/rates changes. These are described in more detail in Appendix 2.

3.45. Given these uncertainty mechanisms we do not propose that there will be sharing factors for opex.

Re-openers for policy or regulatory changes

3.46. We do not propose including a specific re-opener for policy or regulatory changes. We consider that the floor provides sufficient protection from such changes and that it would not be appropriate for there to be specific re-openers.

Tailoring the cap and floor to different projects

3.47. Regulation of interconnectors differs from our role in regulating the transmission network in GB in that there is a need to agree our approach with the NRA in the connecting market. We recognise that some elements in our

proposals may need to vary depending on discussions with key parties in the partner country, as different regulators may have different approaches. As noted in paragraph 1.19, the proposals we set out here are a basis for discussions with neighbouring regulators in respect of specific projects. We would only expect to vary our approach if there are good reasons to do so, in line with our overall objective for regulating interconnection.

3.48. For the Nemo project, the cap and floor regime has been developed to apply to the project as a whole. However, we may need flexibility in the regime if the connecting country requires a different regulatory approach. An alternative approach could be for the cap and floor regime to apply to half the project's costs and revenues (accounting for the GB licensee's share of the interconnector). In such a case, the cap and floor might work best if the project is structured not as a joint venture between the GB and partner developers but with each partner owning their side of the line. We would welcome further discussions with interested parties on how different projects could fit with our proposed regime.

3.49. The basis for the cap and floor we have set out assumes that costs and revenues will be shared 50:50 between the GB and partner developers. Cost sharing between partners may not always be equal, depending on the distribution of benefits that would be expected. Where such projects are proposed and the differential distribution of the benefits is material, we envisage that the proportion of costs underwritten by consumers at each end of the interconnector could be determined by applying cross-border cost allocation principles.

4. Assessment framework and process

Chapter summary

This chapter explains how and when we intend to make the cap and floor regime available to near-term projects. It contains our proposals for application, eligibility, initial project assessment and final project assessment stages of the cap and floor assessment framework.

Question box

Question 5: What are your views on the framework and processes set out in this document?

Question 6: What are your views on the timing and the information that we would require developers to submit?

Question 7: What are your views on our proposed eligibility test and the specific provisions that we are minded to include in such a test?

Question 8: What are your views on how we intend to assess projects at the initial and final project assessment stages?

Question 9: What are your views on the need for and timing of future windows?

Question 10: What are your views on the options to protect consumers from the risk of a needs case changing between our decision to award a cap and floor and a project's final investment decisions?

High-level framework, timelines and processes

4.1. Compared to the status quo, our approach to allow new, near-term interconnectors to apply for cap and floor revenues could lead to more interconnection. This could lead to substantial benefits to consumers, though there is also scope for significant costs given that consumers would be providing some underwriting. Our proposed assessment framework will help ensure that only economic and efficient projects which are in consumers' interests are granted cap and floor regulated revenues.

4.2. We are consulting on the general framework for assessing interconnector project proposals (applications, eligibility, submission information and assessment) and the timing of this process. We propose the framework takes a gateway approach as shown in Figure 4.1, below.

4.3. We will be looking to open the first application window as soon as possible following this consultation, subject to our consideration of responses. We envisage a deadline for complete applications of the end of September if the application process and information we would be requesting remains broadly as indicated here.

4.4. We are only proposing one window at this point as our focus is on projects seeking to make significant investment decisions in 2015. We invite views from stakeholders on the need for and timing of this and future application windows based on, for instance, the maturity of a project.

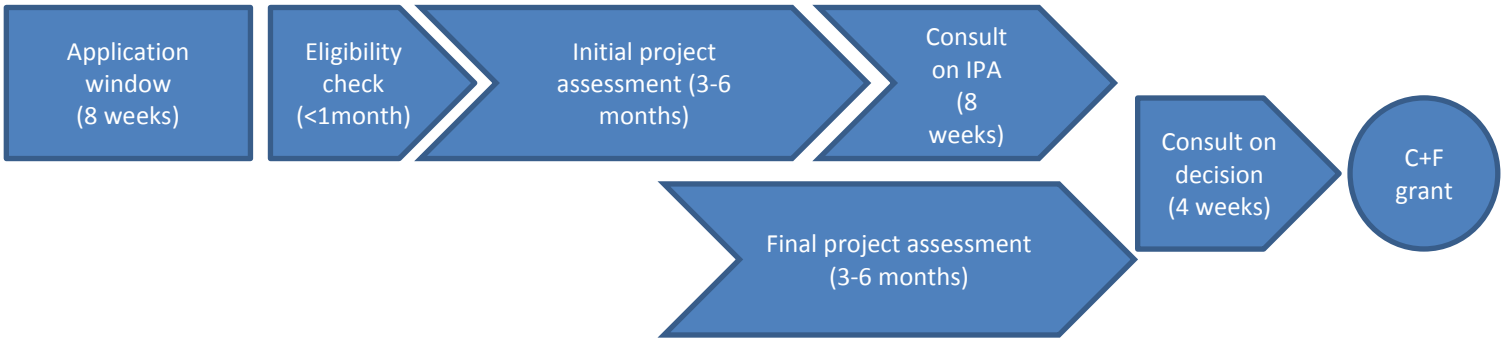
4.5. Developers seeking to apply will need to submit necessary application information by the end of the window. After this, we propose we would first undertake a check of whether all applications meet the eligibility criteria, including whether developers have supplied all necessary information.

4.6. Once that is complete, there are two steps: initial project assessment and final project assessment. First, we will assess the projects and their relative benefits, considering the impacts of different combinations of projects being built (the initial project assessment). This will be similar to the 'needs case' process for Strategic Wider Works and in line with our impact assessment guidance. Second, we will assess a project's costs in detail to provide a firm basis for making our final decision on providing a cap and floor and to inform the cap and floor levels (the final project assessment).

4.7. We would run both these stages in parallel where there is sufficiently robust information submitted. Some projects, which have not undertaken detailed procurement and tender activity, may have less detailed costs estimates. We propose we would not undertake the final assessment of the project and its costs until we have this information.

4.8. The time the process takes will depend on a number of factors, including the quality of the developer's submissions and the complexity of interactions with regulators from other countries. As a guide, we might expect the timing of each stage to progress as shown in Figure 4.1 below.

Figure 4.1: Our proposed cap and floor assessment framework



4.9. The timings in Figure 4.1 are only indicative and, as noted above, the timeline could be faster or slower depending on the project. If the final project assessment were run alongside the initial project assessment then we envisage there could be only one consultation period.

Application process

4.10. We think it is best to have a formal application process for cap and floor treatment. This should ensure developers have clear sight of what we will require in order to assess projects for a cap and floor regime, and how this fits with their existing project plans. Equally, we expect this to result in higher quality submissions.

4.11. We have examined three main options for an application process. These are discussed below.

Proposed approach – an application window

4.12. Our preferred approach is an application window. This would involve projects applying during a pre-defined period. Any developers seeking cap and floor regulation would submit project proposals to us, along with sufficient information and analysis to demonstrate that their proposed project is in GB consumers' interest. The window will open for a set amount of time.

4.13. An application window has the advantage of allowing us to assess multiple project submissions in parallel and consider the interactions between them. This allows us to make a decision on whether all, some or none of the projects are in the interests of consumers. It could also create some competitive pressure on developers, since if our assessment were to show not all applications should be granted a cap and floor then we would only award one to those projects that offered best value.

4.14. We think an application window is also of benefit to developers as it provides them with clear timelines to work to.

4.15. We propose to open the first window on publication of our decision document, which will follow this consultation. We envisage a deadline for complete applications of the end of September if the application process and information we would be requesting remains broadly as indicated here.

4.16. We seek stakeholder views on the need for future windows and their regularity. Our current proposal is limited to a single window at this stage. However, we recognise the need to allow developers to build regulatory approval into their project timelines. Our approach to future windows is also subject to our conclusions on the longer-term approach to interconnection as part of our ITPR project.

Other options considered

Alternative 1: Case-by-case applications

4.17. A case-by-case or ad-hoc framework would set out the principles and submission information required, for developers to then come forward for cap and floor treatment on a first-come-first-serve basis. This might resemble the process followed for Strategic Wider Works projects.

4.18. This would be the strongest option for maintaining the developer-led aspect of the regime. Developers could choose when to come forward, allowing flexibility and meaning regulatory treatment could be built into their project plans on an individual basis.

4.19. However, while a case-by-case approach may be convenient for developers, we think there is merit in comparing projects, as the needs case for interconnectors can be in competition. This would allow us to take a view on whether all projects coming forward in a given period are in GB consumers' interest – and if not, which of the projects would jointly offer consumer benefits. This would not be possible under a case-by-case approach.

Alternative 2: Invite applications for a pre-determined capacity level

4.20. This would operate in a similar way to an application window but with a set amount of capacity that could qualify for a cap and floor being pre-determined. A certain amount of new interconnector capacity could be determined as beneficial and interested developers could submit binding offers for set capacity values (eg 1GW of a 4GW total). There could be a strong role for competition, but equally projects may not be competing if submissions equalled less than the total amount of capacity on offer. Such an approach would give Ofgem a leading system planning role (ie setting the pre-determined capacity level) and may detract from the benefits of a developer-led approach (where the market determines the efficient amount of incremental capacity).

Submission information

4.21. The sort of information required from developers in order to be granted a cap and floor is set out in the subsections below.

4.22. Further guidance on submission information and assessment is set out in Appendix 3. The onus will be on developers to provide a high quality and complete submission and we are open to discussions with interested parties on what is required from developers. We will review the quality of submissions once the application window has closed. Proposals may be rejected if they do not meet the required standard.

Eligibility stage

4.23. Any framework for applications from developers for cap and floor treatment will benefit from a minimum eligibility threshold for projects. This will ensure only projects come forward that are sufficiently mature such that they are looking to make significant investment decisions soon, and will have a sufficiently developed needs case to support an effective assessment process.

4.24. Eligibility criteria will enable us to quickly determine which projects are or are not suitable for consideration in a given window. We are consulting on the main criteria to include. Our proposed criteria are:

- interconnector licence (granted or application duly made)
- connection date in place to provide exclusive market-to-market interconnection before the end of 2020
- detailed and realistic project plan
- submission information complete.

4.25. We set out further detail on these, including our rationale for them in the following paragraphs.

Interconnector Licence

4.26. We expect that projects coming forward will have been granted (or have applied for) an interconnector licence. This process is relatively straightforward and currently takes place reasonably early in the development of many interconnector projects.

Connection date before the end of 2020 for market-to-market interconnection

4.27. We consider a GB connection agreement to be an essential indicator of project maturity. We propose to consider projects eligible if they have an agreement to connect before 31 December 2020. We consider this date should capture projects that need to make significant investment decisions shortly. We do not think projects seeking to connect beyond this date will be certain enough or have a sufficiently developed business case to support a robust project assessment. We welcome views on this proposed date.

4.28. We are currently only proposing to make the cap and floor regime available to projects that will be exclusively market-to-market interconnection at the outset, and not also connecting either offshore or non-GB generation. Further detail on this is provided in Chapter 1.

Detailed and realistic project plan through to operation

4.29. We will need clear evidence that any projects will be able to meet their connection dates. This will include evidence of their planned approaches to achieving necessary consents, procurement, investment decisions and construction. In certain circumstances we may decide that projects are not eligible for assessment if project plans appear unrealistic or inadequately detailed. We expect project plans to set out the key milestones through to operation in sufficient detail.

Submission information complete

4.30. Part of our eligibility stage will involve a high-level check of whether project submissions have provided all the necessary information to inform our assessment. If project submissions are not complete we propose a single round of clarifications whereby we would contact the developers to request the additional submission information. We see merit in limiting this clarification step and do not expect that this would take longer than a week. This stage is aimed at making sure projects have properly submitted all

information, rather than guiding projects to allow them to undertake extra work that will inform the assessment stage.

4.31. We are looking for views on whether these criteria are appropriate and whether there are any other criteria we should consider.

4.32. We expect the eligibility phase to take less than one month from the close of the application window.

Initial project assessment (IPA) stage

4.33. The approach taken for the Nemo project has enabled us to assess the merits of the project and consider the impacts of the project going ahead under a cap and floor regime.[18] We see merit in formalising this process to allow more straightforward comparison between projects and to reduce the regulatory burden associated with more tailored bilateral negotiations with developers.

4.34. The initial project assessment will be our first assessment of the needs case of projects, ie assessing whether there a project is likely to be in consumers' interests based on the projected costs and benefits. This will act as a gateway to our final project assessment. We will only progress projects to the final stage which, based on the initial project assessment, are likely to be in the interests of consumers.

4.35. We expect that we will assess projects on the basis of developers' submissions including the elements discussed below.

- Quantified Cost-Benefit Analysis (CBA) against a plausible range of scenarios, including detailed cost estimate data where possible - this should include consideration of significant uncertainties and risks relating to the project.
- Based on this, overall likely social welfare benefit and disaggregated consumer, interconnector developer and generator impacts for GB and other relevant countries (with particular explanation of impacts on GB consumers' interests).
- Qualitative evaluation of any additional hard-to-monetise benefits, costs and risks that aren't reflected in the CBA. This would feed into our strategic sustainability assessment.
- Justification of the chosen connection location, interconnector capacity and technical design (eg converter technology and cable type), including by reference to comparison against other reasonable options.

[18] https://www.ofgem.gov.uk/publications-and-updates/cap-and-floor-regime-application-project-nemo-impact-assessment

- Project feasibility including key milestones and progress with other national regulatory authorities and governments.

- Input from the NETSO on the efficiency of the timing and location of connection point, and potentially also including the value of interconnector projects for system operation (eg balancing).

- Whether there are any particular aspects of the project needs case that are likely to merit further consideration or revisiting as part of the final assessment stage.

4.36. Further information on our assessment of projects at the IPA stage is in Appendix 3.

4.37. We expect that following the initial project assessment stage, we will make a decision on which projects should progress to the cost assessment (ie final project assessment) stage. In most cases we expect to consult for eight weeks on our decision to progress or reject certain projects. This consultation will consider all projects that have been assessed and will incorporate our impact assessment of the projects. Our assessment of the impacts of projects will then be updated as part of any final decision to offer cap and floor regimes to projects.

4.38. We think it could be beneficial for initial project assessment and final project assessment stages to overlap to enable projects to progress quickly through the framework and to take a final investment decision shortly after our assessment. The extent to which the initial project assessment and final assessment run concurrently would vary, depending on the extent to which detailed cost information will be available to inform the final project assessment. We think it is sensible to allow such flexibility and seek views on this approach. Any decision to offer such projects a cap and floor will still be subject to consultation.

4.39. Similarly, there may be periods between the initial and final project assessment stages in some cases. This could be because projects have a clear needs case but are not yet sufficiently progressed in their procurement to have detailed cost information. We consider there may be a need for some limit on the potential time between these stages and we discuss this further in paragraph 4.47 below.

Final project assessment (FPA) stage

4.40. At the final project assessment stage we will assess the efficiency of the detailed project costs, as well as re-examining any information or aspect of the needs case that has changed significantly from the initial project assessment. We will need to undertake our own assessment of all costs that may fall to GB consumers.

4.41. As discussed in Chapter 3, we think there is merit in moving to a cost assessment process that includes elements of early and late assessments of capex costs for near-term interconnector projects. In this section we assume that we follow this approach, as the level of detail required for a pure late assessment approach would be significantly less.

4.42. Following our initial view on which projects are in the interest of GB consumers at the initial project assessment, these projects will progress to the final project assessment stage on project-specific timelines.

4.43. There is a risk that we decide that a project should progress to the final project assessment based on indicative cost information, but that this cost information could then change significantly before the formal cost assessment and the setting of the cap and floor. We do not therefore intend to confirm the offer of a cap and floor to a project until we have made a decision on the final project assessment. We propose that we would reassess the needs case of a project if its final costs vary significantly from those detailed in the initial project assessment.

4.44. We will consult on the conclusion of our final cost assessment and envisage this would generally be for four weeks. This consultation will also include an updated assessment of the impacts of the project if appropriate (ie if we deem that these have changed significantly following our consultation on the initial project assessment).

Decision to grant a cap and floor regime and implementation

4.45. Following our consultation on the final project assessment we will make a formal decision on whether to offer the project a cap and floor regulated revenue. This decision will include our final assessment of the impacts of the project.

4.46. We will then update the interconnector licence to allow for cap and floor regulated revenues. We will consult on the changes to the licence for 28 days, in line with our statutory duties.

Time limits on decisions

4.47. We think that there may be a need for time limits. Firstly, to provide consumers with protection from the needs case changing, and secondly to mitigate the risk that projects apply for a cap and floor (and seek to meet the proposed 2020 connection date eligibility criteria) based on unrealistic timelines for when they will be ready to make investment decisions. To this end we are considering the below.

- Introducing an additional eligibility criterion that requires projects to be able to show a credible plan for their reaching Financial Investment Decision within a certain period from the close of the application window.

- A time limit, from the point of our decision on the initial project assessment, for developers to submit adequate information to trigger a final project assessment or to achieve their Final Investment Decision.

- Reducing the duration of the cap and floor from 25 years by the amount of any delay in the project becoming operational relative to the connection date originally proposed in the initial project assessment (while keeping the levels of the cap and floor fixed).

- Retaining the option of re-opening our final decision to award a cap and floor for a project if its connection date or project functionality subsequently changes significantly (eg the project is delayed by a number of years or the capacity of the interconnector is significantly reduced). In this case, we could require developers to resubmit their applications to evaluate whether the offer of a cap and floor is still justified.

4.48. We would welcome views on these different options, including on the possible impacts on projects that would look to apply for a cap and floor.

5. Next steps

Chapter summary

This chapter sets out our proposed next steps.

Question box

Question 11: What are your views regarding the next steps?

5.1. We will analyse stakeholder responses to this consultation, which will inform our decision on whether to proceed with a roll-out of the cap and floor regime as proposed in this document.

5.2. In the case of a decision to roll out the cap and floor, we intend to open the application window as soon as possible. We would publish our decisions and any further detail on the processes for application and assessment at this time.

5.3. We envisage a deadline for complete applications of the end of September if the application process and information we would be requesting remains broadly as indicated here. We therefore encourage developers to begin to consider their applications in parallel with this consultation. If material changes are needed, we will provide an update on content and timing as soon as possible.

5.4. We will then review the information and engage with neighbouring regulators and developers over the autumn and winter. Subject to the quality of information and progress with discussions, we could be in a position to make proposals on specific arrangements for individual projects by the spring of 2015.

5.5. We are conscious that licence changes will be needed to implement our policy, both for the interconnector licence held by projects that receive a cap and floor and to NGET's licence given its role in cap and floor payments. We will be undertaking further work to develop these changes. Any licence changes we develop will be subject to statutory consultation.

5.6. We also envisage that there may be a potential need for changes to codes such as the Connection and Use of System Code (CUSC). We will be discussing this further with NGET and are also open to discussions with other interested parties.

Appendices

Index

Appendix 1 – Consultation Response and Questions

We would like to hear the views of interested parties in relation to any of 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 replicated below.

Responses should be received by 18 July 2014 and should be sent to:

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Unless marked confidential, all responses will be published by placing them in our library and on our website www.ofgem.gov.uk. Respondents may request that their response is kept confidential. We 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.

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.

Next steps: Having considered the responses to this consultation, we will make a decision on whether to proceed with a roll-out of the cap and floor regime as proposed in this document. Any questions on this document should, in the first instance, be directed to:

Jon Parker,
Future Networks, Electricity Transmission,
9 Millbank,
London.
SW1P 3GE.
Telephone: 0207 901 7408
Email: Cap.Floor@ofgem.gov.uk

Chapter Two

Question 1: Do you agree that making the developer-led cap and floor regime available to near term projects would be in GB consumers' interests?

Chapter Three

Question 2: What are your views on the cap and floor regime design?

Question 3: What are your views on our proposed approach to the cost assessment process?

Question 4: Where do you think we may need to be flexible to accommodate the specifics of different projects and other national approaches?

Chapter Four

Question 5: What are your views on the framework and processes set out in this document?

Question 6: What are your views on the timing and the information that we would require developers to submit?

Question 7: What are your views on our proposed eligibility test and the specific provisions that we are minded to include in such a test?

Question 8: What are your views on how we intend to assess projects at the initial and final project assessment stages?

Question 9: What are your views on the need for and timing of future windows?

Question 10: What are your views on the options to protect consumers from the risk of a needs case changing between our decision to award a cap and floor and a project's final investment decisions?

Chapter Five

Question 11: What are your views regarding the next steps?

Appendix 2 – Cap and floor regime design

Appendix Summary

This appendix describes the cap and floor regime design and methodology for setting the cap and floor in more detail. It should be read in conjunction with Chapter 3. The regime design builds on that developed to date for the Nemo project.

Figure 3.1 in Chapter 3 sets out our high level regime design. More detail is provided below but it is important to note that this design may need to vary to reflect the specific circumstances of individual projects. We note the high level regime builds on the design we consulted on in March 2013 and December 2011 for project Nemo.

Costs and revenues in the design of the cap and floor

The cap and floor regime design can be split into areas relating to 1) how we treat costs, 2) how we treat revenues, and 3) rate of return parameters at the cap and floor. Our proposals relating to these three areas are summarised in the tables below.

We start by summarising the cost related aspects of the regime:

Cost-related decisions	
Capital costs (capex)	We propose to use an early assessment approach for any costs already incurred (eg development costs) and for the proposed scope of construction works (this would predominantly cover the engineering, procurement and construction (EPC) contracts to deliver the assets). Any changes to the scope of the works (eg due to weather or unfavourable sea bed conditions) would be assessed ex post. If these additional costs have been efficiently incurred and were due to factors outside the control of the developers then the eligible costs would be updated through a re-opener. Approved capital expenditure (capex) forms a building block of the cap and floor levels. Capex is depreciated on a straight line basis over the 25 years of the regime, from when the project starts operation. This is then re-profiled to make the cap and floor levels flat in real terms over the regime. Interest During Construction (IDC), applied to the pre-operational costs, and financial transactions costs (ie the cost of raising finance) also form part of this building block approach.
Interest During Construction (IDC)	Interest During Construction (IDC) is treated as a cost incurred in the construction phase and applied to the pre-operational cost (detail on IDC return is provided in the table below).
Financial transaction costs (costs of raising finance)	Allowance of 2.5% on notional gearing for debt transaction costs and 5% on notional equity. Here we assume 50% notional gearing during operation with the gearing assumption from the IDC calculation used

Cost-related decisions	
	during construction.
Operating costs (opex)	Subject to an ex-ante assessment that will be undertaken before operation. We propose a discretionary re-opener after 10 years to allow for re-assessment and benchmarking of the opex forecast. Efficient operating costs will feed into cap and floor levels.
Tax	Tax will be annuitised and included in the cap and floor to give flat profile over the regime length. The UK tax regime is used as the basis for our assessment but we will need to consider whether the regime is being applied to the whole interconnector and the tax regime of the partner country. No defined tax-trigger mechanism for tax changes (ie the approach to tax will be set for the length of the regime).
Non-controllable costs	A forecast of these items will feed into the cap and floor as part of the ex-ante opex assessment estimate. Differences from the baseline will be fully passed through, subject to supporting evidence and justification of need and efficiency provided by the developer, regardless of whether revenue is at the cap and floor. This will be based on the approach to 'Allowed Pass Through Items' as defined for the offshore regime and includes: Crown Estate Lease, Property rates/taxes, Licence fees, decommissioning costs (net of any scrap value), costs relating to the Marine and Coastal Act 2009 and grid costs.[19]
Market related costs	Net off against congestion revenue during operation (rather than feeding into the cap and floor levels). This means that the revenues to be assessed against the cap and floor will have these costs deducted from them. Market related costs include costs relating to firmness.

Interconnector revenues will be assessed against the cap and floor over the agreed assessment period during the regime. Revenue related aspects of the regime design are set out below.

Revenue-related decisions	
Profile	Flat real cap and floor profile over the length of the regime. Cap and floor benchmark returns are used to annuitise the cap and floor levels respectively.
Indexation of the cap and floor	50% linked to UK RPI, 50% linked to relevant exchange rate adjusted inflation for connecting country, where applicable.
Assessment periods	5 year, discrete basis (each 5 year period is considered in isolation). Cumulative revenue during the 5 years will be assessed against the

[19] An example of the approach taken for offshore transmission is set out in the offshore transmission licence. An example of an OFTO licence can be found on the Electronic Public Register: https://epr.ofgem.gov.uk//Content/Documents/Blue%20Transmission%20London%20Array%20Limited%20-%20Offshore%20Electricity%20Transmission%20Licence%20-%2010-09-2013.PDF

	cumulative cap and floor at the end of the period.
Within assessment period payments	Possibility for payment within the assessment period at the cap or floor subject to Ofgem decision based on justified financing need by the project developer. Considered on a cumulative basis. If at the end of the assessment period the payments would not be due then they would need to be returned on an NPV neutral basis.
Transfers to/from the NETSO at the cap or floor	All payments recovered with a default delay of 2 years (this includes both adjustments within the assessment period and end of period settlement). We invite views from stakeholders on whether this approach will need to shortened and the impact of this.
Interconnector Availability (cap and floor)	Cap revenues can vary by +/-2% if interconnector availability exceeds or falls short of a target availability. This target availability would be set on a project by project basis according to an established methodology (based on SKM's report for us). Developers will lose eligibility for floor payments for each individual year if availability is below an 80% threshold and is considered out of the developer's control.
Financial assistance & refinancing	Any grants would be net off the project investment costs that are used to set the final cap and floor levels (ie ahead of operation). Refinancing gains can be retained by the developers.
Income adjusting events	Cost relating to income adjusting events will be passed through regardless of whether revenue is at the cap or floor subject to justification by the developers and subject to the costs exceeding a 5% (of the floor revenue) threshold. Changes to tax treatment are excluded. Income adjusting event shall be broadly defined as set out in the OFTO regime (with relevant amendments to reflect that interconnectors are not signatories to the STC).[20]

Our proposed approach to rate of return parameters is summarised below. Under the cap and floor regime there should be a return on investment at both the cap and floor. For the cap and floor, returns will be:

- Based on separate benchmarks, rather than attempting to work from a single central figure.
- Set adopting a mechanistic approach in order to provide clarity to investors.

[20]For OFTOs an income adjusting event must be:
(i) an event of circumstance constituting force majeure under the System Operator – Transmission Owner Code (STC); or
(ii) an event or circumstance resulting from an amendment to the STC not allowed for when allowed transmission owner revenues of the licensee were determined for the relevant year t; or
(iii) an event or circumstance other than listed above which, in the opinion of the NRAs is an income adjusting event and is approved by them.

- Based on an approach that we will decide in advance of the final investment decision, and with the parameters locked down shortly before financial close.
- Based on an approach that acknowledges that the interconnector will make investments and be exposed to risk in two jurisdictions.

As revenue will not be generated until the project is operational, interest is paid during the construction period.

Approach to returns	
Floor benchmark	For GB, based on a cost of debt A/BBB benchmark that will be applied to 100% of the RAV. A 50/50 weighting of GB/connecting country debt costs will be used where applicable. For GB this parameter will be calculated using a 20-day trailing average of the GBP Non-Financial iBoxx index of 10+ years to maturity with a credit rating of A/BBB. Inflation will be based on 10-year breakeven inflation data published by the Bank of England.
Cap benchmark	For GB this will be based on the Capital Asset Pricing model (CAPM). We will use the risk free rate and equity risk premium as determined by our methodology at the time. We are proposing to fix the equity beta at 1.25 based on our assessment of risk at the cap (we consider this to be similar to the risk faced by an independent generator[21]). Our current assessment of these parameters would result in a risk free rate of 1.6% and the equity risk premium taken as the long term assessment of total market returns adjusted for the RPI formula effect, less the risk free rate.
Project discount rates	Simple average of the floor return benchmark and the cap return benchmark will be used for NPV neutrality of payments (such as aggregating revenue within each assessment period and accounting for delays in payments at the cap or floor), whereas the cap and floor levels will be annuitised separately using the cap and floor returns benchmarks respectively.
IDC methodology	Based on approach to IDC used for offshore transmission with two additional uplifts for interconnectors to compensate for: greater project development risk; and uncertainty around costs disallowances.[22]

[21] We have based this assessment on the re-geared equity beta of Drax as an independent generator.

[22] For more detail on the IDC calculation, including the proposed comparator companies, please see the 2013 consultation on IDC for the Nemo project which can be found here: https://www.ofgem.gov.uk/publications-and-updates/offshore-electricity-transmission-and-interconnector-policy-minded-position-interest-during-construction-idc

Appendix 3 – Guidance for developers on project submissions and assessment

Appendix Summary

This appendix sets out the information that we would expect from developers in their initial applications and to inform our cost assessment at the final project assessment stage. It describes our proposed approach to assessing the benefits of interconnector projects, including what we expect from developers and how we will then use this information to inform our decisions.

Information to inform the eligibility and initial project assessment (IPA) stages

Aim of submission

Developer submissions are expected to ensure that we are only assessing sufficiently mature projects, and are also expected to contain enough information to allow us to thoroughly examine the needs case for (and viability of) projects.

Guidance for developer submissions

We expect that developer submissions for the eligibility and initial project assessment stages will need to include:

- Project overview, including confirmation of licence (or that it has been duly requested) and connection agreement (with connection date in place to provide exclusive market-to-market interconnection before the end of 2020).
- Quantified Cost-Benefit Analysis (CBA) against a plausible range of scenarios, including detailed cost estimate data where possible - this should include consideration of significant uncertainties and risks relating to the project.
- Based on this, overall likely social welfare benefit and disaggregated consumer, interconnector developer and generator impacts for GB and other relevant countries (with particular explanation of impacts on GB consumers' interests).
- Qualitative evaluation of any additional hard-to-monetise benefits, costs and risks that aren't reflected in the CBA.
- Justification of the chosen connection location, interconnector capacity and technical design (eg converter technology and cable type), including by reference to comparison against other reasonable options.

- Project plans and feasibility including key milestones and progress with other national regulatory authorities and governments.

- Input from the NETSO on the efficiency of the timing and location of connection point, and potentially also on the value of interconnector projects for system operation (including eg in supporting system balancing).

- An early-stage indication of whether there are any particular aspects of the project needs case that are likely to merit further consideration or revisiting as part of the final project assessment (FPA) stage.

Each of these is discussed in turn below. The information we will request from developers is consistent with, and builds on, our assessment to date of the Nemo and Eleclink projects.

Cost-Benefit Analysis (CBA), social welfare benefit and disaggregation of benefits for different groups, including quantified modelling where possible and qualitative evidence

Developer CBA/social welfare modelling should be undertaken against a plausible and justified range of scenarios for generation mix, demand and other key drivers of trading between interconnected countries. Developers should particularly consider the latest national scenarios in relevant countries. The four scenarios set out in ENTSO-E's CBA guidance could also be reflected, particularly to provide a wider European background for countries not subject to more detailed modelling. Relevant sensitivities, such as potential cost over-runs or dependencies on particular policies, should be considered on a project-by-project basis. As part of these sensitivities, it would be useful for developers to consider the benefit of their project if the GB carbon price (including the Carbon Price Floor) is the same as the EU carbon price to demonstrate the benefits provided by interconnection that aren't driven by carbon price differentials.

Developers will be expected to provide analysis supporting the social welfare benefit of their project, and disaggregation of benefits, costs and risks between consumers, interconnectors and generators in GB and other key countries. This should also seek to distinguish between key types of costs and benefits, as a minimum separately showing impacts as a result of changes in wholesale energy prices and any cap or floor payments.

The modelling should cover a number of spot years as a minimum, covering the expected duration of the regime – such as 2020, 2025, 2030 and 2035. Developers can provide a full annual breakdown of benefits where this supports the case for the project. We also request overall figures of the net present value of projects, based on interpolation between spot years where necessary, displaying headline benefits of the interconnector for GB as a minimum and for Europe as a whole where possible.

When discounting project benefits, developers should use the Treasury Green Book discount rate of 3.5% or provide a strong justification for using a different rate.[23]

Developers should provide reasonable assumptions relating to demand, weather pattern variability, generation mix (including load factors) and capacity and location of further interconnection in interconnected countries. Developers will be expected to justify these where necessary. These should align where possible with the assumptions in national scenarios and ENTSO-E's CBA guidance and any deviations will need to be fully justified. Modelling should be undertaken against high and low sensitivities/scenarios for future interconnection to GB (ie presenting benefits of their project if it is one of a few further interconnectors, and similarly when there is a significant increase in cumulative GB electricity interconnection).

Developers may submit a competition assessment where they expect that their project will bring significant competition benefits to the wholesale market in either GB or the connecting market and where this supports the needs case for their project. However, given the likely capacity of any interconnector relative to the GB wholesale market, we do not view this as a necessary part of the CBA/social welfare modelling submitted.

We envisage there could potentially be a role for the NETSO to provide input on the potential impacts of interconnector projects on its ability to operate the system, such as through providing alternative system balancing options. We would welcome views on whether the NETSO should have such a role and how it could best work.

The CBA will need to consider the social welfare benefits against the projected costs of the interconnector. This includes development, capital and operating costs. Developers' CBA studies will also need to incorporate the costs of any necessary onshore reinforcement required in the two connecting markets, and any projected increase in constraint costs as a result of their connection to national transmission systems.

Consideration of uncertainties and risks relating to the project

Where possible, we expect developers to reflect project uncertainties and risks in their quantitative CBA. However, where this is not possible, developers may submit a qualitative description of what they consider to be the most relevant risks and uncertainties for their project. This should support the social welfare analysis and CBA.

We expect this will also highlight any uncertainties on which project progress would likely be conditional – for example, if the investment is reliant on a particular minimum level of remuneration beyond that provided by the market, if it is dependent on certain technology being sufficiently proven, or if the procurement is tied to other transmission projects between non-GB markets. Developers may also

[23] The Treasury Green Book is available at: HTTPS://WWW.GOV.UK/GOVERNMENT/UPLOADS/SYSTEM/UPLOADS/ATTACHMENT_DATA/FILE/220541/GREEN_BOOK_COMPLETE.PDF

wish to highlight potential planning risks where this is not sufficiently covered in their project plans.

Justification of the chosen connection location, interconnector capacity and technical design (eg converter technology and cable type), including by reference to comparison against other reasonable options

Developers should submit justification for the overall design of their project, including:

- connection location
- route
- capacity
- technical design (such as cable type and choice of converter technology)

This should also describe other options considered and justification for rejecting these options, including the appraisal methodology used by developers in order to reach their decision.

Developer submissions should be supported where relevant by evidence of discussions with TSOs regarding connections at each end of the interconnector, and information on how these discussions have informed developers' decision-making. This should include projected costs associated with the onshore networks, such as reinforcement costs and impacts on constraint management.

We consider that there should be a role for the NETSO to provide independent input on these issues with regards to the impacts on the GB network.

Project plans including key milestones and progress with other NRAs and/or governments

We will require developers to submit detailed project plans including key milestones from early-stage development through to operation. This should be supported by detail on the discussions had to date with the relevant NRAs and governments in the connecting market, and a description of how developers expect our cap and floor regime to interact with the regulatory approach at the other end of the interconnector (if these differ).

We expect that this will include an overview of developers' procurement plans and an assessment of supply chain availability and engagement undertaken to date. The necessary steps in planning and consenting should be supported with detail on any engagement undertaken to date. It should also set out when projects envisage making their Final Investment Decision.

Indication of FPA submission

As part of their initial submission developers should give an indication, where possible, of the planned timing of their FPA submission (which will contain detailed cost information resulting from the tender process) if this is not provided at the time of their initial submission. This should also indicate whether any part of their initial submission is likely to need revisiting at the FPA stage – for example if their project

is particularly dependent on interconnection being able to participate in some form in the government's Capacity Market auctions.

What we'll do with this information

We will undertake initial eligibility checks to make sure projects meet the criteria set out in Chapter 4, and we expect this eligibility check to take less than one month from the close of the application window. Developers will need to ensure that submissions are complete. Where information provided is insufficient their project will not progress to the IPA stage. In general, we do not expect it will be necessary to consult with stakeholders on the eligibility check.

At the IPA stage we will undertake an assessment of the key likely benefits, costs and risks of a project. This will include examining the impacts of the project and incorporating strategic and sustainability issues. Our analysis will serve two purposes:

- to consider the merits of all submitted projects alongside each other
- to test the assumptions used and results produced by the developers' modelling.

We may commission consultants to undertake quantitative modelling to support this assessment.

Our assessment will inform our decision on which projects should progress to the FPA stage. The final decision to award a cap and floor arrangement to a project will only be taken at the FPA stage.

We normally expect to consult on our decision for eight weeks. This will also form our initial impact assessment (IA) for the projects we intend to progress to the FPA stage. Following this, we expect to publish an open letter giving formal notice of which projects will progress to the FPA stage.

We recognise that there may be situations in which it makes sense for the IPA and FPA stages to overlap or run in parallel so that we facilitate timely investment decisions for projects looking to proceed to Final Investment Decision quickly. We will be open to this providing that sufficient information is available to inform the FPA stage. Any decision to offer such projects a cap and floor will still be subject to consultation.

Submission information to inform the final project assessment (FPA) stage

Aim of submission

Developer submissions will ensure that we have sight of detailed cost information at an appropriate time in order to undertake the cost assessment in a timely manner. The information should be sufficient for us to undertake a comprehensive analysis of developers' efficient costs based on their costs incurred to date and construction

contracts. To assess the efficiency of detailed costs at the FPA stage (as well as re-examining any information or aspect of the needs case that has changed significantly from the IPA), and to make sure that consumers are only underwriting efficient spend through the floor, we will require detailed cost information in advance of the initiation of the FPA stage. We also would request developers notify us two months before submitting their cost information so we can plan accordingly.

Guidance for developer submissions

Developers will be expected to submit:

- Detailed information on incurred and projected costs
- Notice of any significant changes to the information in the IPA, such as route, technical design, ownership arrangements or funding agreements.

This will need to be submitted when developers are ready for the FPA stage to commence (ie when there is sufficient clarity on cost, for example when developers have received tender information and have an idea of preferred bidders).

We request that developers give us at least two months' notice of their intent to submit information for the FPA stage. Without this advanced sight of developer submissions we may not be able to deliver a final decision on our project assessment within the timescales set out in Chapter 4.

Further information on the submission information for the FPA stage is detailed below.

Detailed information on incurred and projected costs

Developers will need to provide detailed evidence of costs, including:

- A breakdown of all costs incurred to date and projected costs associated with the project (eg development costs including land and consenting, capital expenditure, expected maintenance and refurbishment costs, operational expenditure). We will expect more details on costs that have been incurred to date and those that will be committed to once construction contracts are awarded.

- An explanation of any material changes in cost levels from those indicated at the IPA stage and included in the CBA, with robust justification for any such changes in cost (including where these cost increases were deemed to be uncontrollable).

- Evidence that incurred and projected costs have been and will be efficiently incurred, eg through cost benchmarking, market testing or competitive tendering.

- Details of the procurement strategy followed and procurement timeline and selection process, and justification for why this provided best value.

- Clarification of any contracts awarded to date and timings for those that are yet to be awarded.

- Clarification of which risks the developer will continue to be exposed to once contracts are awarded, and justification of why it is efficient to manage these risks through contingency rather than through contracts

What we'll do with this information

We will progress projects to the FPA stage individually, based on the project timelines of specific interconnectors.

At the FPA stage we will undertake a cost assessment as set out in Chapters 3 and 4. This is intended to ensure that only efficient costs feed into the levels of the cap and floor. This reduces the risk of consumers underwriting a higher floor than necessary, whilst also ensuring that the cap and floor are commensurate with the level of risk undertaken by developers. As part of our cost assessment we will submit clarification questions to the developers.

Alongside our cost assessment we will re-examine any necessary aspects of the IPA if the developers or our own work have suggested that aspects of this may have changed, including as a result of any increases in project costs. Where these changes are significant and impact on the projected benefits of the interconnector we will set out our updated view as part of our FPA conclusions.

We envisage that we will generally consult on our FPA conclusions for four weeks. We expect that this consultation will also form our updated impact assessment for the project. Following this, if it is deemed to be in the interests of consumers, we will make a formal decision to grant a cap and floor regulated revenue stream to the interconnector. We will publish a letter to give effect to this decision and will consult on the necessary changes to the developers' interconnector licence in order to implement the cap and floor.

Appendix 4 – Glossary

A

Ancillary services

Contracted services (such as frequency response and black start) available to the System Operator in order to maintain balance and to ensure the security and quality of electricity supply across the system.

Article 16(6)

A provision under European Commission (EC) regulation No. 714/2009. It governs usage of revenues from interconnection.

Availability incentive

A financial mechanism which aims to ensure developers have appropriate incentives to keep the transmission link operational.

B

BritNed

1000MW electricity interconnector between Great Britain and Netherlands, operational since April 2011.

C

Capital expenditure (capex)

Expenditure on investment in long-lived network assets, such as gas pipelines or electricity overhead lines.

Centrally identified

A system planning model whereby a central body analyses infrastructure options and decides on the most efficient options to develop (potentially including interconnectors).

CION

Connections Infrastructure Options Note. A process undertaken by National Grid Electricity Transmission (in its role as NETSO) in order to assess different options for connections to the GB electricity transmission system.

Competitive tendering

A model for delivery of infrastructure whereby various bidders compete in order to build and operate certain assets.

Congestion rent

The revenue derived by interconnector owners from sale of the interconnector capacity through auctions.

Connection date

The date from which a project developer has an agreement in place to allow for the transfer of electricity to and from the GB electricity transmission system.

Cost assessment

A process which enables regulators to determine the efficient levels of project expenditure.

Cost-benefit analysis

An evaluation of project costs against the upside benefits that such a project could provide. This is primarily discussed in the context of quantitative modelling.

Cost of debt

The effective interest rate that a company pays on its current debt. Ofgem calculates the cost of debt on a pre-tax basis.

Cost of equity

The rate of return on investment that is required by a company's shareholders. The return consists both of dividend and capital gains. Ofgem calculates the cost of equity on a post-tax basis.

D

DC

Direct current, unidirectional flow of electric charge.

DECC

Department of Energy and Climate Change.

Depreciation

Depreciation is a measure of the consumption, use or wearing out of an asset over the period of its economic life.

Developer-led

An approach to building new interconnection whereby private developers identify the need for new capacity and build, own and operate the assets themselves.

Developer-led cap and floor regime

An approach whereby private developers identify the need for new capacity and build, own and operate the assets, but where returns are bounded by a cap (maximum return) and floor (minimum return).

Discount rates

A tool used to compare costs and benefits that occur in different time periods, for example over the life of an interconnector asset.

E

ENTSO-E

European Network of Transmission System Operators for Electricity.

EU

European Union.

Ex-ante

Before the event.

Ex-post

After the event.

F

Financial transaction costs

The costs of raising finance (debt and equity).

Final project assessment (FPA)

The stage at which we propose to examine detailed cost information for projects that apply for a cap and floor regulatory regime and have been recommended at the initial project assessment stage. At this stage we propose to make our final assessment of whether a project should be granted a cap and floor regulatory regime.

Firmness costs

Costs of compensating parties who have purchased capacity on the interconnector that for some reason cannot be provided, for example because of an outage.

G

GB

Great Britain.

GW

Giga Watt.

H

HVDC

High Voltage Direct Current.

I

IFA

Interconnexion France-Angleterre. 2000MW HVDC electricity interconnector between France and GB.

Income adjusting events

These are one-off costs which where justified will be treated as pass-through costs.

Incumbent delivery

An approach whereby assets are built, owned and operated by parties with existing asset networks (such as Transmission Owners).

Indexation

A method used to link financial parameters of the cap and floor regime to existing commonly-used metrics, typically inflation.

Initial project assessment (IPA)

Our proposed initial project assessment will be our first assessment of the needs case of eligible interconnector projects. At this stage we will assess whether there is a case for the project based on projected costs and benefits.

Integrated Transmission Planning and Regulation Project (ITPR)

A project to review the Great Britain (GB) electricity transmission arrangements for system planning and delivery that currently apply to onshore, offshore and interconnector assets.

Interconnector

Physical links which allow for the transfer of electricity across borders.

Interest during construction (IDC)

A tool used to capture the financing costs of the developer during construction.

M

Market coupling

Method of organising implicit auctions, where a single power exchange operates across the connected areas and manages the capacity between them.

Market-to-market projects

Interconnector projects which connect two national electricity markets.

Market-related costs

Charges levied on interconnector operators which are a function of trading between markets, such as firmness costs.

MW

Mega Watt.

N

National Electricity Transmission System Operator (NETSO)

The entity responsible for operating the GB electricity transmission system and for entering into contracts with those who want to connect to and/or use the electricity transmission system, currently NGET.

National Grid Electricity Transmission (NGET)

NGET owns and maintains the onshore high-voltage electricity transmission system in England and Wales. It also acts as the National Electricity Transmission System Operator for GB.

Nemo

Proposed 1000MW interconnector between Belgium and Great Britain.

Non-controllable costs

Costs which vary due to external factors and are beyond the ability of project developers to manage, such as licence fees.

Non-GB generation

Electricity generators located outside of GB which wish to sell electricity directly into the GB market.

NRA

National Regulatory Authority.

O

Ofgem

Office of Gas and Electricity Markets.

Operating expenditure (Opex)

Expenditure on the day to day operation of a network such as staff costs, repairs and maintenance and business overheads.

P

Project finance

An alternative form of finance to corporate or traditional finance. Under project finance any funds are linked specifically to that project and investors have no recourse to the parent company if the project is delayed or fails.

Price control

The control developed by the regulator to set targets and allowed revenues for onshore network companies. The characteristics and mechanisms of this price control are developed by the regulator in the price control review period depending on network company performance over the last control period and predicted expenditure in the next.

R

Regulatory Asset Value (RAV)

The value of the assets that is used by the regulator when setting an allowed level of revenue.

RIIO-T1

The first onshore electricity transmission price control under the RIIO framework, which applies from 1 April 2013 to 31 March 2021.

S

Sharing factor

A tool used in certain cost assessment approaches which enables overspend or underspend against a given target to be split between consumers and project developers.

Strategic Wider Works (SWW)

SWW projects are large electricity transmission projects which were not funded as part of the RIIO-T1 price control as the timing and costs of these projects were uncertain. We put the SWW arrangements in place to help manage this uncertainty and to allow TOs to bring forward such projects within the RIIO-T1 price control period.

System Operator (SO)

The entity charged with operating the GB high voltage electricity transmission system, currently NGET.

T

Transmission charges

Fees paid by users of national electricity transmission networks for transfer of electricity across such networks, from point of generation to point of demand. These charges are usually passed on to consumers.

Transmission Owner (TO)

An owner of a high-voltage transmission network or asset.

Transmission System Operator (TSO)

Entity in charge of operating transmission assets, either for electricity or gas.

Appendix 5 – Feedback Questionnaire

We consider 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?

Please send your comments to:

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