

# Consultation

## Consultation on proposed changes to our electricity interconnector cap and floor regime to enable project finance solutions

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**Contact:** Stuart Borland

**Team:** Interconnectors

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**Tel:** 020 7901 7134

**Email:** [Cap.Floor@ofgem.gov.uk](mailto:Cap.Floor@ofgem.gov.uk)

We are consulting on proposed changes to our cap and floor regulatory framework for electricity interconnectors to broaden the sources of finance available for two interconnectors that are currently under development. We would welcome views from parties with an interest in financing interconnectors, stakeholders and the public.

This document outlines the scope, purpose and questions of the consultation and how you can get involved. Once the consultation is closed, we will consider all responses and will publish the non-confidential responses we receive alongside a decision on next steps on our website at [Ofgem.gov.uk/consultations](https://www.ofgem.gov.uk/consultations). If you want your response – in whole or in part – to be considered confidential, please tell us in your response and explain why. Please clearly mark the parts of your response that you consider to be confidential, and if possible, put the confidential material in separate appendices to your response.

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## Contents

<b>Executive summary</b> .....	<b>4</b>
<b>Context and related publications</b> .....	<b>7</b>
Context .....	7
Related publications.....	7
<b>1. Introduction</b> .....	<b>9</b>
What are we consulting on? .....	9
Document overview .....	9
Consultation stages .....	9
How to respond.....	10
Your response, data and confidentiality .....	10
General feedback .....	10
<b>2. Background and scope of this consultation</b> .....	<b>12</b>
Our cap and floor regulatory regime .....	12
Overview of cap and floor interconnector projects .....	14
Requesting changes to our cap and floor regime .....	16
Scope of this consultation.....	17
<b>3. Overview of regime variations requests</b> .....	<b>19</b>
Process for requesting regime variations .....	19
Overview of variation requests .....	19
Key changes requested.....	20
Additional changes requested .....	22
Interactions with other projects .....	23
<b>4. Our assessment framework and Impact Assessment</b> .....	<b>25</b>
Overview of our approach to assessing variation requests .....	25
Impact Assessment (IA).....	25
Supporting information .....	28
<b>5. Our proposals and next steps</b> .....	<b>29</b>
Our initial views on requested changes .....	29
Conclusions from our draft IA .....	31
Risks, mitigation and thresholds .....	31
Next steps.....	32
Our consultation and decision on project finance variations .....	32
Final Project Assessments and Financial Close .....	33
<b>Appendices</b> .....	<b>34</b>

## **Executive summary**

### **Introduction**

We<sup>1</sup> regulate new interconnector development in Great Britain (GB) under our cap and floor regime. As part of the regime policy, developers may request regime variations provided they can demonstrate that these are in the interests of consumers.

Two developers, Greenlink and NeuConnect,<sup>2</sup> have requested regime variations to enable them to attract the required private financing for their projects to continue through construction and operation. Some of the variations will have consumer impact that were not accounted for when we approved the projects under the regime.

We welcome views on the developers' proposals, our Impact Assessment (IA) framework for the proposals and whether you consider that accepting these variations will improve consumer outcomes.

### **We want to enable efficient projects that will benefit consumers**

The total consumer benefits expected to be generated by the two projects seeking regime variations is £2.36billion<sup>3,4</sup> (2018/19 prices) in net present value (NPV) terms.

Developers have claimed that without variations to the default regime the projects will not go ahead or will be substantially delayed, in both cases with a cost (or loss of benefit) to consumers. They are separately seeking non-recourse project finance solutions, meaning that lenders will look primarily to the projects' cashflow for repayment, and the developers' risk is limited to their respective equity investment in the project.

Four projects approved under the regime have been able to raise balance sheet financing. These four projects are all being developed by National Grid Ventures (NGV). The likelihood of balance sheet developers similar to NGV stepping forward to fund these two projects under the default regime is unclear. In any event, we expect that the balance sheet financing route would likely result in project delays. We also consider that ensuring the regime is fit for a broad range of financing solutions, including project finance, would benefit consumers in the long run.

### **We want to protect consumers to ensure a fair deal**

A key risk when considering developers' proposals is that we transfer too much value from consumers to developers. We want to ensure a fair balance between risk and reward in the regime and that developers are only able to earn returns that reflect the risks that they face in a stable regulatory environment.

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<sup>1</sup> The terms "the Authority", "Ofgem" and "we" are used interchangeably. The Authority is the Gas and Electricity Markets Authority. Ofgem is the Office of the Gas and Electricity Markets Authority.

<sup>2</sup> Greenlink (a proposed 500MW interconnector to Ireland and planned for commissioning in 2023) and NeuConnect (a proposed 1400MW interconnector to Germany and planned for commissioning in 2023).

<sup>3</sup> Our August 2015 document '*Cap and floor regime: Update on our Initial Project Assessment of the Greenlink interconnector*' indicates that Greenlink will generate £183million in GB consumer benefit (NPV 2013/14 prices, base year 2019) which is equivalent to £199million (NPV 2018/19 prices, base year 2022).

<sup>4</sup> Our June 2017 document '*Cap and floor regime: Initial Project Assessment of the GridLink, NeuConnect and NorthConnect Interconnectors*' – indicates that NeuConnect will generate £2,197million in GB consumer benefit (NPV 2015/16 prices, base year 2021) which is equivalent to £2,163million (NPV 2018/19 prices, base year 2022).

We are therefore seeking your views to help us to identify and allow only the variations that are necessary to allow the projects to proceed without significant delay, and hence mitigate the risk of excessive value transfer from consumers to developers.

This will ensure that we are delivering robust regulatory decisions for new electricity interconnectors and that our cap and floor regime remains fit for purpose. This is a work programme that is set out in our Forward Work Programme 2019-21.<sup>5</sup>

### Key variation proposals put forward by developers

Greenlink and NeuConnect have requested a broader set of variations. We have reduced these to five key variations as part of our initial review for the following reasons:

- Only the five key variations are intrinsic to the cap and floor regime. Other variations may be matters which we would take into account in our future decision making process; and/or
- Developers did not sufficiently demonstrate that they were critical to project bankability and beneficial to consumers.

The key variations under consideration are set out below:

- **Variation 1:** Currently, the revenue assessment period for interconnectors operating under the cap and floor regime is five years. Developers have requested an annual assessment process to ensure that they are able to access any payments due from consumers annually. This would align our assessment process with annual debt repayment obligations that they expect.
- **Variation 2:** The default regime requires developers to ensure that the interconnector capacity is available to convey electricity at least 80% of the time. If this minimum threshold is not met and the interconnector cannot earn enough revenues in the market to support debt repayment, consumers will not top up revenues to the floor level in that year to ensure that debt is repaid on time. Developers have requested that consumers should top up revenues to the floor if the 80% minimum availability target is not met to enable debt servicing. They have proposed to repay consumers (from future revenues) on an NPV-neutral basis for payments received in years where availability is below 80%.
- **Variation 3:** Developers have requested that we should broaden our definition of force majeure under the regime to cover more events.<sup>6</sup>
- **Variation 4:** In the default regime, the cap and floor levels and Interest During Construction (IDC) are calculated based on a notional cost of debt benchmark (corporate iBoxx indices) and gearing is calculated based on comparator firms. Developers have requested that the cap and floor levels should be calculated based on the actual funding arrangements (cost of debt and gearing) resulting from a

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<sup>5</sup>Forward Work Programme 2019-2021:

[https://www.ofgem.gov.uk/system/files/docs/2019/03/ofg1132\\_fwp\\_2019\\_21\\_programme\\_post\\_consultation\\_web.pdf](https://www.ofgem.gov.uk/system/files/docs/2019/03/ofg1132_fwp_2019_21_programme_post_consultation_web.pdf)

<sup>6</sup> The legal definition of force majeure under the default regime is as set out on Page 3 of Schedule 1A – New special conditions for the electricity interconnector licence held by National Grid North Sea Link Limited: [https://www.ofgem.gov.uk/system/files/docs/2018/07/schedule\\_1a\\_nsl\\_special\\_licence\\_conditions\\_published.pdf](https://www.ofgem.gov.uk/system/files/docs/2018/07/schedule_1a_nsl_special_licence_conditions_published.pdf)

competitive debt raising process.<sup>7</sup> They have indicated that the actual cost of debt and gearing may be higher than as set out in the default regime.

- **Variation 5:** In the default regime, developers will not get a full 25 year regime if their project is not operational by a set date. Developers have requested that Ofgem should maintain the default 25-year regime length where projects are late for reasons beyond their control or where a delay is demonstrated to be in the interest of GB consumers (rather than reducing the regime length to reflect the delay).

### Our assessment framework

In testing the evidence provided by the developers, we have sought views through engagement with banks and institutional debt lenders, and taken advice from PricewaterhouseCoopers (PwC). We have undertaken both qualitative and quantitative assessments of the variations (see our IA document published alongside this consultation). The assessment framework helps to explain the effects and impacts of the variation proposals on consumers and industry participants. It should be noted that assessing the impacts of the proposed variations is inherently highly uncertain. There is no empirical evidence available to inform the impact that accepting the proposed variations could have on the probability of project delay or cancellation. We have used evidence from lenders and financial experts to inform our judgements but we note that these are subjective.

Our initial assessment suggests that we should accept Variations 1 to 3. We are minded to reject Variations 4 and 5. We are seeking views and further evidence from stakeholders.

### Next steps

We are keen for stakeholders to respond with their views and evidence relating to the questions posed in this document. Responses to this consultation and continued stakeholder engagement over the coming months will help shape our decision on the variation requests. We will aim to issue a decision in early 2020. This would allow developers to progress discussions on financing arrangements with lenders and enable them to meet our default regime Final Project Assessment (FPA)<sup>8</sup> timelines.

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<sup>7</sup> Greenlink has requested that the actual cost of debt is applied only to the actual debt geared portion of the Regulated Asset Value (RAV), instead of applying it to 100% of the RAV (as in the default regime).

<sup>8</sup> We undertake the FPA to assess the efficiency of project costs, as well as to re-examine any information or aspect of the needs case that has significantly changed since we first approved projects.

## Context and related publications

### Context

#### Our duties

Ofgem's principal objective in carrying out its function is to protect the interests of existing and future electricity and gas consumers.<sup>9</sup> It includes consumers' interests in the reduction of greenhouse gases and in the security of the supply of gas and electricity to them. These duties are reflected in our objective for the cap and floor regime, which is to promote competition in interconnector development and to incentivise efficient and cost-effective delivery of interconnectors, which may help reduce prices that consumers pay and carbon emissions as well as increase security of supply.

#### Our cap and floor regime

The cap and floor regime is the regulated route to develop interconnector projects in GB. This developer-led framework balances commercial incentives and appropriate risk mitigation for project developers by providing a maximum (cap) and minimum (floor) returns for an interconnector project. Revenues above the cap are passed back to network users, whilst returns below the floor are topped-up by consumers.

#### This consultation

As part of our current policy, developers may request regime variations provided they can demonstrate that these are in the interests of GB consumers. This is to reflect that certain aspects of the default regime may be less suitable for some types of financing solutions, and therefore it might limit the pool of capital developers can access. In December 2015,<sup>10</sup> we issued guidance to help interested developers in asking for regime variations related to financing.

Two projects, Greenlink and NeuConnect, have requested regime variations. We are now seeking views on the regime variations requested by these projects. We are also seeking views on our initial positions on those variations and on the analysis we have conducted.

We are keen for stakeholders to respond with their views and evidence to the questions posed in this document. We would also welcome any additional information that could help ensure that our approach to compiling the evidence that underpins our decisions is proportionate, consistent and transparent. Responses to this consultation will help to shape our decision on the variation requests.

### Related publications

Cap and Floor Regime for Regulated Electricity Interconnector Investment for application to project NEMO (published March 2013):  
[https://www.ofgem.gov.uk/sites/default/files/docs/2013/06/summary-of-responses-to-nemo-consultation\\_0.pdf](https://www.ofgem.gov.uk/sites/default/files/docs/2013/06/summary-of-responses-to-nemo-consultation_0.pdf)

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<sup>9</sup> S4AA Gas Act 1986 and s3A Electricity Act 1989

<sup>10</sup> You can find the guidance at:

[https://www.ofgem.gov.uk/sites/default/files/docs/cap\\_and\\_floor\\_regime\\_variations\\_open\\_letter.pdf](https://www.ofgem.gov.uk/sites/default/files/docs/cap_and_floor_regime_variations_open_letter.pdf)

## Consultation on proposed changes to our electricity interconnector cap and floor regime to enable project finance solutions

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The regulation of future electricity interconnection: Proposal to roll out a cap and floor regime to near-term projects (published May 2014):

[https://www.ofgem.gov.uk/sites/default/files/docs/2014/05/regulation\\_future\\_interconnection\\_cap\\_and\\_floor\\_0.pdf](https://www.ofgem.gov.uk/sites/default/files/docs/2014/05/regulation_future_interconnection_cap_and_floor_0.pdf)

Cap and floor regime: Initial Project Assessment of the FAB Link, IFA2, Viking Link and Greenlink interconnectors (published March 2015):

[https://www.ofgem.gov.uk/sites/default/files/docs/2015/03/ipa\\_march\\_2015\\_consultation\\_-\\_final\\_0.pdf](https://www.ofgem.gov.uk/sites/default/files/docs/2015/03/ipa_march_2015_consultation_-_final_0.pdf)

Near-term interconnector cost and benefit analysis (Independent report from Pöyry 2015):

[https://www.ofgem.gov.uk/sites/default/files/docs/2015/03/791\\_ic\\_cba\\_independentreport\\_final.pdf](https://www.ofgem.gov.uk/sites/default/files/docs/2015/03/791_ic_cba_independentreport_final.pdf)

Open letter on financing electricity interconnectors under the cap and floor regulatory regime (published May 2015):

<https://www.ofgem.gov.uk/publications-and-updates/open-letter-financing-electricity-interconnectors-under-cap-and-floor-regulatory-regime>

Cap and floor regime: Update on our Initial Project Assessment of the Greenlink interconnector (published August 2015):

[https://www.ofgem.gov.uk/sites/default/files/docs/2015/08/greenlink\\_ipa\\_open\\_letter.pdf](https://www.ofgem.gov.uk/sites/default/files/docs/2015/08/greenlink_ipa_open_letter.pdf)

Decision on the Initial Project Assessment of the Greenlink interconnector (published September 2015):

<https://www.ofgem.gov.uk/publications-and-updates/decision-initial-project-assessment-greenlink-interconnector>

Cap and floor regime: Initial Project Assessment of the GridLink, NeuConnect and NorthConnect Interconnectors (published Jun 2017):

[https://www.ofgem.gov.uk/system/files/docs/2017/06/ofgem\\_window2\\_ipaconsultation\\_june\\_2017.pdf](https://www.ofgem.gov.uk/system/files/docs/2017/06/ofgem_window2_ipaconsultation_june_2017.pdf)

Near-term interconnector cost and benefit analysis (Independent report from Pöyry 2017):

[https://www.ofgem.gov.uk/system/files/docs/2018/01/near-term\\_interconnector\\_cost\\_and\\_benefit\\_analysis\\_-\\_independent\\_report\\_.pdf](https://www.ofgem.gov.uk/system/files/docs/2018/01/near-term_interconnector_cost_and_benefit_analysis_-_independent_report_.pdf)



## 1. Introduction

### What are we consulting on?

1.1. Our cap and floor regime is the regulated framework for new interconnector investment in Great Britain. We introduced the cap and floor regime to reduce risk and encourage increased investment where this benefits consumers.

1.2. The cap and floor framework introduces a strong commercial pressure on developers to efficiently manage and minimise costs. The regime provides maximum (cap) and minimum (floor) returns for an interconnector project, striking a balance between commercial incentives and appropriate risk mitigation for project developers.

1.3. This consultation considers requests for variations to our default cap and floor regime design. As part of our assessment framework, developers can request regime variations provided they can demonstrate that these are in the interests of consumers. Two projects approved under the regime, Greenlink and NeuConnect, have requested variations to the default regime, to enable them to project finance their projects. We expect similar requests from another three projects.

1.4. We have to make a decision whether to accept or reject the variation proposals. This will allow developers to progress discussions on financing arrangements with lenders and be able to meet our default regime FPA timelines.

1.5. This consultation is your opportunity to provide us with views on developers' proposals and our assessment of the proposals to date.

### Document overview

1.6. This consultation includes four main sections:

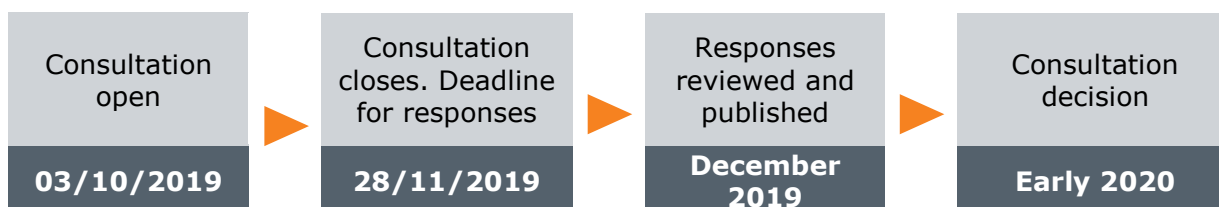
- **Section 2** provides background on our cap and floor regime and on our work to date to consider project finance issues. It also sets out the scope of this consultation.
- **Section 3** outlines the regime variations requested by the developers of the Greenlink and NeuConnect interconnectors.
- **Section 4** includes information on our approach to assessing requests for changes to the default cap and floor regime. We explain our qualitative and quantitative analysis and the related risk and limitations. We also provide an overview of our Impact Assessment (IA), which is published as a supporting document alongside this consultation.
- **Section 5** outlines our proposals for consultation and our planned next steps.

### Consultation stages

1.7. This is an eight-week consultation on both this document and our supporting Impact Assessment. We welcome responses at any point during the consultation process. We are not planning any public events or workshops, but we are open to meeting interested stakeholders to hear your views.

1.8. Following the consultation period, we will carefully consider responses and will take these into account in reaching our final decision on whether to approve or reject the variations requested. We are aiming to reach a final decision in early 2020, although this is subject to the number and content of consultation responses we receive.

**Figure 1: Consultation stages**



## How to respond

1.9. We want to hear from anyone interested in this consultation. Please send your response to the person or team named on this document's front page.

1.10. We've asked for your feedback in each of the questions throughout. Please respond to each one as fully as you can. We will publish non-confidential responses on our website at [www.ofgem.gov.uk/consultations](http://www.ofgem.gov.uk/consultations).

## Your response, data and confidentiality

1.11. You can ask us to keep your response, or parts of your response, confidential. We'll respect this, subject to obligations to disclose information, for example, under the Freedom of Information Act 2000, the Environmental Information Regulations 2004, statutory directions, court orders, government regulations or where you give us explicit permission to disclose. If you do want us to keep your response confidential, please clearly mark this on your response and explain why.

1.12. If you wish us to keep part of your response confidential, please clearly mark those parts of your response that you *do* wish to be kept confidential and those that you *do not* wish to be kept confidential. Please put the confidential material in a separate appendix to your response. If necessary, we'll get in touch with you to discuss which parts of the information in your response should be kept confidential, and which can be published. We might ask for reasons why.

1.13. If the information you give in your response contains personal data under the General Data Protection Regulation 2016/379 (GDPR) and domestic legislation on data protection, the Gas and Electricity Markets Authority will be the data controller for the purposes of GDPR. Ofgem uses the information in responses in performing its statutory functions and in accordance with section 105 of the Utilities Act 2000. Please refer to our Privacy Notice on consultations, see Appendix 4.

1.14. If you wish to respond confidentially, we'll keep your response confidential, but we will publish the number (but not the names) of confidential responses we receive. We won't link responses to respondents if we publish a summary of responses, and we will evaluate each response on its own merits without undermining your right to confidentiality.

## General feedback

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1.15. We believe that consultation is at the heart of good policy development. We welcome any comments about how we have run this consultation. We'd also like to get your answers to these questions:

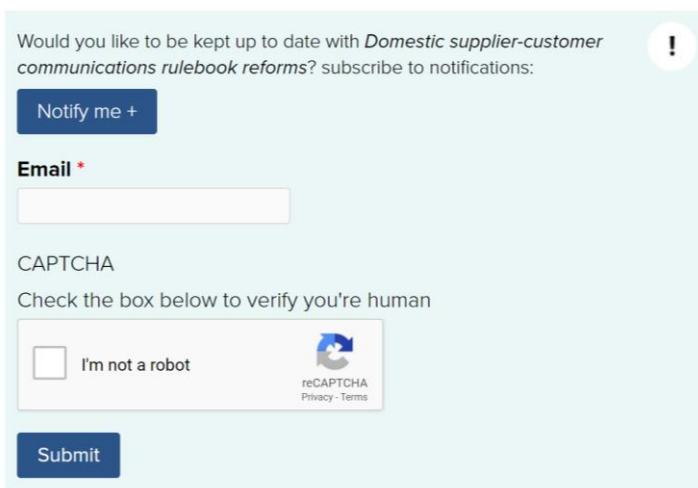
1. Do you have any comments about the overall process of this consultation?
2. Do you have any comments about its tone and content?
3. Was it easy to read and understand? Or could it have been better written?
4. Were its conclusions balanced?
5. Did it make reasoned recommendations for improvement?
6. Do you have any further comments?


Please send any general feedback comments to [stakeholders@ofgem.gov.uk](mailto:stakeholders@ofgem.gov.uk)

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## **2. Background and scope of this consultation**

### **Section summary**

This chapter provides background on our cap and floor regime and on our work to date to consider project finance issues. It also gives an overview of the scope of this consultation.

### **Our cap and floor regulatory regime**

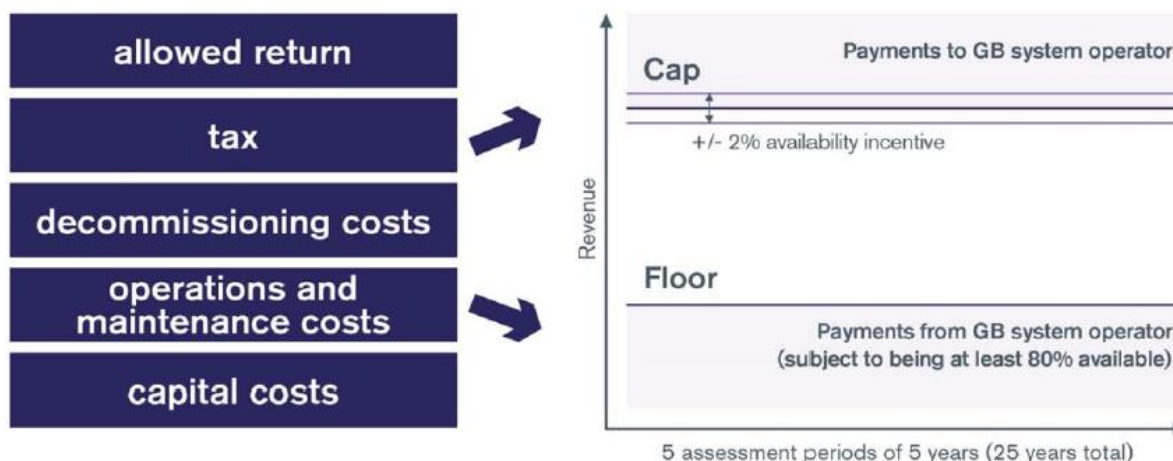
- 2.1. Electricity markets in the UK and Europe are physically linked by interconnectors which provide access to cheaper electricity outside the UK. They reduce the need to curtail intermittent generation, reducing the cost of renewables to the electricity system and the price of electricity for consumers. They also enable imports which can improve energy security by providing access to a wider market.
- 2.2. Originally, investment in electricity interconnectors in GB was only possible under the exemption route, which brought forward limited interconnector investment. We therefore developed our cap and floor regime, a new regulatory framework to encourage timely, economic and efficient investment in interconnection where that is in the interests of existing and future consumers.
- 2.3. Since the regime roll out in 2014, we have approved nine new projects which are expected to deliver additional consumer benefits through increased competition. Four of these projects are being developed by NGV and the remaining five by project companies that are all seeking or expected to seek regime variations.
- 2.4. The cap and floor framework introduces a strong commercial pressure on developers to efficiently manage and minimise costs. The regime provides maximum (cap) and minimum (floor) returns for an interconnector project, striking a balance between commercial incentives and appropriate risk mitigation for project developers.
- 2.5. Project costs are borne by the developer, who only receives consumer underwriting if project revenues fall below the floor level. If the revenues earned are between the cap and floor, then there is no consumer exposure to the project costs or revenues. If revenues exceed the cap level, these are redistributed to the consumers.

### **Cap and floor regime design**

- 2.6. The regime sets a maximum (cap) and minimum (floor) level for the revenues that can be earned by the interconnector over a 25 year period. Between the cap and the floor the interconnector retains merchant risk. Revenue above the cap is returned to customers through transmission charges, while revenues below the floor are topped-up by consumers. This means that, if an interconnector does not receive enough revenue from its operations, its revenue will be 'topped up' to the floor level by GB consumers. For consumers, the cap on revenues provides benefits in return for their exposure in underwriting the floor.

2.7. The cap and floor levels themselves are set based on project costs using a typical regulated asset base model. We then apply different financial return parameters to set the cap and the floor independently. Figure 2 below provides an overview of how the cap and floor levels are set:

Figure 2: Cap and Floor building blocks



2.8. The floor is designed to cover an efficient cost of debt (with certain safeguards), while the cap aims to set an appropriate upper limit on revenues, based on a broadly comparable rate of equity return.

2.9. The default regime lasts for 25 years, split into five revenue assessment periods of five years each. We have also provided the opportunity for developers to request within-period adjustments (ie a revenue assessment part of the way into a five-year period) on financeability grounds.

2.10. A more detailed description of the default cap and floor regime can be found in Appendix 1.

### Our cap and floor assessment framework

2.11. There are three main stages to our cap and floor assessment framework:

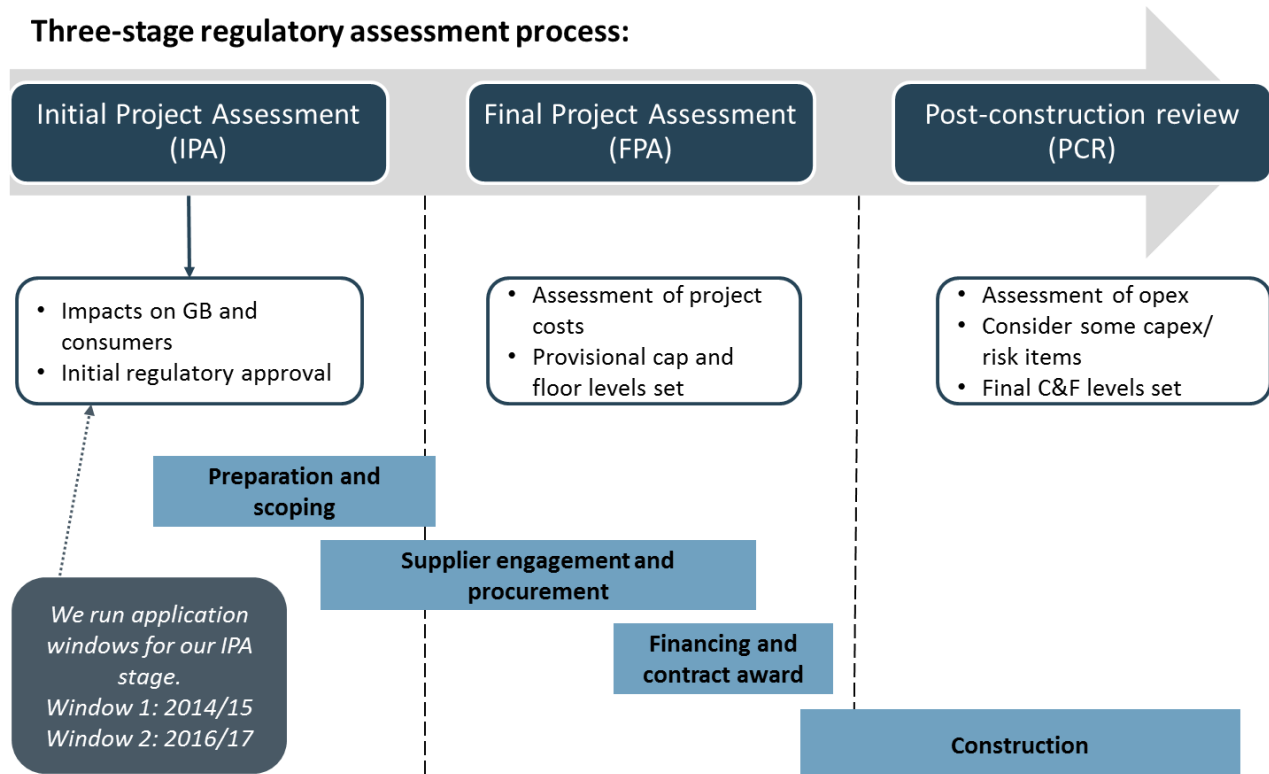
- The **Initial Project Assessment (IPA)** stage is when we assess the needs case for new interconnector projects. This is predominately an economic assessment, taking into account the total costs and benefits of new interconnectors and assessing the likely impacts on consumers. We undertake our IPA stage for multiple projects in tandem via our application windows – we have run two application windows to date. We do this so that we can take a view on the interactions between projects.
- At the **Final Project Assessment (FPA)** stage we confirm the grant of a cap and floor regime and set the provisional cap and floor levels. We assess the economic and efficient costs associated with developing, constructing, operating, maintaining and decommissioning of the licensee's interconnector. We also set the project's financial parameters, develop a project-specific financial model, and set the values for incentives.

## Consultation on proposed changes to our electricity interconnector cap and floor regime to enable project finance solutions

- The cap and floor levels are then confirmed at the **Post-Construction Review (PCR)** stage, when we revisit aspects of our cost assessment that were not fixed at the FPA stage, and assess the efficiency of events that have materialised during construction.

2.12. These main stages are supported by annual reporting, which takes place between the FPA and PCR stages. These stages are set out in Figure 3 below:

Figure 3: Cap and Floor assessment framework



2.13. In addition to the three mandatory assessment stages set out above, we introduced a discretionary and project-specific framework for requesting variations to the default regime design in order to enable alternative finance solutions.<sup>11</sup> One of the reasons we adopted this policy was to reflect stakeholder feedback suggesting that certain aspects of the default regime may be less suitable for some types of financing solutions.

## Overview of cap and floor interconnector projects

2.14. We developed the cap and floor regime for the Nemo Link interconnector in collaboration with the Belgian energy regulator, CREG. In August 2014, we extended the cap and floor regime to other interconnectors by opening a first application window (Window 1) closing in September

<sup>11</sup> Enabling a range of financing solutions under the cap and floor regime, December 2015: [https://www.ofgem.gov.uk/sites/default/files/docs/cap\\_and\\_floor\\_regime\\_variations\\_open\\_letter.pdf](https://www.ofgem.gov.uk/sites/default/files/docs/cap_and_floor_regime_variations_open_letter.pdf)

## Consultation on proposed changes to our electricity interconnector cap and floor regime to enable project finance solutions

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2014.<sup>12</sup> We then confirmed this as our enduring approach as part of the conclusions of our Integrated Transmission Planning and Regulation (ITPR) project in March 2015.<sup>13</sup>

2.15. Since the regime roll out in 2014, we have approved nine new projects which are expected to deliver consumer benefits through increased competition and security of supply.

2.16. In December 2014, the Nemo Link project was granted a cap and floor regime.<sup>14</sup> The Nemo Link interconnector project is the first project developed under our regime. Nemo Link was built to time and under budget, commencing commercial operations in January 2019.

2.17. During 2015, following our IPA stage, we then decided to grant a cap and floor regime in principle to five projects which applied in our cap and floor Window 1. These projects are: North Sea Link (NSL) (to Norway), FAB Link (to France), IFA2 (to France), Viking Link (to Denmark) and Greenlink (to Ireland).<sup>15</sup>

2.18. In November 2015 we published our decision to open a second cap and floor application window (Window 2), from March to October 2016.<sup>16</sup> We decided to grant a cap and floor regime to three projects: GridLink (to France), NeuConnect (to Germany) and NorthConnect (to Norway).<sup>17</sup>

2.19. Table 1 below summarises the key features of the projects currently regulated through our cap and floor regime.

**Table 1: Interconnector projects regulated under the cap and floor regime to date**

Project Name	Developers	Connecting country	Capacity (MW)	Status
Nemo Link	National Grid Interconnector Holdings (NGIH) and Elia	Belgium	1000	Operational
NSL	NGIH and Statnett	Norway	1400	Under construction
FAB Link	Transmission Investment and RTE	France	1400	Under development

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<sup>12</sup> Decision to roll out a cap and floor regime to near-term electricity interconnectors:

<https://www.ofgem.gov.uk/publications-and-updates/decision-roll-out-cap-and-floor-regime-near-term-electricity-interconnectors>

<sup>13</sup> Integrated Transmission Planning and Regulation (ITPR) project: final conclusions:

<https://www.ofgem.gov.uk/publications-and-updates/integrated-transmission-planning-and-regulation-itpr-project-final-conclusions>

<sup>14</sup> Decision on the cap and floor regime for the GB-Belgium interconnector project Nemo:

<https://www.ofgem.gov.uk/publications-and-updates/decision-cap-and-floor-regime-gb-belgium-interconnector-project-nemo>

<sup>15</sup> We decided to grant an IPA to NSL in March 2015; to FAB Link, IFA2 and Viking Link in July 2015; and to Greenlink in September 2015. All decisions are available at:

<https://www.ofgem.gov.uk/electricity/transmissionnetworks/electricity-interconnectors>

<sup>16</sup> Decision to open a second cap and floor application window for electricity interconnectors in 2016:

<https://www.ofgem.gov.uk/publications-and-updates/decision-open-second-cap-and-floor-application-window-electricity-interconnectors-2016>

<sup>17</sup> Decision on the Initial Project Assessment of the GridLink, NeuConnect and NorthConnect interconnectors:

<https://www.ofgem.gov.uk/publications-and-updates/decision-initial-project-assessment-gridlink-neuconnect-and-northconnect-interconnectors>

IFA2	NGIH and RTE	France	1000	Under construction
Viking Link	NGIH and Energinet.dk	Denmark	1400	Under construction
Greenlink	Element Power and Partners Group	Ireland	500	Under development
GridLink	iCON Infrastructure Partners III	France	1400	Under development
NeuConnect	Frontier Power; Meridiam; Greenage Power; Allianz Capital Partners; Kansai Electric Power	Germany	1400	Under development
NorthConnect	NorthConnect AS; Lyse Produksjon AS; E-CO Energi AS; Vattenfall AB; Agder Energi AS.	Norway	1400	Under development

2.20. We are also aware of a number of potential future projects beyond those listed here, including those which are European Projects of Common Interest (PCIs) or that have connection agreements as set out in National Grid ESO's interconnector register.<sup>18</sup>

2.21. Alongside our cap and floor Window 2 IPA consultation, in June 2017, we committed to review the need for, and timing of, any future cap and floor application windows. We continue to see a review as necessary before opening any further cap and floor windows. However, we have delayed our planned review to make sure we can factor in potential implications of the UK's departure from the EU on the need for future interconnection. We are open to discussing these issues with interested stakeholders in more detail.

## **Requesting changes to our cap and floor regime**

2.22. As part of the regime policy, developers may request regime variations provided they can demonstrate that these are in the interests of consumers. One of the reasons we adopted this policy was to reflect stakeholder feedback suggesting that certain aspects of the default regime may be less suitable for some types of financing solutions. Two projects, Greenlink and NeuConnect, have requested regime variations and we may receive similar requests from further projects in future.

2.23. In May 2015 we published an open letter inviting interested parties to engage with us on the financing of electricity interconnectors under the regime. The aim of this initiative was to develop our understanding of areas in which amendments to the regime may enable broader financing options for developers without transferring too much risk to consumers. We received feedback from investors, lenders and developers on the aspects of the regime that might be less suitable for project finance solutions.

2.24. We published our guidance on regime variation requests in 2015, setting out our high-level principles for assessing such requests from developers. This required developers to demonstrate that any regime variation proposal will improve outcomes for consumers relative to the default regime. The two developers have set out in their submission that the variation

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<sup>18</sup> For the latest version of the Interconnector register, please visit: <https://www.nationalgrideso.com/connections/registers-reports-and-guidance>



proposals they have made are in the interest of consumers. They claim that these regime variations would increase the likelihood of their projects going ahead without significant delays or failure, compared to if the projects were developed under the default regime.

2.25. In April to May 2019, we had another programme of direct engagement with project finance stakeholders to test developers' rationale. We were keen to test the views provided by developers directly with debt lenders, to improve our knowledge base and to ensure developer submissions fully represent market views. Views shared by these stakeholders through both engagements (2015 and 2019) were mixed but did suggest that some changes to the regime parameters were necessary to enable project finance solutions.

### Scope of this consultation

2.26. We are consulting on proposed variations to our cap and floor regime that have been requested by the developers of two projects, Greenlink and NeuConnect, to enable them to raise the financing required to move from development into construction and operation. We are seeking views on the regime variations requested by Greenlink and NeuConnect, and our initial positions on those variations.

2.27. We have reached our initial positions by considering the impact of accepting the requested variations, against the counterfactual where variations are not granted and our default cap and floor regime therefore continues to apply.

2.28. We are also seeking views on the analysis included in this consultation and in our supporting Impact Assessment. We would appreciate feedback on our assumptions and also on whether there is additional evidence or factors that we haven't included, but should consider further when reaching our decision.

2.29. Considering the impact of variations on consumers and on projects is complex. As such, we have limited the scope of our analysis and this consultation to the areas noted above. The following areas are outside the scope of our consultation:

- **IPA analysis:** We have considered and assessed the requested variations against the same economic modelling baseline that informed our relevant IPA decisions for Greenlink and NeuConnect. We are not proposing to redo that analysis or to revisit the needs case for the projects as part of this exercise.
- **Revisiting analysis at FPA:** Our IPA decisions on Window 1 and Window 2 interconnectors were conditional on a number of factors, including that progress is in line with the timelines submitted to us at the IPA stage, and that project costs do not materially increase.<sup>19</sup> We noted that we may revisit the needs case for projects at the FPA stage if these conditions were not met. We have not undertaken that exercise in this consultation, other than where the cost of particular variations has an impact on our proposals to approve or reject variations. Our IPA conditions continue to apply and, as such, we may still revisit the needs case at our FPA stage if we consider that the basis of our IPA decision has materially changed.

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<sup>19</sup> Chapter 10 of our Window 2 IPA consultation (June 2017) sets out our IPA conditions: [https://www.ofgem.gov.uk/system/files/docs/2017/06/ofgem\\_window2\\_ipaconsultation\\_june\\_2017.pdf](https://www.ofgem.gov.uk/system/files/docs/2017/06/ofgem_window2_ipaconsultation_june_2017.pdf)

- **Impacts of EU Exit:** In the conditions we set as part of our Window 2 IPA decisions, we also noted that we will reconfirm at the FPA stage that the assumptions regarding energy market access and electricity trading rules on which the IPA decision was based remain broadly correct. Should this position change, as a result of EU Exit or otherwise, we have reserved the right to revisit the needs case to confirm whether or not Window 2 projects continue to be in consumers' interests. Our consideration of the impact of EU Exit on project economics is not within scope of this consultation. However, we have flagged some potential uncertainties throughout this document and our supporting IA.
- **Requests for regime variations from other projects:** We have limited our proposals in this consultation to apply to Greenlink and NeuConnect only. We are not aiming to put in place a secondary version of our default framework specifically for project financing. We are aware that other projects are likely to request regime variations in future, which is why additional impacts are considered in our IA. However, we will require full submissions that meet the criteria set out in our December 2015 open letter before we can consider any requests from future projects, and we will make any future decisions on a project-specific basis.
- **Impacts of, or on, future projects:** We consider it beyond the scope of this consultation to consider how the approval of any further projects beyond those already assessed in our two cap and floor windows to date may interact with, or affect, the requests we have received from Greenlink and NeuConnect.

### 3. Overview of regime variations requests

#### Section summary

This section outlines the regime variations requested by the developers of the Greenlink and NeuConnect interconnectors.

#### Questions

**Question 1: Do you have any views on the project finance variations requested by developers?**

**Question 2: Do you agree with our categorisation of key and additional variations? Are there any additional factors we should consider?**

**Question 3: Is there additional evidence that we should take into account when considering the implications for consumers and developers of either granting or rejecting the key variation requests?**

#### Process for requesting regime variations

3.1. We published an open letter in December 2015<sup>20</sup> setting out guidance to developers considering requests for variations to the default cap and floor regime design. Our open letter provided guidance on the content and timing of submissions, and set out criteria for completeness that submissions needed to meet. It also included the high-level principles we would use to assess such requests from developers.

3.2. We noted that developers should submit requests for variations ahead of, or in line with, our FPA process, and that we would consult on our assessment of potential variations. Our guidance also notes that, following the receipt of a complete submission, we would assess the potential costs and benefits to consumers of variations to the default regime, and would aim to issue a consultation within six months.

3.3. Our December 2015 open letter noted that we expected projects to submit a clear package of variations. This was so that we could consider all necessary changes alongside each other, rather than taking a piecemeal approach to assessing proposed changes as discussions with developers and financiers evolved.

#### Overview of variation requests

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<sup>20</sup> Our December 2015 open letter providing guidance on regime variations is available at: [https://www.ofgem.gov.uk/sites/default/files/docs/cap\\_and\\_floor\\_regime\\_variations\\_open\\_letter.pdf](https://www.ofgem.gov.uk/sites/default/files/docs/cap_and_floor_regime_variations_open_letter.pdf)

3.4. In line with our guidance, we have received a project-specific package of variations from both Greenlink and NeuConnect.

3.5. Greenlink was granted a cap and floor regime in principle in September 2015, following assessment as part of our first cap and floor application window. Greenlink has undertaken significant development work and its procurement process is underway. Greenlink has requested variations with a view to raising finance in 2020. Greenlink has also submitted initial information for our Final Project Assessment (FPA) stage.

3.6. The Commission for Regulation of Utilities (CRU), the Irish regulator, determined that the Greenlink interconnector is in the public interest in Ireland in October 2018.<sup>21</sup> We understand that the CRU is currently considering the appropriate regulatory regime that is justified by public interest, such as a cap and floor regime for Greenlink. In our October 2018 update on Window 1 interconnectors, we noted that we would work with the CRU to explore the potential for symmetrical regulatory treatment at each end of the interconnector.<sup>22</sup>

3.7. We granted NeuConnect a cap and floor regime in principle in January 2018, following assessment via our second cap and floor application window. NeuConnect is continuing to progress with development works, and has requested project finance variations with a view to raising finance and submitting an FPA in 2020, with a target commissioning date at the end of 2023. We understand NeuConnect are continuing to engage with the German authorities to ensure regulatory arrangements in Germany are clear ahead of FPA submission.

3.8. We received an initial variations submission from Greenlink and from NeuConnect in December 2018. Supplementary information was provided by both projects in February 2019. We assessed the final submissions against the requirements listed in our guidance, and confirmed the submissions from Greenlink and NeuConnect as complete in February and March 2019 respectively.

### **Key changes requested**

3.9. A number of issues and requests were included in both Greenlink's and NeuConnect's submissions. We have reviewed the developers' submissions and tested these against our previous and current engagement with relevant stakeholders.

3.10. We have identified five variations that we propose to treat as key variations. Evidence suggests that these are more likely to be required to raise debt financing (which is also supported by these aspects being common across projects), and we also consider these as more significant changes to our default regime design.

3.11. The five key variations we have considered are set out in Table 2, below.

**Table 2: Key variations requested by developers**

Variation	Issue	Changes requested
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<sup>21</sup> CRU's publication CRU18216 is available at:

<https://www.cru.ie/wp-content/uploads/2018/10/CRU18216-Greenlink-determination-paper-1.pdf>

<sup>22</sup> Our October 2018 Window 1 update letter is available at:

[https://www.ofgem.gov.uk/system/files/docs/2018/10/w1\\_fpa\\_update\\_letter.pdf](https://www.ofgem.gov.uk/system/files/docs/2018/10/w1_fpa_update_letter.pdf)

## Consultation on proposed changes to our electricity interconnector cap and floor regime to enable project finance solutions

Variation 1: Reduce the default five-year revenue assessment period to one year	Developers have suggested our default five-year assessment period does not align with annual debt service arrangements.	Move from five-year periods (with discretionary within-period adjustments for financing reasons) to single-year assessment periods.
Variation 2: Consider changes to the principle underpinning our minimum availability threshold of 80%	Developers have suggested that our 80% availability threshold (below which the floor is not automatically paid) is not compatible with project finance funding due to the binary nature of the threshold.	Proposed solutions vary, but could include a repayment mechanism (where the floor acts as a loan from years with good availability and revenues) or a cap on liabilities.
Variation 3: Broaden our definition of force majeure under the default regime to include additional events necessary for enabling project finance funding	Developers have suggested that a narrower force majeure definition than adopted elsewhere increases risk and makes financing less likely.	Broaden force majeure definition if necessary to make it suitable for funding interconnector projects under the project finance route.
Variation 4: Use project-specific actual cost of debt and gearing to set the cap and floor levels, rather than the default notional cost of debt and gearing	Cost of debt and gearing are set notionally, with the cost of debt following an iBoxx index. Developers have suggested this is not an achievable cost of debt for project financed assets.	Set cost of debt and gearing based on actual values achieved via a competitive financing process.
Variation 5: Maintain 25-year regime length	Our default regime sets deadlines for connection (end of 2020 for Window 1 projects and 2022 for Window 2 projects) after which the duration of cap and floor support is reduced.	Maintain 25-year regime duration (where this can be demonstrated to benefit consumers, or where construction has been delayed beyond developers' control).

3.12. For some of these requests, the proposed changes to the regime are common:

- Both developers have requested a move from the five-year assessment periods of the default regime to a single-year assessment period. In both submissions, it has been suggested that this is a necessary change to enable project finance debt service on an annual basis.
- Both developers have also requested that we move from using a notional iBoxx-linked cost of debt to a project-specific actual cost of debt, achieved through a competitive debt funding process.

3.13. For one request, the issues highlighted in Greenlink's and NeuConnect's submissions are common, but the solutions proposed (as regime variations) are different. Greenlink proposes to apply actual cost of debt only to the actual debt geared portion of the Regulated Asset Value (RAV), whereas in the default regime the notional cost of debt is applied to 100% of the RAV. NeuConnect's request does not specify that this should only apply to the debt-gear portion, but proposes potential gearing changes subject to final lender requirements.

3.14. We are seeking views from stakeholders on the requests made by Greenlink and NeuConnect, and in particular on our categorisation of these five variation requests as key items. We would appreciate responses that provide evidence on the justification for these specific variations, and independent views on the types of regime changes that could alleviate potential debt financing issues. We are also seeking views on the implications for consumers and for developers if these key variations are either granted or, conversely, if they are not granted.

## Consultation on proposed changes to our electricity interconnector cap and floor regime to enable project finance solutions

3.15. Supporting information on the changes requested and rationale provided by developers is included in our Impact Assessment and in Appendix 2.

### Additional changes requested

3.16. Greenlink and NeuConnect have requested additional changes to the default regime design as part of the overall package of variations included in their submissions.

3.17. Table 3, below, lists the additional changes requested by Greenlink. It also provides an explanation of our proposed treatment of these variation requests.

**Table 3: Additional changes requested by Greenlink**

Request	Issue	Changes requested	Our proposal
Additional non-controllable costs	Some non-controllable costs are fixed for regime duration. Greenlink believe that this could lead to large changes within-period.	Propose including triggers for changes in corporation tax, changes in regulation and changes in law.	Minded to reject
Exchange rate changes between FPA and Financial Close	Allowances set at FPA may vary before financial close (e.g. EPC contracts denominated in foreign currency).	Request auto-updating allowances to capture exchange rate movements.	Minded to consider as part of cost assessment
Threshold for Income Adjusting Events (IAEs)	Greenlink believe there is a risk that multiple IAEs occur in the same year, which would not meet the default criteria (5% of floor level) but might pose a serious financial risk in combination.	Propose changing threshold for events to qualify as IAEs from 5% of floor to £1m a year, and to allow multiple events to aggregate.	Minded to reject
Incentives when revenues are above the cap	Greenlink consider that interconnector operators have a reduced incentive to operate once revenues are above cap (as all revenues are returned to consumers).	Request sharing mechanism above the cap	Minded to reject

3.18. Table 4, below, lists the additional changes requested by NeuConnect. It also provides an explanation of our proposed treatment of these variation requests.

**Table 4: Additional changes requested by NeuConnect**

Request	Issue	Changes requested	Our proposal
Modifications to the PCR	Clarify scope of Ofgem's cost assessment at PCR stage (including limitations on review).	<ul style="list-style-type: none"> <li>• Modify the PCR process so that only costs considered uncertain at FPA are eligible for review in the PCR.</li> <li>• Not to disallow changes to costs if the change is</li> </ul>	Not considered as a variation to the regime.

## Consultation on proposed changes to our electricity interconnector cap and floor regime to enable project finance solutions

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		<p>outside NeuConnect’s control.</p> <ul style="list-style-type: none"> <li>• Update PCR submission prior to Ofgem’s PCR decision if material new information arises.</li> </ul>	
NETSO payments	NETSO payment process can cause up to 2 years delay for payments to be made	Use forecasts of surpluses or deficits relative to the cap and floor as input to the NETSO payment process.	Minded not to introduce an additional complex projection and reallocation process.

3.19. We are proposing not to treat the suggestions listed in Tables 3 and 4 as key variations. These requests were filtered as part of our initial review for one or more of the following reasons:

- Our review and supporting evidence suggests these issues do not appear to be as material (ie essential for financeability) as the key issues considered in Table 2 above (including where issues are smaller in scale and nature);
- We do not consider these variations as intrinsic to the cap and floor regime but rather matters, which we would take into account in our future decision making process and/or
- They are not common across projects and therefore not deemed to be as important from a debt financing perspective.

3.20. We are seeking views on our proposal not to treat these suggested changes as key variations, and therefore not to consider these issues as part of our assessment framework and Impact Assessment outlined in Section 4.

3.21. We are also seeking views on the proposed positions we have taken against each of these additional variation requests, as set out in Tables 3 and 4 above.

### Interactions with other projects

3.22. Our cap and floor assessment framework provides the opportunity for any developer that passes our Initial Project Assessment stage to request changes to the default regime design. This needs to meet the criteria and submission requirements set out in our December 2015 open letter.

3.23. We are aware that a number of other interconnectors approved via our cap and floor regime are either considering or planning to seek project finance solutions. Whilst it might be reasonable to expect that other projects may request changes to the default regime in similar areas, the scope of this consultation is limited to the changes requested by Greenlink and NeuConnect.

3.24. Any projects wishing to seek similar changes in the future would need to apply for variations in line with our guidance, and would need to meet the minimum submission requirements. We would then need to assess any such requests in detail. In doing so, we may consider the same key and additional requests as defined in this consultation; however, we may also adopt a different approach, depending on the particular situation or evidence.

3.25. Interactions between the requests by Greenlink and NeuConnect and potential future requests by other project developers are discussed in more detail in the Impact Assessment, published as a supporting document to this consultation.



## 4. Our assessment framework and Impact Assessment

### Section summary

This section includes information on our approach to assessing requests for changes to the default cap and floor regime. We explain our qualitative and quantitative analysis and the related risks and limitations. We also provide an overview of our Impact Assessment, which is published as a supporting document alongside this consultation.

### Questions

**Question 4: Is our approach to assessing the costs, risks and benefits of project finance variations suitable? Are there any additional factors that we should build into our assessment?**

**Question 5: Do you have any views on the specific qualitative or quantitative analysis published in our Impact Assessment?**

## Overview of our approach to assessing variation requests

4.1. We have considered the key variations requested against a number of aims and principles. These principles have shaped the public guidance we have provided to date.

4.2. We consider that enabling alternative sources of finance such as project finance is, in principle, in the interests of GB consumers as it provides access to a broader pool of capital, as well as promotes competition in the interconnector market.

4.3. However, project developers need to demonstrate that any regime variations are in the interests of consumers. When considering the impacts on consumers of requests for regime variations, we have considered the impact on the consumer welfare and liability.

4.4. We have considered the costs and benefits of approving individual variation requests, but have also assessed combinations of variations to test the cumulative impact, as noted in our December 2015 open letter. We have considered the impact that variations would have on the regime as a whole. We are aiming to maintain the overall risk balance of the cap and floor regime to the extent possible, whilst ensuring consumers still realise the potential benefits of further interconnection.

## Impact Assessment (IA)

4.5. Our draft IA is published as a supporting document alongside this consultation. We have a statutory duty<sup>23</sup> to either carry out an IA or to publish a statement saying why we are not doing one. The duty applies to proposals that we consider "important" within the meaning

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<sup>23</sup> Under section 5A of the Utilities Act 2000.

of section 5A of the Utilities Act 2000. This is a draft IA, which we will update alongside our final decision on these variation requests.

4.6. Our IA is the analytical basis for our proposals and views included in Section 5 of this consultation. We are seeking views on the content of our IA and the way in which this informs our initial proposals.

### Qualitative assessment

4.7. Our IA includes a detailed qualitative discussion of the costs, risks and benefits of approving or rejecting the requested regime variations. We have explored the extent to which making individual regime variations might impact consumers, and have also considered a number of combinations of these variations.

4.8. We have also assessed the impacts that are difficult to meaningfully monetise, very long-term or unpredictable, making them difficult to incorporate within a quantitative analysis. Some of these include factors which are related to Ofgem's mid-term strategic and longer-term sustainability considerations.

4.9. We focus on impacts on competition, innovation and facilitating decarbonisation efforts in a cost effective manner. We have also considered wider impacts covering other cap and floor projects, vulnerable consumers, environment and our administrative and resources costs.

### Quantitative assessment

4.10. In our quantitative assessment, we have based our impact analysis on the best available evidence with input and advice from financing experts. However, we acknowledge the inherent limits of any quantitative assessment of the requested regime variations. We request feedback from stakeholders on the approach we have taken and views on whether and how it might be improved.

4.11. In our draft IA, we have tested a combination of options for approving or rejecting the key variations requested (as listed in Section 3 of this consultation). These combinations cover four **options**: rejecting or accepting Variations 1, 2, 3 and 4 and two intermediate options.

4.12. We modelled developers' responses to these options in the form of probability ranges attached to four different **outcomes** (A, B, C and D), where no interconnector is built as a result of lack of project financing route (A), projects are delayed but built on balance sheet (B), projects are delayed but built with project finance (C) or projects are built on time using project finance (D). We have presented more detail on the four options and the four outcomes in the IA.

4.13. We then estimate two key cost components: the cost of variations and cost of project delays under three scenarios (low cost, central cost and high cost) to capture uncertainties.

4.14. We calculated consumer impacts by evaluating the expected benefits across our modelled probability range to obtain lower and upper bound figures based on the following formula:

- Impact under each **outcome** = Pöyry benefits<sup>24</sup> – (cost of variation + cost of delay)
- Expected value under each **option** =  $A * p(A) + B * p(B) + C * p(C) + D * p(D)$ 
  - i. where A, B, C and D correspond to impact under the four outcomes we have assumed; and
  - ii. p is the probability reflecting the uncertainty of the outcomes (which are driven by developers' and finance providers' reaction to our decision, keeping everything else fixed).

4.15. We note that defining the parameters of our quantitative analysis, and costing variations in particular, is difficult and complex. We are aiming to understand the potential impacts (both costs and benefits) of variations on consumers, but we recognise there are a number of potential analytical approaches that could provide a basis for our assessment. We are seeking feedback on the analysis included in our IA, and on how we use this to inform the consultation positions set out in Section 5.

### Limitations

4.16. We have had to take account of a number of limitations when developing our analysis and assessing the requests for variations submitted by developers. These are explored in more detail in the IA, but the major limitations are:

- None of the cap and floor projects that have taken investment decisions to date have used project financing solutions. This limits our ability to consider the ways in which project financing interacts with the existing risk balance and incentives inherent in the cap and floor regime design. In addition, we are not aware of a precedent from other interconnector projects that would provide us with detailed evidence on specific financing aspects such as the likely actual cost of debt that might be achieved, or how debt and equity investors might consider issues such as availability. In particular, there is limited evidence that we can use to inform the assumptions in our quantitative analysis.
- Considering the interactions between different variations is challenging. We have considered this in our qualitative assessment; however, when undertaking our numerical analysis, we have not taken this into account. Notable examples of interaction between variations include that a broader definition of force majeure or a less stringent availability threshold might reduce the actual cost of debt that could be achieved.
- The two points above limit the scope of our analysis and of the assumptions used. There are also a number of wider uncertainties that have a bearing on our analysis, such as uncertainty over the number of projects that might request cap and floor variations in the future, and whether all of these projects will progress to construction (other external factors may mean projects are delayed or cancelled). We have taken a more conservative assumption in our IA by assuming that up to five projects with cap and floor approval will request project finance variations.

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<sup>24</sup> Pöyry benefits refers to the economic modelling used to reach our conclusions at the IPA stage.

## **Supporting information**

4.17. We have sought additional views and information to support our own review and assessment of the submissions provided by Greenlink and NeuConnect.

4.18. We commissioned PwC to support our assessment of the Greenlink and NeuConnect variation request submissions. The scope of PwC's work was limited to providing an initial review of:

- Developer submissions (analysis and evidence to support proposals);
- Impacts of the requested variations on the cap and floor levels (and broader consumer value); and
- The validity of, and justification for, the requested changes.

4.19. As part of this, PwC commented on whether the proposed variations may be required from the perspective of a project finance solution for the funding of the capital cost of the two interconnectors. PwC advised that:

- Variations 1 and 2 were seeking to address the most important issues raised by developers. Absent amendment to the default regime, project finance lenders would likely require alternative forms of liquidity to enable the use of project finance;
- There was a range of developer proposals for Variations 3 and 4, some of which need further consideration; and
- Variation 5 appeared to be non-essential from a project finance perspective, but could be considered further by Ofgem as a refinement to the equity/consumer relationship should it improve efficiency in some other way.

4.20. PwC also noted a number of areas where further detailed analysis could be provided or undertaken in future.

4.21. More information on how we have taken views and feedback from PwC and from potential lenders into account is included in our IA.

## 5. Our proposals and next steps

### Section summary

This section outlines our proposals for consultation and our next steps. At present, we are minded to approve a move to a shorter assessment period, to make changes to the minimum availability threshold at the floor, and to consider widening our force majeure definition if necessary. We are also minded to reject the proposed move to an actual cost of debt and gearing, and an extension of the regime duration.

We are seeking views on our proposals and more information on all requests from stakeholders.

### Questions

**Question 6: Do you agree with our proposed approval of the requests to reduce the default revenue assessment period, to make changes to the minimum availability threshold at the floor, and to broaden our definition of force majeure?**

**Question 7: Do you agree with our proposal to reject the requests to use a project-specific actual cost of debt and gearing, and to maintain a 25-year regime duration?**

**Question 8: Do you have any views on the conclusions from our draft IA, or our early thinking on risk mitigation?**

## Our initial views on requested changes

5.1. We have considered the key variations requested by Greenlink and NeuConnect in this consultation and in our accompanying IA. In this section, we provide views on each key variation, based on the following consultation positions:

- *Approve variation:* We are minded to approve this proposed change and are seeking views on our approval.
- *Neutral position:* We have not reached a minded-to position on this variation and we are seeking further views on the need for, and impact of, the proposed change.
- *Reject variation:* We are minded to reject this proposed change as we do not consider this to be in the interests of consumers.

5.2. Table 5 below provides our initial proposals for each key variation in turn.

**Table 5: Our initial proposals for consultation**

Variation	Our initial proposals
Variation 1: Reduce the default five-year revenue assessment period to one year	Approve variation.
Variation 2: Consider changes to the principle underpinning our minimum availability threshold of 80%	Approve variation; seeking further feedback on structure of changes.
Variation 3: Broaden our definition of force majeure events under the default regime	Approve variation.
Variation 4: Use project-specific actual cost of debt and gearing to set the cap and floor levels, rather than the default notional cost of debt and gearing	Reject variation. At this stage, we do not consider that there is sufficient evidence of necessity or benefit to justify the additional risk to consumers.
Variation 5: Maintain 25-year regime length	Reject variation. We do not consider that this is required for project finance and we think this would unduly increase consumer costs.

5.3. Our initial analysis suggests that we should accept Variation 1. We do not think that amending the assessment period would expose consumers to additional costs. This is a variation that we have considered throughout our regime development and we think the case for approving this is reasonably straightforward.

5.4. Variations 2, 3 and 4 are likely to be interrelated and evidence from developers and our own market soundings suggests that project finance would be difficult without at least some of these changes to the default regime. However, there is a range of solutions that could be adopted for Variations 2 and 3, each with different implications for consumer risk.

5.5. On balance, we are minded to approve changes to Variations 2 and 3. We consider that the current structure of the minimum availability threshold at the floor is likely to be problematic for debt lenders and that this could significantly increase financing costs, or could mean projects are not able to raise the debt financing necessary to progress.

- We are proposing to accept the regime variation requested by Greenlink and NeuConnect, and to change the structure of the threshold so that developers continue to be paid the floor in years where availability is below 80%, but that this is then repaid as a priority in years where revenues are above the floor. However, we think there are a number of ways that we could change the incentive to mitigate the risk to developers and consumers. We are also seeking further views from stakeholders on the specific changes we might make to the availability threshold at the floor to enable efficient project financing.
- We are proposing to accept the request to broaden our definition of force majeure. This interacts with Variation 2, above. We are prepared to consider and include such additional force majeure events as are necessary for enabling project finance funding for the interconnector projects. However, we will consider the specific drafting of this further alongside stakeholder feedback before reaching our final decision.

5.6. We are proposing to reject Variation 4. We recognise the issues flagged by developers and that using an actual cost of debt and gearing would more closely align the project's realised financing arrangements with the cap and floor regime. However, at this stage we do not consider that there is sufficient evidence of either the necessity of the variation, or the

benefit to consumers, to justify the additional consumer risk. Whilst we note that any additional consumer risk from using an actual cost of debt and gearing could be protected against in theory (as noted in paragraph 5.13), the requests from developers are not clear on how this risk could be managed in practice.

5.7. We do not consider that Variation 5 is justifiable because we think it is still possible to project finance for a shorter period, and we would expect any change to the default arrangements to involve consumers paying a floor for a longer period, exposing consumers to higher risk and potential costs. We are therefore minded to reject Variation 5.

### Conclusions from our draft IA

5.8. At this stage the numerical analysis in the draft IA suggests that a number of combinations of variations are likely to benefit consumers. The analysis supports our view that approving Variations 1, 2 and 3 (Option 3) offers the highest expected consumer benefits. This is primarily because it could reduce project delays and therefore increase the likelihood that consumers benefit from further interconnector capacity sooner than would otherwise be the case.

5.9. Our analysis also suggests that approving Variations 1 to 4 (Option 4) would benefit consumers. Whilst the upper bound of the range of our quantified analysis would suggest marginally more consumer benefit than our preferred option, the range of plausible benefit is greater. This suggests that the outcome is less certain and may present more risk for consumers.

5.10. As noted earlier, the modelling is inherently uncertain and it is important that when interpreting the results this uncertainty is acknowledged. The quantitative analysis included in our IA has limitations at this stage, particularly in relation to our probability ranges, where there is limited evidence to draw upon. We are seeking views on the approach we have taken to the analysis in our IA, including the assumptions that underpin the results. We are also seeking views on the scope of our analysis, and whether there are other aspects we should consider – either quantitatively or qualitatively – when reaching our final decisions.

5.11. We will update the scope and content of the analysis in our IA in light of views expressed in response to this consultation, and we will use the outcomes of our final IA to inform our final decisions.

### Risks, mitigation and thresholds

5.12. We recognise that each of the variations requested has the potential to alter the balance of risk between consumers, developers and financial investors. We are aiming to make sure that beneficial and efficient projects can progress, and that the financial solutions adopted help to drive efficiency and represent good value for money for consumers. Our IPA analysis highlighted the significant benefits to consumers if these projects are delivered.

5.13. We need to ensure that we strike a sensible balance when considering risk; however, our primary duty is to protect the interests of present and future energy consumers. As such, we have considered the extent to which we might apply conditions, mitigation actions or thresholds to our proposals. Some possible examples of these could include:

- Applying a threshold or maximum limit for variance from our default regime. This could potentially apply to variations such as using the actual cost of debt (eg a limit of a certain number of basis points above our default iBoxx index), or if we were to

consider changing our availability threshold (eg 10% lower than the existing threshold).

- Capping the cost of any variation, so that the actual realised additional cost does not exceed a fixed percentage – giving developers the space to reach an optimal arrangement of variations up to a cumulative cap.
- Ongoing roles for Ofgem, such as allowing an actual cost of debt as long as we provide oversight of a competitive financing competition and deem the process to have been efficiently managed.

5.14. We welcome stakeholder views on ways in which we could ensure an efficient balance of risk between consumers and developers, including through conditions and thresholds that we could apply to our final decisions.

## **Next steps**

### **Our consultation and decision on project finance variations**

5.15. This consultation will remain open for eight weeks, until 28 November 2019. We welcome responses at any point during the consultation period. We are not planning any public events or workshops, but we are open to meeting interested stakeholders to hear your views.

5.16. Following the consultation period, we will consider responses and will take these into account in reaching our final decision on whether to approve or reject the variations requested. Subject to the number and content of the responses, we are aiming to reach a final decision in early 2020.

5.17. We have also noted that both Greenlink and NeuConnect are continuing to seek confirmation on regulatory arrangements in the relevant connecting markets. In particular, our October 2018 update on the timing of Window 1 interconnectors highlighted that it would be beneficial to ensure our FPA stage can take account of the upcoming initial decision on the Greenlink application in Ireland.

5.18. We noted that we would work with the Commission for Regulation of Utilities (CRU), the Irish regulator, to explore the potential for an FPA process that takes both the GB and Irish regulatory decision-making processes into account, and for potentially symmetrical regulatory treatment at each side of the interconnector. We understand that the CRU is currently considering the appropriate regulatory regime for the Irish-regulated share of the project that is justified by public interest, such as a cap and floor regime for Greenlink.

5.19. We will continue to engage with both the CRU and Greenlink on approaches to regulation in Ireland. We aim to maintain some flexibility in our approach to applying the variations proposed in this consultation to Greenlink, in order to provide continued scope for cross-border regulatory alignment where appropriate.

5.20. We understand that the German ministry and regulator are continuing to consider the needs case for NeuConnect. We will continue to engage with the German authorities on the final regulatory arrangements for NeuConnect, including, where relevant, for our final decision on regime variations.



## **Final Project Assessments and Financial Close**

5.21. We have limited the scope of this consultation to considering the impacts of regime variation requests against the counterfactual of the existing regime. We have not revisited the needs case for Greenlink or NeuConnect at this stage, and we have not updated the economic modelling that we used to inform our IPA decisions.

5.22. As noted in Section 2, we placed a number of conditions on projects when making our IPA decisions. For the avoidance of doubt, those conditions still stand and this consultation does not change or supersede them. We therefore continue to expect both Greenlink and NeuConnect to progress in line with both the deadlines and the cost estimates that we have set out in our decisions to date. We may revisit our IPA analysis if this is not the case, to consider whether or not the projects continue to be in the interests of GB consumers. We may also revisit the needs case for NeuConnect if we think that changes in connecting country energy markets, or in cross-border trading arrangements, have changed in a way that could affect the potential consumer benefit.

5.23. We continue to assess the initial FPA information provided to us by Greenlink. We will need to finalise our assessment prior to the project reaching financial close. We also expect NeuConnect's FPA submission in 2020. We will also subsequently update the respective interconnector licences to give effect to our FPA decisions.

## Appendices

### Index

Appendix	Name of appendix	Page no.
1	Summary of our default regime design	35
2	Detailed overview of changes requested	42
3	Consultation questions	47
4	Privacy notice on consultations	48

## Appendix 1 – Summary of our default regime design

1.1. This appendix sets out the key regime aspects of our default cap and floor regime (as most recently applied to cap and floor Window 2 projects), as well as the main differences between the regime underpinning the Nemo Link project, Window 1 and Window 2 projects.

**Table A1: Key design features of the regime**

General aspects of the regime	
Regime duration and cap and floor start dates	<ul style="list-style-type: none"> <li>The regime duration is 25 years.</li> <li>The regime start date will be the earlier of the following:                             <ul style="list-style-type: none"> <li>the actual 'full commissioning date'</li> <li>12 months after the target (ie expected) completion date.</li> </ul> </li> <li>The cap level will come into effect automatically on the regime start date.</li> <li>The floor level will come into effect on the full commissioning date.</li> <li>Tests will be applied to identify the full commissioning date, and will include the completion of commissioning tests and procedures in line with good industry practice and the completion of a satisfactory proving period.</li> <li>If a force majeure occurs during construction and leads to construction delays, then Ofgem may delay the regime start date accordingly.</li> <li>Ofgem may also specify a floor start date ahead of the full commissioning date.</li> </ul>
Amount of project covered by the regime	<ul style="list-style-type: none"> <li>The GB cap and floor regime will cover 50% of the project (meaning 50% of total project costs and 50% of total project revenues).</li> </ul>
Cap and floor levels	<ul style="list-style-type: none"> <li>The cap and floor levels will be fixed in real terms for the regime duration, subject to specific adjustments and incentives set out below.</li> </ul>
Interconnector revenues	<ul style="list-style-type: none"> <li>All sources of interconnector revenue will be taken into account for assessment against the cap and floor levels.</li> <li>Certain 'market related costs' will be netted off revenues before comparison against the cap and floor levels (this gives the 'assessed revenue').</li> <li>Further details are in Table A2 below.</li> </ul>
Assessment period (assessing whether interconnector revenues are above the cap or below the floor)	<ul style="list-style-type: none"> <li>Each assessment period is five years. This means that the interconnector's 'assessed revenue' will be compared to the cap and floor levels on a net present value (NPV) neutral basis every five years.</li> <li>Each five-year assessment period shall be considered in isolation, with no carry overs between assessment periods.</li> <li>Where the interconnector's revenue is below the floor or above the cap (on a cumulative basis) during an assessment period, the developer may request a 'within-period adjustment' on the grounds of:                             <ul style="list-style-type: none"> <li>financeability; or</li> <li>pre-empting a material end of period adjustment.</li> </ul> </li> </ul> <p>Such a request can cover from year 1 up to year 4 of any five-year assessment period, but must reflect whole years only (not</p>

## Consultation on proposed changes to our electricity interconnector cap and floor regime to enable project finance solutions

	<p>partial years). Ofgem cannot request a within-period adjustment (ie only the developer can trigger a within-period adjustment).</p> <ul style="list-style-type: none"> <li>Any within-period adjustment will be subject to a true-up on a NPV neutral basis at the end of the relevant assessment period.</li> <li>The discount rate applied for the NPV-neutrality calculations (the operational discount rate) will be the simple arithmetic average of the floor return and the cap return (the calculations of these are set out further down in this table)</li> </ul>
Regulatory reporting	<ul style="list-style-type: none"> <li>Developers will be required to report annually during the operational phase on revenues, availability and costs.</li> <li>Developers will also be required to report during construction on construction progress and costs.</li> <li>This reporting must be in line with the 'regulatory instructions and guidance' (RIGs) issued by Ofgem.</li> </ul>
Cap and floor payments	<ul style="list-style-type: none"> <li>Cap and floor payments will be made between the developer and NGENSO as the system operator and will be recovered/distributed via the prevailing transmission charging arrangements</li> </ul>
Currency	<ul style="list-style-type: none"> <li>The cap and floor levels will be set in Sterling.</li> </ul>

**Table A2: Calculating the cap and floor levels**

Key principles for the cap and floor levels	
Building blocks approach	<ul style="list-style-type: none"> <li>The cap and the floor levels will be built from building blocks of capital costs, operations and maintenance costs, decommissioning costs, tax and allowed return.</li> <li>The cap and floor levels will be profiled so that they are flat over time in real terms.</li> </ul>
Indexation of the cap and floor levels	<ul style="list-style-type: none"> <li>Cap and floor levels are indexed by RPI.<sup>25 26</sup></li> </ul>
Availability incentive	<ul style="list-style-type: none"> <li>The cap level will be adjusted annually by up to +/-2% if interconnector availability exceeds or falls short of a target availability level. This means that availability above (or below) the target level will result in a one-for-one percentage increase (or decrease) in the cap level, up to +/- 2%.</li> <li>The target availability level (in MWh) will be set by Ofgem on a project by project basis according to an established methodology.<sup>27</sup></li> <li>Developers will lose automatic eligibility for floor payments for each individual year if availability is below 80% in that year.</li> <li>Ofgem will retain the discretion to reinstate eligibility for floor payments if the outage that caused availability to fall below 80% was caused by an 'exceptional event' (eg force majeure).</li> </ul>
Approach to capital costs	

<sup>25</sup> More information on this topic is contained in our October 2015 letter regarding indexation of future Offshore Transmission Owner and Interconnector licenses:

[https://www.ofgem.gov.uk/sites/default/files/docs/2015/10/open\\_letter\\_indices\\_14oct\\_finalv2\\_0.pdf](https://www.ofgem.gov.uk/sites/default/files/docs/2015/10/open_letter_indices_14oct_finalv2_0.pdf)

<sup>26</sup> More information is contained in our March 2016 decision letter on indexation:

[https://www.ofgem.gov.uk/system/files/docs/2016/03/decision\\_letter\\_ofgem\\_indexation\\_310316\\_final.pdf](https://www.ofgem.gov.uk/system/files/docs/2016/03/decision_letter_ofgem_indexation_310316_final.pdf)

<sup>27</sup> This will be based on the SKM methodology, available here:

[https://www.ofgem.gov.uk/sites/default/files/docs/2013/03/skm-report---calculating-target-availability-figuresfor-hvdc-interconnectors\\_0.pdf](https://www.ofgem.gov.uk/sites/default/files/docs/2013/03/skm-report---calculating-target-availability-figuresfor-hvdc-interconnectors_0.pdf)

<p>Capital costs</p>	<ul style="list-style-type: none"> <li>• Capital costs are defined as the following items: <ul style="list-style-type: none"> <li>- development expenditure (devex)</li> <li>- construction capex</li> <li>- spares</li> <li>- replacement (life-cycle) expenditure (repex)</li> <li>- interest during construction (IDC)</li> <li>- financial transaction costs</li> </ul> <p>Combined, these items give the regulatory asset value (RAV) which reflects the cost of building the interconnector</p> </li> <li>• Allowances for capital costs will be determined by either a cost assessment or benchmark approach, as follows: <ul style="list-style-type: none"> <li>- allowances for devex, construction capex, spares and repex will be determined by cost assessment. This means we will consider the developer’s actual costs and undertake an assessment of the efficiency of those costs (we will only allow efficient costs). This will include a public consultation.</li> <li>- IDC and financial transaction costs will be determined by applying a benchmark approach (discussed further below).</li> </ul> </li> <li>• Capital costs allowances will be determined at three principal stages: <ul style="list-style-type: none"> <li>- the Final Project Assessment (FPA) stage, undertaken before construction;</li> <li>- the project’s Final Investment Decision (FID), where we update the relevant financial parameters; and</li> <li>- the Post Construction Review (PCR) stage, undertaken after construction.</li> </ul> </li> </ul>
<p>Interest During Construction (IDC)</p>	<ul style="list-style-type: none"> <li>• IDC will be treated as a capital cost incurred in the construction phase.</li> <li>• IDC for construction delays will not be included.</li> <li>• The IDC rate (%) is calculated as follows: <math display="block">IDC = WACC + DRP + CRP</math> <p>Where:  WACC = weighted average cost of capital (see below)  DRP = development risk premium  CRP = construction risk premium</p> </li> <li>• The WACC during construction is calculated as follows: <math display="block">WACC = CoD \times G + CoE \times (1 - G)</math> <p>Where:  CoD = cost of debt (%)  G = assumed (notional) gearing level  CoE = cost of equity (%)</p> </li> <li>• The cost of debt and equity will be calculated as described below in this table.</li> </ul>

## Consultation on proposed changes to our electricity interconnector cap and floor regime to enable project finance solutions

	<ul style="list-style-type: none"> <li>• Our current methodology is described in our May 2019 decision on the methodology for the calculation of IDC.<sup>28</sup></li> <li>• The IDC (%) will be determined at the FID stage. The final allowance (£) will reflect the final RAV at the PCR stage (initial values will also be specified at the FPA and FID stages).</li> </ul>
Financial transaction costs (costs of raising finance)	<ul style="list-style-type: none"> <li>• An allowance for financial transaction costs will be determined by Ofgem in accordance with an established methodology. Our current methodology is set out in our May 2014 consultation document for the first window and may be updated from time to time.<sup>29</sup> If we update the methodology, this will include public consultation.</li> <li>• The financial transaction costs (%) will be determined at the FID stage. The final allowance (£) will reflect the final RAV at the PCR stage (initial values will also be specified at the FPA and FID stages).</li> </ul>
Financial assistance	<ul style="list-style-type: none"> <li>• Any grants will be netted off the project investment costs that are used to set the cap and floor levels.</li> </ul>
Depreciation and annuitisation of capital costs	<ul style="list-style-type: none"> <li>• Capital costs will be depreciated on a straight line basis over the 25 years of the regime.</li> <li>• This will then be annuitised to make the cap and floor levels constant in real terms over the regime.</li> </ul>
Decommissioning costs	<ul style="list-style-type: none"> <li>• The developer will provide a forecast of decommissioning costs and we will undertake an assessment of the efficiency of the proposed costs (we will only allow efficient costs).</li> <li>• A 'baseline' allowance for decommissioning costs will be included in the cap and floor levels. This baseline allowance will reflect the legislative requirements relating to decommissioning the interconnector that are in place at the FPA/PCR stage.</li> <li>• Should changes in legislative requirements related to decommissioning occur, this will be treated as 'non-controllable'. This means that, should the developer become exposed to additional (or reduced) costs as a consequence of the change in legislative requirements, the difference in costs will be passed through as an adjustment (whether upwards or downwards) of the cap and floor levels. We will undertake an assessment of the difference in cost (we will only allow efficient costs).</li> <li>• Where consumers have incurred decommissioning costs for the interconnector (above cap/below floor), these will be taken into account in future decisions on the operation of the interconnector beyond the 25 years regime, and the regulation to be applied to the interconnector at that time.</li> </ul>
Operating costs	<ul style="list-style-type: none"> <li>• The developer will provide a forecast of operating (including maintenance) costs and we will undertake an assessment of the efficiency of the proposed costs (we will only allow efficient costs).</li> </ul>

<sup>28</sup> Decision on 2019-20 Interest During Construction (IDC) rates for offshore transmission projects and cap and floor interconnectors:

<https://www.ofgem.gov.uk/publications-and-updates/decision-2019-20-interest-during-construction-idc-rates-offshore-transmission-projects-and-cap-and-floor-interconnectors>

<sup>29</sup> The May 2014 consultation document is available here: <https://www.ofgem.gov.uk/publications-and-updates/regulation-future-electricity-interconnection-proposal-roll-out-cap-and-floor-regime-near-term-projects>

It sets out an allowance of 2.5% on notional gearing for debt and 5% on notional equity. Here, we assume 50% notional gearing during the operational phase and we use the gearing assumption from the IDC calculation during the construction phase.

## Consultation on proposed changes to our electricity interconnector cap and floor regime to enable project finance solutions

	<ul style="list-style-type: none"> <li>Operating costs may be reviewed and re-set once during the regime and no earlier than 10 years into the regime. Either party (the developer or Ofgem) may trigger the review. This may lead to adjustment (upwards or downwards) of the cap and floor levels.</li> </ul>
Non-controllable operating costs	<ul style="list-style-type: none"> <li>Certain operating costs will be treated as 'non-controllable'.</li> <li>These are defined as: <ul style="list-style-type: none"> <li>The Crown Estate lease fees or property rates and property taxes;</li> <li>licence fees; and</li> <li>network rates.</li> </ul> </li> <li>A 'baseline' allowance will be included in the cap and floor levels. This will reflect Ofgem's determination of the economic and efficient costs for these items at the PCR stage.</li> <li>Any changes in the economic and efficient costs for these items relative to the baseline allowance (whether upwards or downwards) will be passed through as a revenue adjustment at the end of each five-year assessment period. This will be done regardless of where the interconnector's revenue is in relation to the cap and floor levels.</li> </ul>
Force majeure events	<ul style="list-style-type: none"> <li>If, during the regime, the developer experiences a force majeure event, it may claim efficient costs caused by the event (eg repair costs).</li> <li>Where developers make a claim, we will undertake an assessment of the efficiency of the costs (we will only allow efficient costs).</li> <li>If we accept that the interconnector has incurred costs as a consequence of a force majeure event, the costs will be netted off the interconnector's revenue for the purposes of assessing against the cap and floor levels (to the extent that the net figure is not less than zero).</li> <li>This will be given effect in the licence as an "income adjusting event".</li> </ul>
Tax	<ul style="list-style-type: none"> <li>Allowances for tax at both the cap and the floor will be determined using the UK tax regime.</li> <li>Tax will be annuitised and added to the annuitised cap and floor levels of all costs other than the tax allowance.</li> <li>Allowances for tax (%) will be determined at the FID stage. The final allowance (£) will reflect the RAV at the FPA stage (there will be no re-opener for changes RAV at the PCR stage).</li> <li>For the avoidance of doubt, there will be no re-openers for changes to tax treatment.</li> </ul>
Cost of debt (return at the floor)	<ul style="list-style-type: none"> <li>An allowance for a return at the floor will be calculated by applying the cost of debt benchmark to 100% of the RAV.</li> <li>The benchmark will be calculated using a 20-day trailing average of the GBP Non-Financial iBoxx index of bonds with 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.</li> <li>As a default the RPI index will be used, although developers may propose alternative indexation.</li> <li>The return at the floor (%) will be determined at the FID stage. The final allowance (£) will reflect the final RAV at the PCR stage (initial values will also be specified at the FPA and FID stages).</li> </ul>
Cost of equity (return at the cap)	<ul style="list-style-type: none"> <li>An allowance for a return at the cap will be determined as the cost of equity, calculated in accordance with the capital asset pricing model (CAPM) as follows: <math display="block">CoE = RFR + MRP \times EB</math> </li> </ul>

	<p>Where:  CoE = cost of equity (return at the cap)  RFR = the risk free rate = the 10 year trailing average of real zero coupon Gilts  MRP = the market risk premium  EB = the equity beta.</p> <ul style="list-style-type: none"> <li>The market risk premium is calculated as follows:</li> </ul> $MRP = TMR - RFR - RPIA$ <p>Where:  MRP = the market risk premium  TMR = the total market return, taken from Credit Suisse  RFR = the risk free rate  RPIA = the RPI adjustment, taken from the Office of National Statistics (ONS)<sup>30</sup></p> <ul style="list-style-type: none"> <li>The equity beta is derived by Ofgem from comparator companies in accordance with an established methodology. Our current methodology is set out in our 2014 consultation document for the Window 1 and may be updated from time to time.<sup>31</sup> If we update the methodology, this will include public consultation.</li> <li>The return at the floor (%) will be determined at the FID stage. The final allowance (£) will reflect the final RAV at the PCR stage (initial values will also be specified at the FPA and FID stages).</li> </ul>
Re-financing	<ul style="list-style-type: none"> <li>Re-financing gains (or losses) will be retained by the developers.</li> </ul>
<b>Assessing interconnector revenues</b>	
Interconnector revenue	<ul style="list-style-type: none"> <li>All sources of interconnector revenue will be taken into account for assessing against the cap and floor levels. This includes, for example, revenue from: <ul style="list-style-type: none"> <li>capacity allocation in accordance with European network codes;</li> <li>capacity market; and</li> <li>provision of ancillary services.</li> </ul> </li> <li>Revenues as a result of products/services sold in both GB and the partner country will be included.</li> <li>Receipts that substitute revenue will also be included, for example: <ul style="list-style-type: none"> <li>business interruption insurance; and</li> <li>constraint payments.</li> </ul> </li> </ul>
Market related costs	<ul style="list-style-type: none"> <li>Market related costs' will be netted off revenues before comparison against the cap and floor levels, to the extent that the net figure is not less than zero.</li> </ul>

<sup>30</sup> As noted above, developers may propose alternative indexation.

<sup>31</sup> The May 2014 consultation document is available here:

[https://www.ofgem.gov.uk/sites/default/files/docs/2014/05/regulation\\_future\\_interconnection\\_cap\\_and\\_floor\\_0.pdf](https://www.ofgem.gov.uk/sites/default/files/docs/2014/05/regulation_future_interconnection_cap_and_floor_0.pdf) It sets out an equity beta of 1.25, derived from Drax.



## Consultation on proposed changes to our electricity interconnector cap and floor regime to enable project finance solutions

	<ul style="list-style-type: none"> <li>Market related costs are defined as: firmness costs (under the capacity allocation and congestion management (CACM) European network code), error accounting costs and trip contract costs.</li> </ul>
Low availability years	<ul style="list-style-type: none"> <li>In years where the developer has not achieved 80% availability, only revenues above the floor level will be carried over into the assessment of revenues against the floor level.</li> </ul>

1.2. The regime design described above underpins the regulatory framework governing Window 2 projects, which are currently under development. This is now our default regime. Nevertheless, a few changes have been made to the regime design since the initial roll out of the cap and floor regime for Nemo Link and subsequently for Window 1 projects in 2014. The table below summarises the major changes. The regime design provisions relevant for each project will be those in place for the relevant Window (or separately for Nemo Link as a pilot project).

**Table A3: Key differences in cap and floor regime implementation**

Item	Nemo Link	Cap and floor Window 1	Cap and floor Window 2
Regime start date	12 months after the target completion date	Earlier of the following: <ul style="list-style-type: none"> <li>1 January 2021</li> <li>commissioning date</li> </ul>	Earlier of the following: <ul style="list-style-type: none"> <li>commissioning date</li> <li>12 month after the target completion date (at time of IPA)</li> </ul>
Delays to the regime start date		Delays to regime start date excluded if due to force majeure	If a force majeure occurs during construction and leads to construction delays, then Ofgem may delay the regime start date accordingly.
Interest During Construction (IDC)	<ul style="list-style-type: none"> <li>IDC set at FID.</li> <li>Development risk premium uplift of 0.54%</li> <li>Construction risk premium uplift of 0.91%</li> <li>Gearing and beta based on four comparator firms</li> </ul>	No changes from Nemo framework.	<ul style="list-style-type: none"> <li>IDC set annually.</li> <li>Development and construction premiums removed<sup>32</sup></li> <li>Comparator firms expanded to 30 for beta</li> <li>Introduced a fixed gearing of 37.5%</li> </ul>

<sup>32</sup> As per our decision on the Initial Project Assessment of the GridLink, NeuConnect and NorthConnect interconnectors:  
[https://www.ofgem.gov.uk/system/files/docs/2018/01/window\\_2\\_ipa\\_final\\_decision.pdf](https://www.ofgem.gov.uk/system/files/docs/2018/01/window_2_ipa_final_decision.pdf)

## **Appendix 2 – Detailed overview of changes requested**

1.1. This appendix provides a more detailed overview of changes requested by developers, the rationale for requesting these changes, and a discussion of potential alternative options and feedback between variations.

1.2. We are seeking feedback from stakeholders on our proposals as set out in Section 5. We are also seeking any additional views on the requests from developers as set out in this appendix.

### **Variation 1: Reduce the default five-year revenue assessment period to one year**

1.3. As noted in Appendix 1, the default cap and floor regime includes five five-year assessment periods. Each of these assessment periods is standalone. Total revenues are only compared against the cumulative cap and floor levels at the end of the five years – meaning that particularly good or bad years, from a revenue perspective, might cancel out.

1.4. The default regime design also includes a within-period adjustment mechanism. This is discretionary, but allows developers to request a payment if they expect a shortfall of revenue in any given year and if this payment is required for financeability reasons (or if they expect to have earned significantly above the cap). If we decide to allow a within-period adjustment, any payment to or from consumers is then taken into account and reconciled at the end of the five-year assessment period on an NPV-neutral basis.

1.5. Both developers have requested that the default regime is reduced from five years to one year. They have suggested that a project finance solution is likely to require regular annual repayments to debt lenders, and that annual floor payments are required to ensure that if revenues are below the floor this debt servicing can continue to take place. This would also reduce volatility and complexity when compared with consolidating on a five-yearly basis. Developers have noted that the current regime does allow for annual payments (via the within-period adjustment mechanism), but have suggested that this is at Ofgem's discretion and that fixed annual periods are likely to be simpler for both financing and for ongoing regime administration.

1.6. We have considered whether there is scope for other solutions to the issue highlighted by developers, but we think annual assessment periods are likely to be the simplest solution. We have also considered overlap or feedback with the other key regime variations requested by developers. We think this is a standalone variation request and that the scope for interaction with other requested variations is limited.

### **Variation 2: Consider changes to the principle underpinning our minimum availability threshold of 80%**

1.7. Greenlink has requested that we allow the interconnector to receive floor payments in all years, and to then repay consumers on an NPV-neutral basis for payments received in years where availability is below 80%. They have noted that any consumer 'liabilities', or monies owed, would be net from revenues above the floor in subsequent years until consumers are repaid on an NPV-neutral basis. Greenlink has also proposed extending the regulatory period to ensure consumer repayments if this is required.

1.8. The regime variation requested by NeuConnect is slightly different. NeuConnect has requested a similar loan-type mechanism, whereby payments continue in years where availability is below the 80% threshold in order to service debt repayments. However, NeuConnect has suggested a proportion of this is repaid in future periods where revenues are

above the floor. NeuConnect has also requested that we reverse our default position with regard to the determination of exceptional events at the floor, so that we continue to pay the floor as default until Ofgem determines that an outage has not been an exceptional event, at which point it would be removed or repaid.

1.9. The requests made by both developers aim to change the binary nature of the availability threshold that exists in the default regime design. They have both suggested this is a significant issue for the bankability of a project and therefore its ability to access project financing solutions. The developers have suggested that they cannot guarantee that annual debt servicing repayments will be made if there are years in which availability falls below the 80% threshold (therefore making the project ineligible for a floor payment in that year), and that this is a particular concern if project revenues are also low as a result of unavailability.

1.10. There are a number of other options that could be considered that may reduce or remove the concern raised by developers. These could include:

- Maintaining the default availability threshold, but with a lower annual threshold than the existing 80%. This would be closest to the default design and would broadly maintain the incentives on developers. However, this would reduce the level of availability required and may therefore offset some concern about the binary nature of the incentive.
- Maintaining the default availability threshold, but with a maximum proportion for the level of floor payments forfeit. This changes the nature of the incentive – it becomes less of a binary ‘cliff edge’ if some of the floor is still available even if the availability target is missed. This option would be similar to the default regime design in our OFTO framework.
- Removing the automatic nature of the floor ‘switching off’ if the availability threshold target is not met. At present, the floor is only reinstated if availability is below the 80% threshold once we issue a direction, even in force majeure situations. If this were reversed – so the floor was paid unless or until we issued a direction to remove it – this could increase certainty and reduce administrative delays (which could occur in force majeure situations at present).

1.11. This variation request overlaps with Variations 3 and 4 in particular:

- The force majeure definition interacts with changes to the availability threshold at the floor. This is because force majeure events are excluded from the calculation of availability performance against the threshold.
- Developers have noted that the binary nature of the default availability threshold is problematic for debt lenders, which will aim for stable and predictable returns. It is therefore likely that changes to the minimum availability threshold (such as the proposal to allow floor payments in each year, but with payback for years where availability has been lower than 80%) will reduce the actual cost of debt achieved and will increase the potential gearing of projects.

**Variation 3: Broaden our definition of force majeure events under the default regime**

1.12. Greenlink has requested that we amend the drafting of force majeure in the licence to capture types of incidents that do not currently fit within the force majeure definition, but which are beyond the direct control of developers and operators. Greenlink has suggested that, as insurance revenues are accounted for when assessing revenue against the cap and floor, this change would only have the effect of ensuring protection against uninsurable and uncontrollable events.

1.13. NeuConnect has requested similar changes to Greenlink. NeuConnect has also requested that floor payments continue by default until Ofgem makes a final determination on whether a particular event qualifies as force majeure (as also noted in Variation 2 above).

1.14. Both Greenlink and NeuConnect are concerned that the drafting of force majeure in the existing licences (NSL and Nemo Link) may not capture some events that are beyond the control of developers or operators and/or are caused by third parties, and which may not be covered by insurance. For instance, Greenlink have highlighted potential events relating to damage from anchor drag or storms, and NeuConnect have also highlighted strike, lockout or industrial disturbance, and changes in law in connecting countries.

1.15. There are a number of other options that could be considered that may reduce or remove the concern raised by developers. As a minimum, as highlighted by Greenlink, some of these events are expected to be insurable, and therefore should not materially affect developer revenues. NeuConnect has additionally considered a more general broadening of the definition, but has proposed to include specific events rather than adopt an even broader definition. Where you consider changes to our current force majeure definition are required, please explain the specific changes and rationale as to why.

1.16. This variation request could potentially impact on Variations 2 and 4:

- Our current force majeure definition determines exceptional events, which are then excluded from the calculation of availability at the floor. This suggests strong feedback between Variations 2 and 3.
- Both developers have suggested that more clarity over events beyond the control of developers and operators (via a broader force majeure definition) would improve financeability and increase the level of interest and competition from debt lenders. They have suggested that this in turn may lead to a lower project-specific actual cost of debt (Variation 4).

**Variation 4: Use project-specific actual cost of debt and gearing to set the cap and floor levels, rather than the default notional cost of debt and gearing**

1.17. Greenlink has requested that we use the actual cost of debt and project gearing when calculating floor returns, tax cost allowances and IDC. In addition, they have requested that we include reserve accounts that may be required by lenders under a project finance solution as part of the opening RAV.

1.18. NeuConnect has also requested that the notional iBoxx index used to set the floor is replaced by a project-specific actual cost of debt. However, NeuConnect has not requested that this applies only to the debt-gearred portion of the floor. NeuConnect has instead requested that the return on equity at the floor is calculated to ensure that floor payments meet lenders' financeability requirement. NeuConnect's request mirrors Greenlink's in requesting that the actual cost of debt and gearing would apply to floor returns, IDC rate and tax allowances.

1.19. Both developers have requested that this proposal to use actual project-specific cost of debt also includes other aspects of final lender financeability requirements, such as using actual gearing, matching debt service cover ratios, and other factors. Both developers have also proposed Ofgem oversight of the competitive financing processes that would generate project-specific financing costs, to ensure that these processes are efficiently managed.

1.20. Greenlink and NeuConnect have both suggested that using a cost of debt benchmark is not appropriate for a project finance solution where the actual cost of debt will be determined through a financing competition. Developers have noted that the iBoxx-derived cost of debt used in the default regime might not be sufficient to cover the achieved cost of debt and to meet lender requirements. This would mean that the financing solution and regulatory solution do not fully align, and developers have suggested that this would either increase equity risk or that lenders may not lend to the project, as they may perceive that this materially increases risk.

1.21. There are limited alternatives to using an actual cost of debt and gearing, although we note that this could be used in any combination of the floor allowances, the IDC rate or tax allowances – or all three. We have also noted above that the relationship between cost of debt and gearing has been considered differently:

- Greenlink has suggested applying the actual cost of debt only to the debt-gearred portion of the RAV in order to set the floor.
- NeuConnect has suggested return on equity at the floor (and therefore the way the cost of debt applies to project gearing) is calculated directly on the basis of the final financing solution.
- Neither developer has requested that the actual cost of debt applies to 100% of the RAV (as the iBoxx cost of debt does in the default regime), although theoretically this would be a third option.

1.22. Whilst a number of the other variations would interact with Variation 4 (by affecting the achieved actual cost of debt), this is a reasonably standalone variation. Any changes to the calculation of cost of debt would not materially impact the other variations.

### **Variation 5: Maintain 25-year regime length**

1.23. Greenlink has requested that we adjust the regime start date to align with commissioning of the project and such that the cap and floor is available for the full 25 year period. This would have the effect of removing our provision in the default regime that reduces the duration of the cap and floor regime by the length of delays in commissioning.

1.24. NeuConnect's variation request is slightly different. NeuConnect has requested that our current regime start date definition is maintained, but with additional provision for Ofgem to agree a later date if we deem that a later regime start date would be in the interests of consumers (for example if a longer construction period reduced costs); or if force majeure events cause delays. NeuConnect has also requested that we allow IDC for any delays beyond our default regime start date.

1.25. Both developers have highlighted that a longer debt period, or tenor, would be possible if the variation request were granted. They have suggested that this variation could lower the actual cost of debt, or could increase the different sources of finance available. Greenlink have also noted this may increase alignment between regulatory frameworks in connecting

countries. Both developers have also noted that this would provide an opportunity to restore the default regime length of 25 years, which may have shortened due to factors beyond the immediate control of developers.

1.26. Greenlink and NeuConnect have both suggested that there is an interaction between Variations 4 and 5, insofar as a longer regime duration could reduce an actual cost of debt achieved in a competitive financing process.

## **Appendix 3 – Consultation questions**

This appendix provides a full list of questions included in this consultation.

We've asked for your feedback in each of the questions throughout. Please respond to each one as fully as you can. We will publish non-confidential responses on our website at [www.ofgem.gov.uk/consultations](http://www.ofgem.gov.uk/consultations).

### **Section 3 – Overview of regime variations requests**

Question 1: Do you have any views on the project finance variations requested by developers?

Question 2: Do you agree with our categorisation of key and additional variations? Are there any additional factors we should consider?

Question 3: Is there additional evidence that we should take into account when considering the implications for consumers and developers of either granting or rejecting the key variation requests?

### **Section 4 – Our assessment framework and Impact Assessment**

Question 4: Is our approach to assessing the costs, risks and benefits of project finance variations suitable? Are there any additional factors that we should build into our assessment?

Question 5: Do you have any views on the specific qualitative or quantitative analysis published in our Impact Assessment?

### **Section 5 – Our proposals and next steps**

Question 6: Do you agree with our proposed approval of the requests to reduce the default revenue assessment period, to make changes to the minimum availability threshold at the floor, and to broaden our definition of force majeure?

Question 7: Do you agree with our proposal to reject the requests to use a project-specific actual cost of debt and gearing, and to maintain a 25-year regime duration?

Question 8: Do you have any views on the conclusions from our draft IA, or our early thinking on risk mitigation?

## **Appendix 4 – Privacy notice on consultations**

### **Personal data**

The following explains your rights and gives you the information you are entitled to under the General Data Protection Regulation (GDPR).

Note that this section only refers to your personal data (your name address and anything that could be used to identify you personally) not the content of your response to the consultation.

### **The identity of the controller and contact details of our Data Protection Officer**

The Gas and Electricity Markets Authority is the controller (for ease of reference, "Ofgem"). The Data Protection Officer can be contacted at [dpo@ofgem.gov.uk](mailto:dpo@ofgem.gov.uk)

### **Why we are collecting your personal data**

Your personal data is being collected as an essential part of the consultation process, so that we can contact you regarding your response and for statistical purposes. We may also use it to contact you about related matters.

### **Our legal basis for processing your personal data**

As a public authority, the GDPR makes provision for Ofgem to process personal data as necessary for the effective performance of a task carried out in the public interest i.e. a consultation.

### **Your rights**

The data we are collecting is your personal data, and you have considerable say over what happens to it. You have the right to:

- know how we use your personal data
- access your personal data
- have personal data corrected if it is inaccurate or incomplete
- ask us to delete personal data when we no longer need it
- ask us to restrict how we process your data
- get your data from us and re-use it across other services
- object to certain ways we use your data
- be safeguarded against risks where decisions based on your data are taken entirely automatically
- tell us if we can share your information with 3<sup>rd</sup> parties
- tell us your preferred frequency, content and format of our communications with you
- to lodge a complaint with the independent Information Commissioner (ICO) if you think we are not handling your data fairly or in accordance with the law. You can contact the ICO at <https://ico.org.uk/>, or telephone 0303 123 1113.

**Your personal data will not be sent overseas.**

**Your personal data will not be used for any automated decision making.**

**Your personal data will be stored in a secure government IT system.**

### **More information**

For more information on how Ofgem processes your data, click on the link to our [Ofgem privacy promise](#).