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Decision

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

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This document sets out our final decision on proposed changes to our cap and floor regulatory framework for electricity interconnectors. These changes will apply to two projects under development by Greenlink Interconnector Limited (Greenlink) and NeuConnect Britain Limited (NeuConnect). Both developers have requested these changes to broaden the sources of financing available for them to progress their projects through development and construction.

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Executive summary

Introduction

We[1] regulate new interconnector development in Great Britain (GB) through 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. This is to enable developers to attract the required private financing for their projects to continue through construction and operation.

We received regime variations submissions from Greenlink and NeuConnect[2] in March 2019. We carried out a draft Impact Assessment (IA) and determined that some of the variations will have consumer impacts that were not accounted for when we initially approved the projects under the regime. In October 2019, we consulted on our draft IA of the proposed variations and on our minded-to decision[3]. This document sets out our final decision on the variation requests and our implementation process for these two projects. Unless otherwise specified, our decision does not modify the arrangements under the default regime for other cap and floor projects.

Principles guiding our decision

We consider that enabling alternative sources of finance is, in principle, in the interests of GB consumers as it provides access to a broader pool of capital, and promotes competition in the interconnector market. However, project developers need to demonstrate that any regime variations are in the interests of consumers and Ofgem has to ensure that only necessary and well-justified changes are made. We also aim to ensure that any approved variations do not materially change the risk-reward balance of the default cap and floor regime, and as such do not unduly disadvantage interconnector projects progressing under the default regime.

We have considered the costs and benefits of approving individual variations, but have also assessed combinations of variations to test the cumulative impact. We have considered the impact that variations would have on the regime as a whole. Our decision aims to maintain the overall risk balance of the cap and floor regime to the extent possible, whilst ensuring consumers can realise the potential benefits of further interconnection as soon as possible.

[1] 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
[2] Greenlink (a proposed 0.5GW interconnector to Ireland and planned for commissioning in 2023) and NeuConnect (a proposed 1.4GW interconnector to Germany and planned for commissioning in 2023).
[3] Consultation on proposed changes to our electricity interconnector cap and floor regime to enable project finance solutions (October 2019): https://www.ofgem.gov.uk/publications-and-updates/consultation-proposed-changes-our-electricity-interconnector-cap-and-floor-regime-enable-project-finance-solutions

Overview of our decision

Our decision on the key variations that we identified in our consultation is set out below:

- **Variation 1:** Developers have requested an annual assessment process to align with the annual debt repayment obligations that they expect. A yearly assessment of interconnector revenues against the floor level will ensure that developers are able to access any consumer payments annually when this is necessary.
- **Variation 2:** 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 a Net Present Value (NPV-neutral) basis for consumer payments received in years where availability is below 80%.
- **Variation 3:** Developers have requested that we should broaden the definition of force majeure used in the default regime to cover more events.
- **Variation 4:** Developers have requested that we should calculate the cap and floor levels and Interest During Construction (IDC) based on the actual funding measures (cost of debt and gearing) resulting from a competitive debt raising process.
- **Variation 5:** Developers have requested that Ofgem should maintain the default 25-year regime length where projects are delayed 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).

We have decided to maintain our consultation position to **approve (iterations of) Variations 1, 2 and 3,** as evidence indicates that these variations are necessary to broaden the range of financing available to the developers. When approving Variation 1, we are also considering allowing the use of revenue forecasts to reduce delay in the revenue assessment and payment process via National Grid Electricity System Operator (NGESO). We will explore this in more detail as we implement the regime variations.

We have also decided to **approve aspects of Variation 4** - this is a change of position relative to our consultation. We will give developers the possibility to choose between maintaining our notional cost of debt approach to set the revenue floor (and slightly changing the default index used) or using actual cost of debt and gearing to set the revenue floor and to calculate IDC.

We have decided to maintain our consultation position to **reject Variation 5**, as developers did not demonstrate that applying Variation 5 is in the interest of consumers. We consider that default regime provisions are sufficient to address developers' concerns.

Expected consumer impact

We have updated our draft IA by acting on feedback from consultation responses. Our final IA shows that accepting Variations 1 to 4 for Greenlink and NeuConnect is expected to generate **consumer benefits of £569million to £910million** compared to not accepting any variations. When we limit the worst-case downside of Variation 4, however, the risk of exposure for consumers is reduced. Under this scenario, **consumer benefits could be in**

the range of £717million to £1,006million. These figures are expressed in NPV terms over the 25 years of the regime.

1. Introduction

Our cap and floor regime and variations policy

1.1. This document sets out our decision on variations to our cap and floor regime that Greenlink and NeuConnect have requested.

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

1.3. As part of the regime policy, developers may request changes to the default regime 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.[4]

1.4. We published an open letter in December 2015[5] setting out guidance to developers considering requests for variations to the default cap and floor regime design and describing the criteria for completeness that submissions needed to meet.

What we are making a decision on?

1.5. We received initial variation submissions from Greenlink and NeuConnect in December 2018 and supplementary information in February and March 2019. In October 2019, we consulted on the proposed variations to the default regime. Our consultation closed in November 2019.

1.6. We have now reached a decision on the requested variations as set out in Section 2. Where any additional requested changes are closely related to a key variation (such as using forecast revenues to reduce payment delays or provisioning for reserve account to meet lending requirements), we have also set this out in our decision where applicable.

1.7. As set out in the consultation, our decision applies to the Greenlink and NeuConnect interconnectors only. We are aware that other cap and floor projects may request variations to the default regime in the 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 to be able to make any future decisions, and any such decisions will be made on a project-specific basis following our assessment.

[4] The regulation of future electricity interconnection: Proposal to roll out a cap and floor regime to near-term projects (May 2014): https://www.ofgem.gov.uk/sites/default/files/docs/2014/05/regulation_future_interconnection_cap_and_floor_0.pdf

[5] 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

Structure of this document

1.8. The rest of this document is structured as follows:

- **Section 2 – Overview of our regime variations decision**: provides a summary of our decision on the requested regime variations and describes the principles we followed to reach our decision.
- **Section 3 – Key issues raised in consultation responses:** addresses the key issues raised in response to our October 2019 consultation.
- **Section 4 – Assessment of requests and decision implementation:** provides a summary of our assessment of the requested variations, and sets out how we propose to implement them and next steps.
- **Section 5 – Appendices:** sets out supporting information.

Related publications

Consultation on proposed changes to our electricity interconnector cap and floor regime to enable project finance solutions (published October 2019): https://www.ofgem.gov.uk/system/files/docs/2019/10/regime_variation_condoc_-_031019_1.pdf

Decision on the Initial Project Assessment of the GridLink, NeuConnect and NorthConnect interconnectors (published January 2018): https://www.ofgem.gov.uk/system/files/docs/2018/01/window_2_ipa_final_decision.pdf

Cap and floor regime: Initial Project Assessment of the GridLink, NeuConnect and NorthConnect Interconnectors (published June 2017): https://www.ofgem.gov.uk/system/files/docs/2017/06/ofgem_window2_ipaconsultation_june_2017.pdf

Near-term interconnector cost and benefit analysis (report from Pöyry 2017): https://www.ofgem.gov.uk/system/files/docs/2018/01/near-term_interconnector_cost_and_benefit_analysis_-_independent_report_.pdf

Enabling a range of financing solutions under the cap and floor regime (published December 2015): https://www.ofgem.gov.uk/sites/default/files/docs/cap_and_floor_regime_variations_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: 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

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

Near-term interconnector cost and benefit analysis (report from Pöyry 2015): https://www.ofgem.gov.uk/sites/default/files/docs/2015/03/791_ic_cba_independentreport_final.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

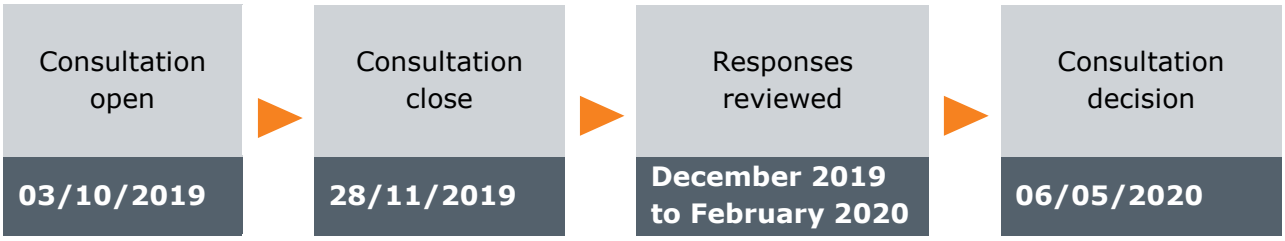
Decision to roll out a cap and floor regime to near-term electricity interconnectors (published August 2014): https://www.ofgem.gov.uk/publications-and-updates/decision-roll-out-cap-and-floor-regime-near-term-electricity-interconnectors

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

Our decision making process

1.9. Our decision making process is set out below:

Figure 1: Decision-making stages



Your feedback

1.10. We value the feedback of our stakeholders on the quality of our work, and we encourage them to provide some using the template provided below.

General feedback

1.11. We believe that consultation is at the heart of good policy development. We are keen to receive your comments about this report. We'd also like to get your answers to these questions:

1. Do you have any comments about the overall quality of this document?
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. Are its conclusions balanced?
5. Did it make reasoned recommendations?
6. Any further comments?

Please send any general feedback comments to Cap.Floor@Ofgem.gov.uk.

2. Overview of our regime variations decision

Section summary

This section sets out a summary of our decision on the requested regime variations and describes the principles we have followed to reach our decision.

Principles underpinning our decision

2.1. We have assessed the requested variations against the broad principle of improving outcomes for consumers. We have assessed the costs and benefits of approving individual variation requests, and have also assessed combinations of variations to test the cumulative consumer impact relative to the default regime.

2.2. We have considered the impact that variations would have on the regime as a whole, including the aim to ensure that no undue or unnecessary advantages are conferred on projects requesting the variations as opposed to those which are progressed under the default regime. We are aiming to maintain the overall risk balance of the cap and floor regime to the extent possible, whilst doing the minimum that is necessary for the two projects to go ahead in a timely manner. This should ensure that consumers are able to realise the potential benefits of further interconnection.

Our decision

Key variation requests

2.3. We are changing our consultation position on one of the five key requests (Variation 4), and confirming our consultation position on the remaining four. The requests, our consultation and final positions are set out below in Table 1. We expect that our decision will bring more projects online sooner and therefore benefit consumers more than would otherwise be the case.

Table 1 – Key variation requests from Greenlink and NeuConnect

Variation	Minded-to position	Final position
Variation 1: Reduce the default five-year revenue assessment period to one year.	**Approve variation**	**No change** - approve
Variation 2: Consider changes to the principle underpinning our minimum availability threshold of 80%.	**Approve variation –** we sought further feedback on structure of changes.	**No change** - approve
Variation 3: Broaden our definition of force majeure under the default regime to include additional events	**Approve variation**	**No change** - approve

necessary for enabling project finance funding.		
Variation 4: Use project-specific actual cost of debt and gearing to calculate IDC and to set the cap and floor levels, rather than the default notional cost of debt and gearing.	**Reject variation -** we did not consider there was sufficient evidence of necessity or benefit to justify the additional risk to consumers.	**Change in position** - approve
Variation 5: Maintain the default 25-year regime length.	**Reject variation** - preserving the 25-year regime duration is already attainable under the default regime provided that project delays qualify for the available pre-operational force majeure relief; we do not consider it appropriate to offer outright and unqualified preservation of the regime duration that is not available to non-project financed interconnectors and that could reduce developers' incentive to deliver their projects on time.	**No change** - reject

2.4. Our consultation position was to reject Variations 4 and 5 and approve Variations 1, 2 and 3. We rejected Variation 5, as we did not find sufficient evidence or justification that it would be required beyond the project delay provisions already available in the default regime. Our position is that the default regime already provides appropriate relief to address developers' concerns under Variation 5.

The reason for our change in position

2.5. After taking into account the consultation responses and updating our draft IA, **we have decided to change our minded-to position on Variation 4.** Our final IA indicates that accepting Variation 4 would be in the interest of consumers, which is a change from our consultation position.

2.6. Whilst feedback from some lenders confirmed that accepting Variations 1, 2 and 3 would be enough for them to provide debt financing to the projects, lenders also indicated that they might review their willingness to lend based on the prevailing debt financing market. This can happen especially if it turns out that regime incentives for developers do not reasonably match the risks developers face at that time.

2.7. Developers might face a significant mismatch between the actual cost of debt achieved in the market and the default notional iBoxx cost of debt benchmark. Under these circumstances, it is possible that developers might reconsider progressing their projects.

2.8. This change in our position to approve Variation 4 will transfer more risk to consumers relative to our consultation position. However, we aim to implement Variation 4 in a way that limits extra risk to consumers. In return, developers will have more scope to raise required financing and be able to progress their project in a timely manner. This would be a better outcome for consumers as consumers are more likely to realise the benefits of further interconnection.

Implementation overview

2.9. By accepting Variation 1, we will assess revenues on an annual basis. Our acceptance of Variation 2 means that consumers will top up revenues to the floor for interconnectors when they have missed our 80% threshold for minimum availability and recoup these payments in future years in NPV neutral terms. In order to limit the consumer exposure to excessive costs, we have limited the amount of outstanding top-up for individual projects to a maximum of four times the annual floor level over the regime length.

2.10. Our acceptance of Variation 3 will result in amendments to the default force majeure definition to include three additional events (**strike, lockout, and other industrial disturbance**). The amended definition will be applied to all projects already approved under the cap and floor regime. We consider that all projects may face these events and that these events do not represent risks that would be intrinsically linked to project finance only. Therefore, we have decided to apply the amended definition across all projects to maintain a level playing field as far as possible.

2.11. Under Variation 4, in order to allow equity to better manage the relevant risks inherent in project financing, we have decided to make available to developers the following two alternative approaches to choose from at financial close:

- **Approach 1:** We could continue using a notional cost of debt approach to set the revenue floor and allow developers to recover both equity and debt investments at the floor. However, we will replace the default regime notional cost of debt benchmark with a new benchmark (UK Non-financial iBoxx BBB 10+ years) that better reflects the risk profile of investing in standalone project-financed interconnectors; or

- **Approach 2:** We could set the revenue floor based on a competitive market process overseen by Ofgem (which is the developers' request for Variation 4). Under this approach, the floor will cover only the debt-geared portion of the investment (including provision for a reasonable debt service cover ratio (DSCR)). However, if the floor based on this approach is higher than the floor based on Approach 1 above, and higher floor payments from consumers are required, developers would reimburse consumers the difference from future revenues above the floor before they can recover equity investment and any dividends.

2.12. The provision for DSCR means that floor would be set to reflect a multiple of debt obligations that developers have to meet within one year. We have assumed a 1.2x multiple for the purpose of our assessment. We note that in any given year and where

relevant, any portion of the floor (the 0.2x) not going to lenders in order to service debt obligations will be repaid to consumers.

2.13. We consider that our implementation approach set out above provides a sensible risk balance between consumers and developers. It limits the additional cost of Variation 4 (to consumers via higher floor) to the difference between the default benchmark and the new benchmark while providing developers with the flexibility to manage risk if the actual cost of debt is higher than the new benchmark. There are reasons that could lead to this outcome such as where developers are unable to run a competitive debt raising process.

2.14. We note that the requirement for developers to reimburse the difference (between Approach 2 and 1) from future revenues above the floor before they can recover equity investment and any dividends provides reasonable incentive for developers to aim to achieve the lowest cost of debt possible.

2.15. Section 4 provides further analysis of each variation decision as well as our approach to related risks and implementation whereas Appendix 1 provides more details on the implementation of the approved variations. Section 4 also sets out further clarity on the existing relief mechanism for project delays which is available to all interconnectors under the default regime.

Non-key variation requests

2.16. The developers requested more changes than we have listed above in Table 1. In our draft IA, we did not consider further requests that were not common across projects and therefore not deemed to be as important from the view of an efficient developer. We considered other minor requests as matters on which we would need to provide further clarity in any event in the future because they are not exclusively linked to enabling project finance solutions. We have now provided clarity on issues such as our Post Construction Review (PCR) process, reserve accounts (DSCR) for project finance debt financing, and using forecast revenues to reduce payment delays.

2.17. We have set out a summary of our position on all the additional requests by Greenlink and NeuConnect in Tables 2 and 3 below. As with the five key variations, the positions we have set out below apply to only the Greenlink and NeuConnect projects.

Table 2 – Additional changes requested by Greenlink

Request	Changes requested	Minded-to position	Final position
Additional non-controllable costs	Propose including triggers for changes in corporation tax, changes in regulation and changes in law.	Reject variation	**No change** - Reject
Exchange rate changes between FPA and Financial Close	Request auto-updating allowances to capture exchange rate movements.	Minded to consider as part of our FPA	**No change** - To consider as part of our FPA

Threshold for Income Adjusting Events (IAEs)	Propose changing threshold for events to qualify as IAEs from 5% of floor to £1m a year, and to allow multiple events to aggregate.	Reject variation	**No change** - Reject
Incentives when revenues are above the cap	Request sharing mechanism above the cap.	Reject variation	**No change** - Reject
Reserve accounts	Propose including reserve accounts (e.g. DSRA) in the RAV.	Not considered at consultation	**Related to Variation 4 - therefore approve in principle**
Operational discount rate (ODR) used to calculate the NPV value of cap and floor payments	Propose using Bank of England (BoE) interest rate as discount rate to account for delay in payment, and not the midpoint average of cap and floor returns. This aims to reduce the impact of high default ODR on accrued payments.	Not considered at consultation	**Related to Variation 1 – therefore approve in principle**

Table 3 - Additional changes requested by NeuConnect

Request	Changes requested	Minded-to position	Final position
Modifications to the PCR	• Modify the PCR process so that only costs considered uncertain at FPA are eligible for review in the PCR. • Not to disallow changes to costs if the change is outside NeuConnect's control. • Update PCR submission prior to Ofgem's PCR decision if material new information arises.	Not considered as a variation to the regime.	**Further clarity provided in Section 4 of this document and in Appendix 2.**
NGESO payments	Use forecasts of surpluses or deficits relative to the cap and floor as input to the NGESO payment process.	Minded not to introduce an additional complex projection and reallocation process.	**Under ongoing consideration as possible implementation of Variation 1.**

2.18. **We have decided to consider reserve accounts as part of Variation 4.** Evidence from consultation suggests that reserve requirements are a common feature of the project finance framework and not allowing these costs may generate inefficiencies.

2.19. **We may consider using forecasts of the surplus or deficit of revenues** relative to the cap and floor to determine the annual revenue of the projects and the consequent payment due to or from NGESO. The use of forecasts may reduce any potential delay between the revenue assessment for any given year and the actual

payment of any revenue deficit to interconnectors or surplus to consumers. We will explore the practicality of this change in more detail as we implement the regime variations.

2.20. **We have decided to consider at licence implementation a suitable discount rate to calculate the NPV of cap and floor payments**. We note that using forecast revenues, which we will consider further, may reduce the impact of the default ODR (which Greenlink considers as high) on accrued cap and floor payments. We will set out our final arrangement in more detail as we implement the variations.

2.21. Appendix 2 provides a further summary of our position on non-key variation requests.

Consumer impacts of our decision

2.22. In our draft IA, we quantified the net consumer impacts of our minded-to decision in NPV terms by grouping the variation requests as follow: **(i) Option 1:** our counterfactual;[6] **(ii) Option 2:** Accept Variations 1 and 2; **(iii) Option 3:** Accept Variations 1, 2 and 3 (our consultation position); **(iv) Option 4:** Accept Variations 1, 2, 3 and 4.

2.23. In our draft IA, the expected consumer benefits under Option 3 was in the range of £593million to £802million (average £698million) relative to our counterfactual. The expected consumer benefits under Option 4, ranged from £530million to £804million (average £667million), making Option 3 our preferred option at consultation.

2.24. In our final IA, we have maintained the same approach but have focused on Options 3 and 4 only. We have not revisited Option 2. In our initial analysis, Options 3 and 4 had higher expected consumer benefits compared to Option 2.

2.25. We have selected our preferred option from these two options based on the overarching principle of improving outcomes for GB consumers. The results of our updated analysis are presented in Table 4 below.

Table 4: Expected NPV consumer impacts of Options 3 and 4 relative to our counterfactual for the Greenlink and NeuConnect projects

(£m, 2018/19)	**Option 3** **(Variations 1, 2 and 3)**	**Option 4** **(Variations 1, 2, 3 and 4)**	**Option 4 (adjusted)** **(Variations 1, 2, 3 and 4 adjusted)**
Higher end expected benefits	802	**910**	**1,006**
Lower end expected benefits	640	**569**	**717**
Average expected benefits	721	**739**	**861**

[6] The counterfactual is the default regime without any variations.

2.26. Under Option 4 – Approach 1, where we set the revenue floor based on iBoxx BBB 10+ years, the Greenlink and NeuConnect projects are expected to deliver **consumer benefits of £717million to £1,006million** relative to our counterfactual (Option 4 Adjusted in Table 4 above).

2.27. Under Option 4 – Approach 2, where the revenue floor is based on a competitive market process, the two projects are expected to deliver **consumer benefits of £569million to £910million** relative to our counterfactual. These estimates are subject to our assumptions as set out in Table 5 under Section 4 of this decision.

2.28. The difference in the results between our draft and updated IAs can be explained by the following key updates that we have implemented following consultation feedback:

- We have slightly updated the probability ranges used to determine the expected consumer benefits under each option.
- We have implemented a cap on the maximum costs of Variations 2 and 4 in order to limit risks to consumers.
- We have slightly updated how we calculate the cost of Variation 2 (now estimated as a temporary and capped floor payment from consumers, but assumed as not repaid to represent the worst-case outcome for the purposes of our impact assessment); the cost of variation 4 is now calculated as a direct change in default floor level as a result of Variation 4, to ensure that its cost is not driven by a project's revenue projection. More detail is provided in Appendix 3.
- We have updated our approach to calculating IDC to align broadly with our default regime Window 1 approach (Greenlink) and Window 2 approach (NeuConnect).
- We have also updated our notional cost of debt in line with default regime guidance. At consultation, we kept the developers' assumptions provided in variation requests submissions to ensure comparability of results.

2.29. A summary of updates between our draft and final IA assumptions and the impact of the updates on our estimates of expected consumer benefits is provided in Section 4 of this document. Detail on how we calculate the cost of individual variations is provided in Appendix 3.

3. Key issues raised in consultation responses

Section summary

This section addresses the key issues raised in response to our October 2019 consultation.

Overview of key consultation responses

3.1. We received 17 responses to our October 2019 consultation and have published all responses alongside our decision, except for eight of which were marked as confidential. We have provided below a breakdown of the 17 organisations which have provided us with valuable feedback:

- Developers of projects that have successfully raised financing (2)
- Developers that have requested regime variations (2)
- Developers of cap and floor projects that may apply for regime variations in the future (2)
- Developers of non-cap and floor interconnector projects (2)
- Consumer interest organisation (1)
- Generators (2)
- Banks and institutional investors (6)

3.2. We have discussed below the key cross-cutting issues raised in response to our consultation. For other key issues closely linked to individual variations, we have addressed these in Section 4 under our analysis of each variation. Appendix 3 provides further discussion of responses and covers, in addition to, other issues we have not discussed elsewhere in this document.

Definition of project and balance sheet financed projects

3.3. A respondent has sought clarity on our definition of project financed projects. The request focused on restrictions on future ownership including disposals, acquisitions and refinancing of the two projects that will benefit from the variations. To clarify, we have also provided further detail on cap and floor balance sheet projects.

3.4. In the context of our decision, project financed interconnectors are those led by developers who have indicated to Ofgem an intention to request regime variations or have requested it following our regime variations guidelines and plan to finance their projects under the project finance route.

3.5. In simple terms, project finance is a non-recourse or limited recourse financing based on the projected cash flow of a relevant project. This method of finance is often

used to deliver capital-intensive long-term infrastructure projects. Some of the developers who plan to deliver their interconnectors under this financing method have proposed specific variations to the cap and floor regime meant to enable this alternative financing method.

3.6. Nevertheless, the project finance route and the balance sheet route are not the only possible methods of delivering electricity interconnector investment. The project finance route represents one of possible ways of financing an interconnector investment that is alternative to the balance sheet method of finance.

3.7. We consider balance sheet projects as those that are developed, financed, owned and operated at group company level, and so will be part of a broader company balance sheet and operating portfolio (including with recourse at corporate level).

3.8. We note that our approach to applying the variations aims to recover from developers, as much as possible, any additional cost to consumers as a result of applying the requested variations. This aims to ensure that consumers are left with broadly similar floor underwriting costs (over the full regime length) relative to the default regime.

Revisiting project needs cases

3.9. Some respondents have questioned the strength of the expected consumer benefits, as the estimates were carried out in 2014/15 for the Greenlink project and in 2016/17 for the NeuConnect project. As this was a few years ago and before the UK's exit from the European Union (EU), these respondents have suggested that it would be sensible to reconsider the projects under current economic environment to protect consumers.

3.10. As set out in our consultation, our view remains that the Pöyry cost benefit analysis is robust and not materially impacted by the changes that have occurred since our needs case decision including the UK's departure from the EU. We note that the Pöyry framework considered different economic scenarios and made different revenue forecasts within each scenario (the First Additional approach – where the interconnector being assessed is the only new built and the Marginal Additional approach – where it comes last after competing interconnectors).

3.11. We note that we selected the more conservative Marginal Additional approach to inform our decisions. In doing so, we also considered a limited interconnector revenue source – congestion revenues only. We discounted other revenue sources available to interconnectors, such as revenues from bidding into the capacity market or providing ancillary services.

3.12. However, following consultation responses, we have reviewed at high level the drivers of interconnector value to provide further assurance around expected consumer benefits. Our review indicates that the Pöyry estimates for most drivers of interconnector value are broadly in line with current estimates. Drivers such as level of interconnection and installed renewable capacity appear to be positive for interconnector value relative to the Pöyry estimates, whilst factors such as competition from other flexible solutions are less clear relative to the Pöyry estimate.

3.13. We also note that NGESO's current 2019/20 Network Options Assessment (NOA)[7] for interconnectors indicates that additional interconnection capacity would provide more benefit for GB consumers as compared with the current interconnection level. The report estimates that a total interconnection capacity in the range of 18.1GW to 23.1GW between GB and European markets by 2032 would be beneficial. It estimates that this range is between three and five times the current level of operational GB interconnection of 5GW, and we note this is in excess of the total capacity approved to date under our cap and floor regime.

Consistency of regime variations decision with cap and floor regime principles

3.14. Some respondents highlighted concerns around the consistency of our regime variation proposals with the preliminary principles set out in our December 2011 letter when first developing the cap and floor regime.[8] These principles noted that:

a) the regulatory framework of the cap and floor regime takes into account the commercial viability of a project as well as the wider benefits efficient levels of interconnection can offer to consumers for example: security of supply, integration of renewable energy sources, competition and market integration across Europe;

b) consumers are protected from the cost implications of excessive returns or market power that might accrue to interconnector owners;

c) developers should be able to earn returns that are commensurate with the levels of risk they are exposed to under the regulatory framework;

d) regulatory treatment of developers should be coordinated between National Regulatory Authorities (NRAs) at either end of the shared asset; and

e) for GB and new interconnector developments, the regulatory treatment should allow third party developers and should be impartial and unbiased between Transmission System Operators (TSOs) and non-TSO developers, existing and future developers.

3.15. We consider that our decision on the requested variations is consistent with the principles listed above. In particular, we consider that it broadly maintains the risk-reward balance that was intended under the default regime. The floor is slightly firmer (with Variation 2) relative to the default regime and developers have more scope to pursue efficient financing arrangements.

3.16. We have also sought to mitigate any additional risk to consumers by requiring developers to use future revenues above the floor to reduce any negative consumer

[7] Network Options Assessment (January 2020): https://www.nationalgrideso.com/document/162356/download
[8] Preliminary conclusions on the regulatory regime for project NEMO and future subsea electricity interconnector investment (December 2011): https://www.ofgem.gov.uk/sites/default/files/docs/2011/12/preliminary-conclusions-letter_0.pdf

impacts. Where applicable, we are actively engaging with other relevant NRAs (such as in the case of the Greenlink project where a symmetric cap and floor regime is being considered by the Commission for Regulation of Utilities, the Irish energy regulator) to ensure a better outcome for consumers.

Balancing regime financeability with limited extra consumer risks

3.17. Other responses raised concerns around balancing what is necessary to enable developers to raise required financing with any extra risks to consumers. In particular, they suggested that we should consider updating our IA assumptions slightly to capture better the relevant available evidence. In addition, responses noted that we need to limit, as much as possible, any additional risk to consumers as a result of applying the variations.

3.18. Considering this feedback, we have changed our position on a key issue – the use of actual financing costs in setting the floor revenues (Variation 4). Following consultation, we have updated our IA assumptions and introduced mechanisms to allow consumers to be able to recover (as much as possible) potential additional costs of Variations 2 and 4. As a result, approving Variation 4 is a good value trade-off for consumers relative to rejecting it.

3.19. We recognise that changing our position on Variation 4 means that consumers will take on more risk (temporarily) at the critical finance raising stage to reduce the risk of project suspension. We will implement measures to rebalance the shift in risk in favour of consumers before developers are able to recover equity investment and dividends.

3.20. We have limited the way the floor is calculated under Variation 4 – Approach 2 to reflect only the recovery of the geared portion of Regulatory Asset Value (RAV) and the allowed return on this geared portion. Our role in the oversight of the financing process will ensure the financing process is efficient.

3.21. Our decision provides developers with the flexibility to manage risk more efficiently at the critical finance raising stage. It also ensures that we are providing only the minimum incentives necessary for developers to be able to raise required financing efficiently.

4. Assessment of requests and decision implementation

Section summary

This section provides a summary of our assessment of the requested variations, our approach to related risks and their mitigation. In addition, it provides an overview of our decision implementation.

Our Impact Assessment framework

4.1. Our IA is the analytical basis for our decision. As set out in our consultation, we assessed both qualitative and quantitative factors to inform our decision.

4.2. In the qualitative part of our IA, we have assessed impacts of our preferred policy option on a range of hard-to-monetise factors as set out in our Impact Assessment Guidelines.[9] In the quantitative part, we have assessed the expected consumer impacts of requested variations under a number of combinations reflecting different policy options.

4.3. We have assessed wider impacts on competition, innovation and facilitating decarbonisation efforts in a cost effective manner. In addition, we have assessed impacts on other cap and floor projects, vulnerable consumers, the environment and Ofgem's administrative and resource costs.

4.4. 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 related to Ofgem's mid-term strategic and longer-term sustainability considerations and our decarbonisation action.[10]

4.5. In our quantitative analysis, we have based our IA on evidence available to us and views from consultation responses. Our final IA estimates consumer impacts under two policy options (Options 3 and 4) relative to our counterfactual following the detail we have provided in Table 8, Appendix 3. These two options have higher expected consumer benefits relative to doing nothing or approving fewer requested variations.

4.6. The impacts associated with our preferred policy option are difficult to quantify. We note that the results of our analysis are driven by the assumptions we have made with obvious limitations, such as our expectations about future energy market access and electricity trading rules, estimates of GB consumer benefits expected from these projects, or how developers will respond to our policy options. More detail on our overall assessment

[9] Impact Assessment Guidance (October 2016): https://www.ofgem.gov.uk/system/files/docs/2016/10/impact_assessment_guidance_0.pdf
[10] Ofgem's Decarbonisation Action Plan (February 2020): https://www.ofgem.gov.uk/system/files/docs/2020/02/ofg1190_decarbonisation_action_plan_revised.pdf

approach, and the limitations of our analysis, is provided in our IA which we have published alongside our decision.

Key updates to our IA framework after consultation

4.7. In Table 5 below we have set out updates to our approach to calculating the cost of individual variations that underpin our final IA result.

Table 5: Summary of changes to our IA assumptions

Calculation	Draft IA (central case)	Final IA (central case)	Overall impacts on consumer benefits
Cost of Variation 2	Calculated as two times the annual floor level for each project plus loss in consumer benefits due to unavailability.	**Slight change** - now calculated only as four times the annual floor level for each project.	Decrease in cost of Variation 2 making expected consumer benefits under Options 3 and 4 better relative to our counterfactual.
Cost of Variation 3	Calculated as cost of keeping a loan reserve facility to manage extra events not covered under the default regime (facility size equals annual floor level).	**Slight change** - no change in assumption or calculation approach; change made only in the number of projects now benefitting from this variation – five projects previously and now all nine cap and floor projects.	Increase in cost of Variation 3 making expected consumer benefits under Options 3 and 4 worse relative to our counterfactual.
Cost of Variation 4	Calculated as change in default floor level as a result of adding 175bps to the cost of debt benchmark in the default regime and assuming 80/20 gearing of the RAV.	**Slight change** – slight change in assumption and calculation approach to be able to capture the absolute change in floor level after variation (moderating effect of revenues removed, meaning increase in floor is picked up even when a project's revenue forecast could offset the floor increase); 1.2x DSCR assumed; approach to calculating IDC and notional cost of debt updated) as discussed in Appendix 3.	Increase in cost of Variation 4 making expected consumer benefits under Options 4 worse relative to Option 3 and our counterfactual.
Cost of delays	Calculated as total consumer benefit that is lost during period when the project is delayed.	**No change** - same as draft IA.	Impact remains broadly the same relative to draft IA.
Probability ranges attached to outcomes	As provided in draft IA.	**Slight change** based on consultation feedback - see final IA for more detail.	Slight increase in expected consumer benefits under Option 4 relative to Option 3 and our counterfactual.
GB consumer benefit estimates	Assumed the Pöyry estimates remain broadly the same.	**No change** - same as draft IA.	Impact remains broadly the same.

4.8. We have provided further detail on assumptions supporting our IA in Appendix 3 where we have also addressed consultation responses specific to our IA framework.

Variation 1: Revenue Assessment Period

Variation request and our consultation position

4.9. Greenlink and NeuConnect have indicated that project finance solutions would require regular annual repayments to debt providers and that annual revenue assessment would reduce cost and ensure that they can meet loan obligations in a timely manner.

4.10. Our minded-to position at consultation was to accept this variation, noting that moving to annual assessment periods would have minor additional costs to consumers.

Consultation responses

4.11. Respondents largely agreed with our consultation position to accept annual revenue assessment. However, other responses noted that, under the current rules regulating payments to and from TNUoS charges, the actual payment of potential top-ups, if revenue fall below the floor in a given assessment period, may be received up to 2 years after the end of that period. They argued that this would make Variation 1 superficial, as lenders would still require capital reserves to bridge any delay period.

4.12. We note that NeuConnect proposed to use forecast revenues to establish the required NGESO payments earlier than otherwise would be the case. At the consultation stage, we were minded not to introduce extra complex projection and reallocation process.

Our decision

4.13. We have decided to maintain our consultation position to accept Variation 1. We are also clarifying that we would consider using revenue forecasts to determine payments for each assessment period, but that this change requires further exploration. We will consider this possibility further as we work to implement Variation 1.

Risk and mitigation

4.14. We believe that approving this variation would maintain a risk-reward balance that is broadly comparable to the balance of risk in the default regime. We recognise that moving from five to one-year assessments would remove the benefit of smoothing out significant revenue variations over a five year period as envisaged in the default regime. However, this would apply to consumers and developers without discrimination.

Variation 2: Minimum Availability Threshold

Variation request and our consultation position

4.15. As set out in our consultation, Greenlink requested to allow the interconnector to receive floor payments in all years, and to repay consumers on an NPV-neutral basis for payments received in years where availability is below 80%. They have noted that any outstanding liabilities to consumers would be repaid from revenues above the floor in

subsequent years until consumers are repaid in full. Greenlink also proposed extending the regulatory period to ensure that they can repay consumers in full if necessary.

4.16. NeuConnect requested a similar loan-type mechanism but suggested to repay only a proportion of the loan. In its consultation response, Greenlink updated its request to reflect repaying only a proportion of the loan as NeuConnect has proposed.

4.17. Our minded-to position at consultation was to accept Variation 2. In particular, our minded-to position was influenced by the need to moderate the impact on lenders of the binary nature of the availability threshold that exists in the default regime design. Through bilateral engagements with lenders we learned that the majority were of a view that this feature would make lending to the projects more challenging.

Consultation responses

4.18. Consultation responses broadly supported our minded-to position. Respondents also highlighted that our decision must protect consumers from the risk of unavailability caused by a substandard interconnector.

Our decision

4.19. We have decided to maintain our consultation position to accept Variation 2. We have set out additional requirements for developers to protect consumers. Our decision would enable developers to continue to meet annual debt repayments to lenders in years in which availability falls below the 80% minimum threshold. Consumers will top up revenues to the floor level (in the form of a temporary loan) to enable developers to meet their obligations to lenders.

4.20. We have capped the additional risk to consumers (cumulative outstanding temporary loans) at four times annual floor payment for each project which cannot be exceeded over the regime duration. Developers are required to repay the temporary loan in full from future revenues above the floor level before they can recover their equity investment and any dividends. We have set out more detail in Appendix 1.

4.21. We would consider the practicalities of extending the regulatory period to ensure that any outstanding repayment from developers to consumers at the end of the 25 year regime length can be repaid in full.

4.22. We are rejecting the additional request made by developers to repay only a proportion of any loan provided by consumers under Variation 2. We consider that this request would change the default risk-reward balance by more than what is necessary to enable the developers to raise required financing. In addition, it could undermine the regime principle which aims to ensure that our decision is fair to all cap and floor projects.

Risk and mitigation

4.23. We recognise that accepting Variation 2 has the potential to alter the balance of risk between consumers and developers. For various reasons, developers may be unable to repay the temporary floor top up payments provided by consumers. To protect consumers, we will limit the amount of outstanding top-up loans to each interconnector to a maximum of four times the annual floor level over the entire length of the regime. This then becomes

the worst-case additional cost for consumers, which we have modelled in our IA. However, this variation may never be used in practice, and the additional costs to consumers may be much lower in reality than assumed in our IA and following our implementation of the additional conditions as set out in our decision above.

Variation 3: Force Majeure

Overview of Force Majeure provisions

4.24. The wording of the force majeure definition is set out in the special conditions of the interconnector licence.[11] It is neither overly wide (which could lead to legal uncertainty) nor completely prescriptive or exhaustive. The definition contains a suite of events that could constitute a force majeure and it can also accommodate other events of similar kind that are not expressly included – such events must be beyond reasonable control of the licensee.

4.25. The definition also expressly refers to certain events that are excluded, e.g. "weather and ground conditions which are reasonably to be expected at the location of the event or circumstance".

4.26. This force majeure definition does not operate in vacuum. It is applied together with relevant operative provisions of the licence. This means provisions related either to the Income Adjusting Event (IAE) or the Exceptional Event (EE) mechanisms. This is because the IAE and the EE mechanisms set out the procedures that need to be followed, including the notification, information and mitigation requirements in respect of the potential force majeure event. These provisions also set out the respective threshold triggers for establishing a force majeure event and contain rules on the applicable relief mechanisms.

Variation request and our consultation position

4.27. Greenlink and NeuConnect have requested that we broaden the default definition of force majeure. Both developers believe that the current definition may not capture some events that are beyond the control of developers which may not be covered by insurance. The developers have proposed additional potential force majeure events.

4.28. In our October consultation, we indicated our minded-to position to review the default force majeure definition.

Consultation responses

[11] The 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

4.29. The majority the respondents supported our minded-to position with a few dissenting views. One concern was that the definition of force majeure is specifically design to protect developers from unpredictable events, therefore including these events in a predefined list could suggest that developers are aware of the likelihood of such events to occur. Developers should then be able to take action to mitigate them. We do not consider that the mere reference to certain events in the force majeure definition means that those events therefore necessarily become predictable.

4.30. Others noted a change in force majeure definition for only Greenlink and NeuConnect would provide a commercial advantage relative to other developers. These respondents proposed that a change to the force majeure definition should apply to all cap and floor projects.

Our decision

4.31. Considering the stakeholders' responses, we have decided to amend the current definition of force majeure to include the following events that may potentially constitute force majeure events: (i) **strike**, (ii) **lockout**, and (iii) **other industrial disturbance.** These three events may be familiar to stakeholders as they are included in the force majeure definition applicable to the IAE mechanism under the OFTO regime.

4.32. While we have decided to include these three events requested by stakeholders, we do not think that these potential force majeure events are intrinsically linked to the risks stemming from delivering an interconnector under the project finance route as opposed to under the default regime. Therefore, to ensure equal treatment for all relevant interconnector projects and operational interconnector assets, we decided to add these three events to force majeure provisions of all cap and floor regime interconnectors.

4.33. It is also worth noting that these three additional events are not completely new in the context of our cap and floor regime policy development because they were included in the initial draft force majeure definition on which we have publicly consulted in 2016 for the purposes of the pilot Nemo Link interconnector to Belgium.[12]

Risk and mitigation

4.34. The addition of three events to the force majeure definition for all cap and floor projects, including those already developed and operational, may further increase consumer exposure to additional costs.

4.35. Moreover, the relevant licence provisions applicable to IAE and EE mechanisms set the threshold triggers for establishing a force majeure event and impose on the licensee

[12] Statutory consultation on changes to the standard conditions of the electricity interconnector licence, the electricity interconnector licences held by Nemo Link and NGIL and the electricity transmission licence held by NGET (August 2016): https://www.ofgem.gov.uk/publications-and-updates/statutory-consultation-changes-standard-conditions-electricity-interconnector-licence-electricity-interconnector-licences-held-nemo-link-and-ngil-and-electricity-transmission-licence-held-nget

mitigation, notification and information requirements. These provisions are aimed at incentivising the reduction and management of the impact and consequences of any force majeure event.

Variation 4: Actual project cost of debt and gearing

Variation request and our consultation position

4.36. Greenlink and NeuConnect requested that we should change the default approach to setting the floor revenue and calculating the IDC. This is to ensure that the floor revenue equals the required repayment to lenders in any given year when merchant revenue is insufficient to do so and prevent a situation where developers would have to make-up any shortfall. In some cases, this shortfall might be large based on the project size. The key request involves using actual cost of debt and gearing achieved from a competitive market process (overseen by Ofgem) to set the floor and IDC.

4.37. Our consultation position rejected this request. This was informed by initial feedback from lenders during our bilateral engagement pre-consultation, which we had fed into our draft IA. We understood that lenders would lend to the developers to match the cashflows generated by the default notional approach to setting the floor. As the floor pays a return covering 100% of the RAV, developers could use the return paid on the portion of the RAV that is not going to debt lenders to manage any risk of the outturn debt service requirement being larger than under the default notional approach.

Consultation responses

4.38. Following consultation, lenders and developers have now provided more evidence to support the importance of Variation 4 in the context of non-recourse project financing.

4.39. The key evidence provided by lenders is that the risk of setting the floor notionally may be quite high for some projects. This would be the case if the difference between the actual cost of debt and the notional cost of debt were quite large requiring equity providers to make up the difference or lenders to provide additional debt financing. Lenders might reconsider their willingness to lend to the projects if they assess the balance of debt and equity as insufficient for the project to progress. Consequently, developers would be less able to progress projects in a timely manner or they may suspend their projects.

4.40. Greenlink provided evidence suggesting that the default benchmark may be underestimating the risk of a stand-alone and unique asset like an interconnector. They proposed that we should consider replacing the default benchmark with a new one - UK Non-financial iBoxx BBB 15+ years plus a margin (and maintaining the notional approach).

4.41. NeuConnect provided evidence showing it would need more debt financing because of the capex size of its project. They argued that any difference between the actual cost of debt and the default notional cost of debt could present a big risk to them. NeuConnect maintained their request for Ofgem to change the default approach to allow for the use of actual cost of debt and gearing to set the floor. They also indicated that they might be willing to consider the notional approach if Ofgem would add a fixed margin to the default iBoxx benchmark.

4.42. Other responses suggested that Ofgem should consider using a market approach where possible. They also highlighted to importance of protecting consumers from higher floor levels that may be possible if developers are unable to deliver a competitive market process.

Our decision

4.43. We are now changing our consultation position and have decided to approve a version of Variation 4. After updating our IA assumptions following consultation responses, our IA result indicates that approving Variation 4 (alongside the additional conditions set out below) would improve outcomes for consumers relative to our counterfactual.

4.44. We will offer the two developers the option to keep the default notional approach but replace the default benchmark with Non-financial iBoxx BBB 10+ years only, with everything else remaining the same as in the default regime. This is our Approach 1. We note that under this approach, notional cost of debt is paid on 100% of the RAV and developers are allowed full recovery of equity and debt investments at the floor.

4.45. Developers may also choose a competitive market approach (actual cost of debt and gearing, including provision for a reasonable debt service cover ratio or reserve requirements) to inform how we set the floor with Ofgem to oversee the process. This is our Approach 2 (an iteration of the developers' request under Variation 4). We note that under this approach, we will pay actual cost of debt on the geared portion of the RAV only. In addition, developers will be able to recover the debt-geared portion of the investment only. Developers will also be expected to use future revenues above the floor to ensure that the overall cost to consumers under this approach (over the regime duration and including any extension where necessary) is broadly the same as the notional approach or better from GB consumer point of view.

4.46. Evidence from consultation suggests that lenders would usually require projects to set aside reserves to make debt payments in the event of a disruption of cashflows. As we expect cashflows disruption to be unlikely as a result of approving Variation 2, we would expect reserving requirements from lenders to be minimal.

Risk and mitigation

4.47. We have put in place additional requirements to keep the risk balance roughly the same as the default regime. Under our Approach 1 above to implementing Variation 4, we will limit the additional cost to consumers to the difference between the average of iBoxx A/BBB and iBoxx BBB. From current estimates, this difference is roughly £18million (in additional cost from the two projects) over the 25 year regime length, but could be higher.

4.48. Under our Approach 2, we will pay a return (actual cost of debt) to only the geared portion of the RAV and will allow full repayment of only lenders at the floor. Recovery of equity investment will not be allowed at the floor. If the overall additional consumer cost under Approach 2 is higher compared to Approach 1, developers will have to repay consumers from future market revenues over the floor level to restore consumers to broadly the same impact as under Approach 1.

4.49. The above mitigations would ensure that consumers are only doing the minimum that is necessary to enable the developers to progress projects in a timely manner. It will also ensure that our decision does not give competitive advantage to the two developers using project finance solutions relative to other developers.

Variation 5: Regime Length

Variation request and our consultation position

4.50. Greenlink and NeuConnect have requested to maintain the default 25-year regime length if their projects are not delivered on time as a result of delay factors outside their control. In addition, NeuConnect have requested to delay the regime start date if we deem the delay to be in the interests of consumers. NeuConnect have also requested to allow developers to receive IDC for any delay period.

4.51. Our consultation position rejected the variation requests from both developers. In our pre-consultation engagement with potential debt providers, we did not find any evidence that Variation 5 was necessary. In addition, we were not convinced that the relief provisions available for delay in the default regime were inadequate.

Consultation responses

4.52. As set out in Chart 1, Appendix 3, the majority of respondents disagreed with our minded-to position to reject Variation 5. Respondents noted that the length of the regime should not be shortened where developers can demonstrate that delays were caused by events beyond their reasonable control and that adequate measures to mitigate the delay had been taken. It was argued that any reduction in the length of the support at the floor could lead to bankability issues as a project's debt-sizing and financial covenants rely on the certainty of cashflows and length of the regime.

4.53. Some respondents considered the one-year grace period available to Window 2 projects as adequate for developers to manage any risk of project delays.

Our decision

4.54. After considering the responses received, we have decided to confirm our minded-to position and reject Variation 5. We have also decided to reject NeuConnect's proposal to allow IDC for delay periods that is not already recognised within the default regime.

4.55. We recognise the significance (to financing requirements) of full project cost recovery within the 25-year regime duration. We also understand that developers may face a number of challenges in delivering these complex infrastructure projects. In recognition of such challenges, the default regime already offers reasonable relief for delays due to force majeure events to all projects.[13] We have provided further clarity below:

[13] As per the amended definition of force majeure that includes three additional events.

- **Window 1 projects:** Our *'Cap and floor regime: An update on 'Window 1' interconnector projects'* [14] letter sets out the following:

  'We do understand that sometimes delays are caused by specific external factors. Whilst the condition noted above remains in place, we will exclude the duration of any delays caused by force majeure events from the above provision.'

- **Window 2 projects:** We indicated the following in Annex 1 of our '*Cap and floor regime summary for the second window' letter:*[15]

  'If a force majeure occurs during construction and leads to construction delays, then Ofgem may delay the regime start date accordingly.'

4.56. **We would consider regime delay requests on a case-by-case basis under the rules set out in the policy documents referred to above.**

4.57. We note that force majeure definition addressed under Variation 3 (and set out in the special licence conditions) applies only during the operational phase of a project. To remove any confusion, we are now confirming that the same force majeure definition would apply when we assess project delays.

Implementation and next steps

4.58. We will implement our decision by setting out the necessary changes in the special licence conditions issued to both Greenlink and NeuConnect. We plan to develop and consult on these licence conditions with the aim of amending the relevant licences alongside our FPA and in advance of financial close for the respective projects.

4.59. We acknowledge that some technical aspects of our decision are still outstanding, and that implementing these decisions may introduce unforeseen complexity. We will further engage on these aspects with the relevant stakeholders.

4.60. More detail on how we intend to implement each variation and our planned next steps can be found in Appendix 1.

[14] Cap and floor regime: An update on 'Window 1' interconnector projects: https://www.ofgem.gov.uk/system/files/docs/2017/06/w1_update_letter_-_19jun2017_-_final.pdf
[15] Cap and floor regime summary for the second window: https://www.ofgem.gov.uk/system/files/docs/2016/05/cap_and_floor_regime_summary_for_the_second_window.pdf

5. Appendices

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Appendix 1 - Variations implementation and next steps

5.1. To provide further clarity on our decision, in Table 6 below we have set out the key next steps and timeline to implementation as applicable.

Table 6: Overview of variations implementation and related issues

Variation	Implementation detail	Key risks, limitations and mitigation	Next steps and timeline
Variation 1: Revenue Assessment Period	• Annual revenue assessment requirements would be set out in the special licence conditions for Greenlink and NeuConnect. • Where necessary, and subject to further consideration, some forecasts of revenue surpluses or deficits relative to the cap and floor may be used as input to the NGESO payment process (to be confirmed during implementation).	• The main risk of our implementation is that consumers would lose the potential benefits that come with revenue smoothing over a five year period; the converse is also true for developers if revenues are above the cap. • As highlighted earlier, using forecast revenues would introduce extra complexities into the revenues assessment process. This therefore needs further consideration before we can reach a final decision. • If forecasting is implemented, we would require developers to use their best effort when providing revenue forecast and then have a true up in the next assessment period.	• Ofgem to consult upon and then direct consequential changes to the relevant licence conditions. • Ofgem to consult with NGESO regarding cap and floor TNUoS settlement process. • Ofgem to work with the developers to update the structure of our default cap and floor financial model to ensure it is fit for purpose. • These next steps may happen sequentially or in parallel as may be needed by each developer.
Variation 2: Minimum Availability Threshold	• A temporary floor top up payment loan provision equal to a maximum of four times the annual floor for each project will be made available to each developer.	• The main risk of our implementation is that consumers may not be repaid. We expect this to be unlikely as in such a scenario the developers would have lost their equity	• Same as for Variation 1.

	• This will occur only in a scenario where availability falls below the required 80% minimum for reasons other than force majeure and merchant revenues are insufficient for developers to repay annual debt obligations to lenders. • A developer would not be allowed to exceed this maximum cap over the regime duration and would be required to repay all outstanding loans under this provision before developers can recover their equity investment and dividends. • This provision would be set out in the relevant special licence condition for Greenlink and NeuConnect.	investment and would also recover no dividends (as the floor allows recovery of only the debt-funded portion of investment). • As a mitigation, we have modelled the worst-case scenario. We assume that consumers are not repaid the value of the top-up payments - this is the central case in our IA. This means in reality the outcome for consumers is likely to be more positive than in our analysis.	
Variation 3: Force Majeure	• The special licence condition for all cap and floor projects will be updated at the relevant times to add the following three events to the force majeure definition: (i) strike, (ii) lockout, and (iii) other industrial disturbance.	• The risk of implementing Variation 3 comes from any one of these three events occurring. • The IAE and EE mechanisms set the threshold triggers for establishing a force majeure event and impose on the licensee mitigation, notification as well information requirements. These provisions are aimed at reducing and managing the impact and consequences of any force majeure event.	• Ofgem to consult upon and then direct consequential changes to the relevant licence conditions.
Variation 4: Actual project cost	• We will set the floor level for Greenlink and NeuConnect based on the below two alternative approaches.	• The risk of this implementation is that consumers would now have to pay a higher floor at the minimum relative to the default regime. We have estimated this cost to be around £18million more relative to the	• Same as for Variation 1. • We will work to ensure our cap and floor financial model is

of debt and gearing	• **Approach 1:** Notional approach using UK Non-financial iBoxx BBB 10+ years with everything else remaining the same as in default regime such paying the notional cost of debt on 100% of the RAV; or • **Approach 2:** Market approach using actual cost of debt and gearing that satisfy a competitive debt raising process and a mechanism for developers to repay consumers any extra cost over **Approach 1** if the overall cost under Approach 2 is higher; actual cost of debt is paid on only the geared portion of the RAV. • The relevant special licence condition for Greenlink and NeuConnect will be updated in due course to reflect these provisions.	default regime and consider that it is a sensible trade-off for consumer to help projects to progress in a timely manner. An additional risk is that this cost may change significantly when the margin between the default notional benchmark and our new notional benchmark change. As set out in the Pöyry CBA analysis, the negative consumer impact of project delays is much higher relative to this extra risk. • There is a further and more remote risk to consumers under our Approach 2 implementation: consumers may not be repaid any difference that is necessary to equalise consumer impacts across both approaches. We expect this to be unlikely as in such a scenario, developers would be unable to recover their equity investment and dividends. • Ofgem will play a role in overseeing and assessing the financing process to ensure that if Approach 2 is chosen, the actual financing costs are based on a competitive and efficient process.	updated to fit either financing approach. • We will continue to work with developers as they approach financing to ensure that we have an oversight role to scrutinise arrangements and to ensure that the actual financing costs are realised through an efficient and competitive process.

Appendix 2 – Treatment of non-key variation requests

5.2. This appendix provides further analysis of the non-key variation requests.

Table 7 – Summary of non-key variation requests

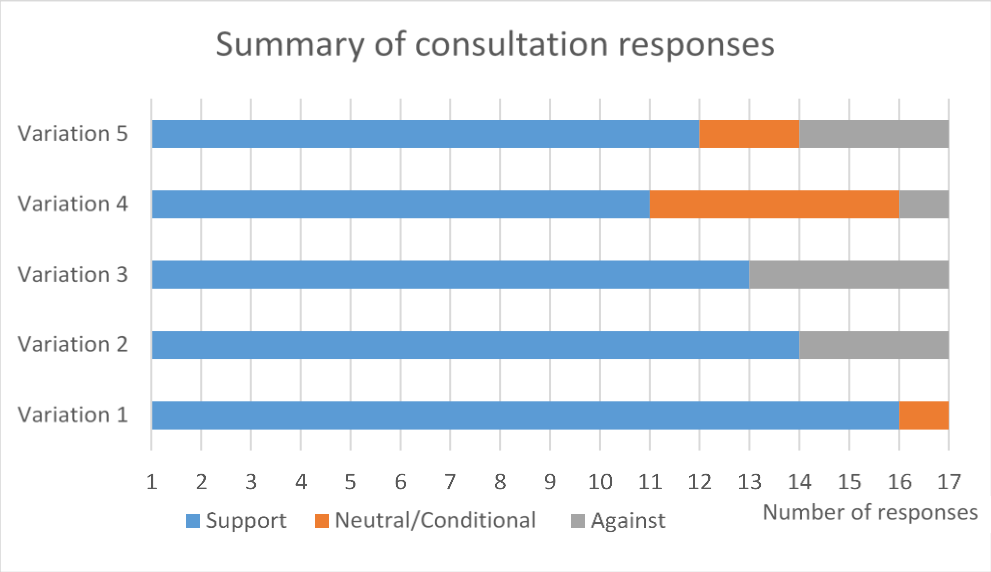
Changes requested	Our analysis
Including non-controllable cost triggered by changes in corporation tax, changes in regulation and changes in law.	We do not consider this as a material variation to the regime and as critical to developers achieving required financing. The default regime already provides a floor return to developers covering full recovery of equity investment and dividends at a notional cost of debt. In addition, the regime provides specific relief for cost changes due to decommissioning as a result of change in legislative requirements; re-openers for opex (once only, and no earlier than 10 years); and mechanisms to compensate the licensee for changes to non-controllable operating costs (as defined under the default regime) over the regime duration.
Allowing consumers to underwrite the risk of exchange rate movements between FPA and financial close.	We do not consider this as a material variation to the regime and as critical to developers achieving required financing. We acknowledge that exchange rates might fluctuate between FPA and financial close. However, we would expect developers to mitigate this risk through hedging strategies, as other efficient developers would do. We are open to engage with the developers ahead of their FPA submissions to assess the economic and efficient way to address this issue.
Changing threshold for events to qualify as Income Adjusting Events (IAEs) from 5% of floor to £1m a year, and to allow multiple events to aggregate.	We consider that this would be a material variation to the regime. However, evidence available to us suggests that the request is not critical to developers achieving required financing. We note that some respondents indicated that without this variation there might be a risk to the project's ability to service debt where multiple events occur in the same year. We consider that the provisions to manage risk as set out in the default regime (and the key variations we have now accepted) are reasonable and sufficient from the point of view of an efficient developer.
Request to introduce a sharing mechanism above the cap to incentivise developers	We consider that accepting this request would not be in the interest of consumers. Approving the request would shift the default risk balance at the disadvantage of consumers and other developers under the default regime. Our assessment suggests that the request is not necessary for developers to achieve required financing.
Use actual BoE interest rate as discount rate to account for delay in payment, and not the midpoint average of cap and floor returns	We have decided to consider, at licence implementation, a suitable discount rate to calculate the NPV of cap and floor payments. We may keep the default approach if further assessment suggests that using forecast revenues to run the annual revenue assessment process, which we will consider further, may reduce the impact of the default ODR on accrued cap and floor payments. We will set out our final arrangement in more detail as we implement the variations.

Modifying the PCR process so that only costs considered uncertain at FPA are eligible for review in the PCR. Not disallowing changes to costs if the change is outside a developer's control. Updating PCR submission prior to Ofgem's PCR decision if material new information arises.	We have treated these requests as issues in which we are able to provide further clarity. We set out below our key policy positions on the default FPA and PCR processes. • Only costs considered uncertain (not backed by signed contracts) at FPA and/or not assessed at FPA are eligible for review at the PCR stage. • At PCR, we will assess the efficiency of any changes in cost already fixed at FPA. Any changes in cost that were fixed at FPA must be outside the control of a developer and meet our efficiency and economic principles – we will continue to assess such costs at the PCR and we will allow or disallow these as necessary. • At PCR, we will consider changes in costs confirmed at FPA that we deem to be eligible and efficient. We acknowledge that certain costs considered at FPA may turn out to be slightly different at project completion (such as those driven by a change in the estimates of required units of construction materials such as cables). The PCR allows these changes to be taken into account by adjusting our provisional cap and floor levels (determined at FPA) for changes in costs we deem to be eligible and efficient. • At PCR, we will assess aspects of our cost assessment that were not fixed at previous stages. • We can also confirm that developers would be able to provide additional supporting information prior to Ofgem's PCR decision if material new information arises. We note that the default regime aims to ensure that efficient developers will recover all economic and efficient costs incurred to deliver their projects. The default floor level (together with the accepted variations) has been designed to provide this certainty.

Appendix 3 – Summary of responses to our consultation

5.3. This section discusses responses by 17 organisations to our 2019 consultation and our views. Chart 1 below provides a summary of views from the 17 organisations on each of the five key requested variations.

Chart 1: Stakeholders in support, neutral or against key requested variations



5.4. We have considered these responses to inform our decision. To keep our focus on the key issues, we have not addressed general regime issues (raised in the consultation) that are unrelated to the requested variations. An example of this may be responses highlighting impacts of interconnectors on generators or structural regime issues that we consider are outside the scope of our assessment and decision. We encourage developers to raise issues specific to their projects in line with our regime variations guidelines.

5.5. For responses that we consider are within the scope of our assessment, we have grouped them around the eight questions set out in our consultation. Table 8 below covers the responses and our analysis.

Table 8 - Summary of all consultation responses received

Response	Our analysis
Consultation question 1: Do you have any views on the project finance variations requested by developers?	
Ofgem should consider the proposed variations as a package of measures aimed at securing attractive lending terms from lenders, securing benefits for consumers and attracting equity investment that is required for timely delivery of projects.	We have analysed the requested variations separately and as a package to understand the interactions between them. From this analysis, we were able to group the variations under three policy options (Options 2, 3 and 4) in our draft IA. Following consultation, we have changed our position on one of the key issues – the use of actual financing costs in setting the floor (Variation 4). Changing our position on Variation 4 means that consumers will take on more risk (temporarily) at the critical finance raising stage to reduce the risk of project suspension. We will implement measures (to the extent possible) to rebalance the shift in risk in favour of consumers before developers can recover their equity investment or dividends. We consider that our decision will offer equity providers the flexibility to manage risk more efficiently at the critical finance raising stage. It also ensures that we are providing only the minimum incentives necessary for developers to be able to raise required financing efficiently.
The requested regime variations do not fully address structural differences between TSO and non-TSO developers and requirements to raise sufficient financing.	A full assessment of potential structural regime issues is outside the scope of our current assessment. We have limited our assessment to issues raised by both developers in their submissions. Within the regime variations scope, we have considered the difference between the two developers (as single purpose companies with a single asset and revenue stream) and balance sheet developers to inform our decision. We aim to do the minimum that is necessary to enable the developers to raise required financing while also aiming to maintain a similar risk-reward balance between consumers and developers for all cap and floor projects.
Ofgem should have assessed bankability for all developers when implementing the regime through the Nemo Link and NSL licences. If developers cannot raise finance they may be either	As part of the regime policy, developers may request changes to how we apply aspects of the default regime and show that applying these changes for their projects is in the interests of GB consumers. We can assess variation requests only when developers put them forward and in the default regime, developers are allowed until the FPA stage to request regime variations. The cap and floor is a developer led regime – it aims to balance our role with that of the market. A developer identifies a project and assess its bankability in the context of the developer's business model. Ofgem enables efficient projects to move forward by making regulatory decisions to protect the interest of consumers based

inefficient, or the regime as implemented does not support efficient investment.	on information the developers provide. We have presented our analysis in the IA published together with this decision.
Consultation question 2: Do you agree with our categorisation of key and additional variations? Are there any additional factors we should consider?	
Ofgem should present a detailed analysis on Variation 5, given it has been identified by Ofgem as a key variation in its analysis.	The Pöyry CBA analysis supporting our Window 2 decision considered the impacts of project delays (Variation 5) on consumer benefits. We assumed the Pöyry estimates (which indicated that project delays have negative consumer impacts) were still broadly valid and on that basis we did not provide any further quantitative analysis on Variation 5. Consultation responses have now highlighted that applying Variation 5 would improve regime efficiency. We agree with aspects of Variation 5 that are aimed at efficiency improvements and consider that the default regime already address those aspects reasonably. We have explained this further in our next response below.
If Ofgem does not approve the five key variations then the ability to raise investment into the schemes could be jeopardised and hence have an impact on the overall objective of Government and Ofgem to support the development of interconnectors.	We have considered the five key variations and accepted four of them. This means approving changes to the revenue assessment period; the minimum availability threshold; and the definition of force majeure used in our cap and floor regime. We have also changed our consultation position on a key issue – approving an option of using actual financing costs in setting the floor (rather than just using the default notional parameters). We are maintaining our consultation position to reject a request to maintain the full regime duration if project are delayed for reasons that are outside the scope of what the regime currently allows. We note that an eligibility requirement to apply for both Window 1 and Window 2 was that projects had a reasonable plan to connect by the end of 2020 and 2022 respectively. To remove any doubt, the default regime as it stands already provides an additional year for Window 2 projects to accommodate delays from their target completion date before the regime duration starts to decrease, and a force majeure relief mechanism in addition. Window 1 projects have a fixed automatic extension (with 31 December 2020 as the equivalent delayed completion date) but can also seek relief based on force majeure event if it occurs. For more detail, we would refer developers to our June 2017 *'Cap and floor regime: An update on 'Window 1' interconnector projects';* and our May 2016 letter*: 'Cap and floor regime summary for the second window'.*
Consultation 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?	

Regime variations would create a two-tier regime disadvantaging other investments taken in good faith under the default regime.	We are mindful of the need to avoid creating a secondary regime. To guide our decision, we have tested our assessment against broad regime principles, which provide for non-discriminatory treatment of all cap and floor interconnectors. Our decision allows only the minimum that is necessary to ensure that developers can raise required financing and be able to move projects along expected timelines. Where we consider a variation would benefit the two developers directly relative to other developers (as with Variation 3), we are making this available to all cap and floor projects. We also note that the ability to request project-specific regime variations is a policy framework within the default regime and has been available to all developers since the cap and floor regime was fully established. Our August 2014 decision to roll out a cap and floor regime notes the policy below, and we provided further guidance through 2015: We are also willing to consider project-specific proposals for variations to the detail of the regime, if a developer, as part of its submission, demonstrates that a proposed change better protects the interests of consumers when compared to our general regime.
Interests of consumers need to be balanced with the overarching business case for the development of interconnectors and their role in the future low carbon UK energy market.	We have made our decision taking into account the extra benefits and risks of interconnections that we are unable to quantify within our assessment framework. We note that the default regime aims to balance commercial incentives and appropriate risk mitigation for project developers. Developers have to pass revenues above a cap back to consumers (maximum), whilst consumers top up revenues below the floor (minimum) to ensure that interconnectors can repay lenders. We will continue to engage with the developers and other stakeholders to keep up-to-date on the issues that developers face.
Ofgem's decision on the proposed variations could have a binary impact on lenders' decision to invest, and is not necessarily a risk that could just be priced.	We recognise that it is challenging to model how developers and lenders would react to our decision. We also note that it would be difficult to meet the requirements of all lenders and that, in any case, Ofgem will not commit to meeting all requirements. In basing our decision on evidence that developers and lenders have provided, we consider that we are responding directly to their key concerns. This should improve the attractiveness of the regime to debt and equity providers. We do recognise, however, that this may not be considered sufficient for some lenders or equity providers and that they may therefore choose not to invest.
Where a party owns an interconnector asset that is dysfunctional or otherwise not available to benefit	We have set out an approach to implementing Variation 2 that would protect consumers from extra risks. Our approach aims to ensure that developers would use all future revenues (to the extent possible) to offset any extra cost to consumers caused by applying Variation 2. In addition, we note that approving Variation 2 may

customers, this party should receive no benefit.	reduce cashflows risk associated with interconnector unavailability and facilitate a lower borrowing cost. This outcome might provide extra benefit for consumers. We consider that consumers should not be liable for payments to a faulty asset indefinitely, which is why we have also limited the maximum outstanding consumer risk as part of our decision on Variation 2.
Being overly prescriptive in the definition of force majeure may have negative effects on the regime which is likely to result in poor outcomes for consumers.	The force majeure definition is non-exhaustive and not overly prescriptive. It is capable of covering events of a similar kind to ones expressly stated in this definition, provided they are beyond the reasonable control of the licensee, and subject to the operative provisions of the licence under the existing IAE and EE mechanisms.
Ofgem should operate the cap and floor regime based on actual data wherever possible alongside protecting the interests of customers.	Our decision aims to strike a sensible balance between using actual project data (where efficient) and notional market data otherwise. This approach maintains competitive pressure on developers to minimise capital, operating and financing costs in line with what we observe from other efficient market participants. A notional benchmark approach could also ensure that the developers are taking decisions based on the project's business case and not because of overly generous consumer underwriting.
Ofgem should introduce an element of risk sharing of floor repayments when availability is below 80% to ensure that interconnectors would repay only a portion related to reductions in availability.	We disagree with this proposal, as it is inconsistent with the consumer-developer risk sharing balance achieved under the default regime. The proposed sharing factor would prevent the interconnector from repaying in full any temporary top up loan provided by consumer. Our decision aims to ensure that developers repay consumers in full whilst also providing required firmness of the floor that lenders require.
Ofgem should adopt an alternative, transparent, index that better matches the duration and credit rating for a project-financed interconnector.	We have made some slight changes by replacing the average of A/BBB 10+ year iBoxx indices with the BBB 10+ iBoxx index in Approach 1 and Approach 2 to Variation 4. Our decision also leaves room for setting the floor based on market parameters. The developers have the option to choose between the two approaches at financial close.

The draft IA does not reflect the potential consumer benefits of extending the regime length or the potential impact on project deliverability from an equity perspective.	The 25-year regime length is a core feature of the cap and floor framework, and eligibility for the cap and floor regime was granted based on the expectation that projects would connect by the end of 2020 (Window 1) and the end of 2022 (Window 2) respectively. As we have already noted in previous responses, the default regime does allow some flexibility around project connection date and force majeure relief for projects that are unable to meet their connection date if indeed a force majeure event occurs. We will continue to work with all developers to ensure they can deliver projects on time and be able to recover full project costs within the regime period as far as possible. We would also note that the end of the cap and floor regime period does not mean that consumers will no longer benefit from the projects. We consider it likely that projects will continue to operate after the end of the 25-year regime duration.
Consultation 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? **Consultation question 5: Do you have any views on the specific qualitative or quantitative analysis published in our IA?**	
Ofgem should provide more transparency on the IA methodology.	We have provided more detail below on how we estimate the cost of Variations 2, 3 and 4 and the cost of delay. A summary of these details is also included in our updated IA. We have considered in a limited way, how interactions between the variations would affect costs of individual variations and delays. For example, accepting Variation 2 and 3 makes it more likely that lenders will provide debt financing to support the projects (at the indicated market rate provided by the two developers). Our estimate of market cost of debt under our central case is within the range of views provided by the two developers (which they have indicated as only likely if the other key variations have been accepted). **Variation 2**: Under our central case, we calculate the cost of this variation over the regime duration as four times the annual floor level for each project. • **To calculate the cap and floor levels**, we use our default cap and floor financial model template. We follow our normal process of determining the cap and floor levels for each project, but we allow developers to recover (through depreciation) only 80% of the RAV at the floor. This is in line with our 80/20 gearing assumption under our central case for cost of Variation 4. We also make allowance for a 20% buffer to meet a hypothetical 1.2x DSCR assumption. We use the capex and opex parameters for Greenlink and NeuConnect lifted from the models provided by the two developers. For the other three projects, we

	recreated the models using their individual capex parameters but assume their opex is similar to NeuConnect's. To reduce complexity, we keep all other model inputs (such as inflation, regime start date) the same for all projects. We calculate IDC according to our default regime guidelines for Window 1 and 2 projects under the counterfactual scenario but we follow a market based approach when calculating IDC for cap and floor levels feeding into Options 3 and 4 (as explained below on page 46 under 'For IDC rate'). • **To calculate the cost of Variation 2**, under our central case, we assume that consumers would provide a temporary loan the size of four times a project's floor level (Floor x 4). We focus on the worst outcome where merchant revenues generated by the interconnector is never sufficient to repay the loan. In reality we therefore expect costs to consumers to be lower. **Variation 3**: Under our central case, we calculate the cost of this variation as the interest on maintaining a loan facility the size of the annual floor level over the regime duration. • **To estimate the floor level under Variation 3**: we use the same floor level estimate determined under cost of Variation 2 above. • **To calculate the cost of Variation 3**: We assume in lieu of granting Variation 3, consumers would add the floor level for 1 year to the RAV and pay to developers cost of debt determined under our central case for the cost of Variation 4. This would then give developers scope to manage any extra risk that comes with rejecting Variation 3. We could also view this assumption as follows: lack of Variation 3 would lead lenders to request developer to hold funds in a reserve facility the size of 100% of annual floor payment. Cost of this variation is the cost of keeping the reserve facility. **Additional notes on cost of Variation 3 to address specific questions from consultation**: We note a suggestion from a consultation response that a "*more accurate way to estimate the cost of Variation 3 would be for Ofgem to compare the probability adjusted cost to customers for an event covered by the expanded force majeure definition*". We agree there are other ways we could estimate the cost of Variation 3 and we did consider these. We considered the option to estimate this cost as the difference in consumer exposure between a cap and floor project and a full merchant project (which is the floor). However, we considered that this alternative approach would lead to excessive cost that were not justifiable, as the default regime already covers standard force majeure events. We lacked sufficient evidence to consider fully the probability-adjusted approach. For these reasons, we have maintained our current approach which is based closely on the evidence the two developers provided in their variation requests submissions. That is, an overly limited force majeure definition might lead

	to lenders requiring developers to hold extra cash in reserve to manage events potentially falling outside the scope of force majeure should such events occur. We assume that in such a scenario, consumers may have to accept this extra cost as reasonable. **Variation 4:** Under our central case, we calculate the cost of this variation as iBoxx A/BBB 10+ years plus a margin of 175bps. We assume 80/20 gearing ratio. • **To estimate the floor level under Variation 4**: we use the same floor level estimate determined under the cost of Variation 2 above. • **To calculated the cost of Variation 4**: we estimate the floor level based on the default regime notional cost of debt parameters (such as average of iBoxx A/BBB 10+ years and the recovery of 100% of the RAV through depreciation etc.). The sum of the difference over the regime length (between the floor level calculated under cost of Variation 2 above and the floor level based on default regime parameters) is the cost of Variation 4. In the draft IA, we allowed for favourable revenue forecast scenarios for individual projects (where applicable) to offset some of the Variation 4 cost. In our updated IA, we have removed the moderating effect of revenues. Our assessment considers the sum of absolute change in floor level before and after we have applied Variation 4. **Additional notes on cost of Variation 4 to address specific questions from consultation:** We note the following about our cost of Variation 4 estimate: • We kept the premium of 175bps over the default notional iBoxx index assumed under the central case for Variation 4. This is because consultation responses from the two developers were split on what would be a reasonable premium. One suggested it would be much lower (47bps) and the other that it would be much higher (225bps). We note that practical evidence is limited here due to a lack of precedent. • As pointed out in consultation responses, our assumptions under high/low/central cost cases for Variation 4 may appear to be internally inconsistent. We understand that the actual dynamic in a project finance world may often be that of a lower cost of debt resulting in higher gearing - the exact opposite of our high scenario assumption. However, we have followed an approach that could be considered as standalone, as our goal is to capture increased risks exposure and higher costs to consumers under our high cost scenario. Our approach to capture recovery of only 80% of the RAV under our central case and 90% of the RAV under our high cost case is consistent with this goal.

	Cost of delays: Under our central case, we calculate the cost of delay as the total consumer benefit that is lost during the delay period for the project. We also consider any change in net payments to or from consumers as a result of a shorter regime period caused by delays. • **To estimate yearly consumer benefits**: we use the yearly consumer benefits estimated by Pöyry for each project after updating the values to 2018/19 price base and the same NPV base year. • **To estimate net payment position**: we determine cap payments to consumers and floor payments to developers over a 25-year regime length. We do the same for a shorter regime length reflecting delays. We then compare the two net payment positions. • **To estimate the cost of delay**: We estimate the cost of delay as the sum of consumer benefits lost for the years the project did not connect and the result of the two net payment positions (under full and shorter regime lengths). **Additional notes on cost of delay to address specific questions from consultation**: We note the following about our estimate of cost of delays: • In line with regime policy, cap and floor levels remain the same when projects are delayed relative to when they are delivered on time. • Revenue scenario assumed is the Pöyry base case that informed our IPA decision (after making necessary adjustments). • We have assessed the revenue scenario (base case) annually against cap and floor levels. **Notes on other issues raised in consultation responses**: As indicated in one of the response, we assumed a benchmark cost of debt (4% nominal) that was different from our default regime guidance. We did this to maintain comparability with analysis presented in a developer's variation request submission. One response also pointed out that our IDC rate assumption in the draft IA was different from our 2019/20 guidance for Window 2 projects. Our explanation is that we adopted this approach to reflect a market based approach (where actual cost of debt and gearing feeds into IDC calculation). Both assumptions led to a slightly higher RAV estimate and therefore higher floor levels in both our counterfactual case and across the other options, we considered (Options 2, 3 and 4). However, we note that these assumptions had broadly the same impacts across the policy options we considered (with very limited differentiation effect). In our updated assessment, we have modified these assumptions and provided more clarity below:

	• **For default cost of debt benchmark**: We have replaced the cost of debt using estimate based on the 20 days trailing average of the "UK iBoxx non-financials 10+ A rating" and "UK iBoxx non-financials 10+ BBB rating" indexes (with a reference date of 3 October 2019). • **For IDC rate**: We have updated our IDC estimate (under the counterfactual scenario) in line with our 2019/20 guidance for Window 2 projects. For simplicity, we have maintained the same IDC base rate for Window 1 projects but made two extra adjustments to reflect development and construction risk premiums that the default regime provides for Window 1 projects (such as Greenlink). We note that, the IDC rates used in all other scenarios (Options 3 and 4) reflect our market assumptions on gearing and actual cost of debt (except in the case of Variation 4, Approach A, where we maintain a notional approach using iBoxx BBB 10+).
Our draft IA framework and assumptions.	We received feedback on the following key assumptions behind our IA results: cost of variations; policy options and expected outcomes driven by the options; and probability ranges attached to the outcomes. Some responses also suggested that we should be flexible and consider consumer benefits beyond the default regime duration. Others suggested it was unrealistic to assume that all project-financed interconnectors will face similar conditions and are homogenous. We have addressed each of these concerns below: • **Assumptions underpinning our cost of variation estimates**: We have provided above further clarifications around our calculations of cost of variations. Where responses have highlighted specific inconsistencies between our assumptions and the default regime (as in the case of our benchmark cost of debt), we have updated our assumptions accordingly to largely align with the default regime. Where responses have indicated that our assumptions are aggressive (as in the case of cost of Variation 2), we have considered the merits of proposed alternatives and the need to limit consumer exposure to inform our adjustments. We note the updates to our assumptions underpinning cost of Variation 2 after considering responses on the need to limit consumer exposure under it. We now estimate cost of Variation 2 as the potential maximum loss that our assessment suggests is a reasonable trade-off for consumers to enable projects to progress according to timelines. We have set this at four times the annual floor level for the regime duration. • **Policy options and expected outcomes**: Our policy options cover a combination of requested variations that lenders and the developers indicated were the most important. Following consultation, we have not revisited Option 2. We have focused on what we consider to be the more beneficial options - Options 3 and 4. Some responses indicated that Outcome B (projects are delayed but later progressed on balance

	sheet or with the support of a balance sheet partner) was not credible. Another suggested that Outcome C (projects are delayed but eventually developed by the same project finance developers as we approve a smaller set of key variations) was not useful. This implied that our probability modelling across the outcomes might be misleading. If we discard these two outcomes, we would be left with Outcomes A (projects are cancelled) and D (projects are progressed on time using project finance solution). We still consider that Outcomes B and C are credible outcomes and have therefore maintained all four outcomes (A, B, C and D) in this updated assessment. Outcome B covers a scenario where developers are unsuccessful at raising required financing under the project finance route which could possibly lead to a partnership or sale to a balance sheet developer. Whilst it is unclear how we would treat any extra delays caused by a sale process in the absence of Variation 5, this outcome remains valid. Responses from potential lenders were not unanimous on whether they would provide debt financing based on a more limited set of variations than we have approved. This evidence suggests that Outcome C is also credible. • **Probability ranges attached to the outcomes**: We have amended our probability assumptions to reflect new evidence from consultation. Our final IA reflects our updated assumptions. As indicated in a response, we have considered how other combinations of the variations could impact the probability ranges to inform our policy options. In selecting the options, we have focused on combinations that deliver the changes that evidence suggest are necessary to achieve required financing. • **Consumer benefits beyond the default regime duration**: The 25-year regime length is a core aspect of the cap and floor regime and we have implemented the regime to date reflecting this. We recognise that consumers and developers will continue to benefit if an interconnector operates longer than the regime duration, and we expect this to be the case. However, these benefits are not quantified, and we are yet to determine the most appropriate regulatory arrangements for the period after the expiry of the cap and floor regime. • **Project-financed interconnectors will face similar conditions and are homogenous**: This assumption has limited separation power between Options 3 and 4 as our assessment framework provides the flexibility to test this assumption further. A range approach to our probability modelling allows us to consider some differences between projects. We also note that we have estimated variations costs and consumer benefits on a project-specific basis.

	• **Inflation adjustments concern**: We can clarify that the provisional cap and floor are set in the price base of the year that we complete FPA. We would then inflate the cap and floor levels to the relevant assessment year based on actual inflation.
Consultation 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?	
Regime variations should adhere to Ofgem's stated principles, policies and duties.	We note that the regime variation framework is available to all developers. We have assessed requested variations and accepted the ones that we consider will improve outcomes for consumers (based on our IA). We have also set conditions that will ensure that our decision does not undermine the regime principles. We require developers to repay (to the extent possible) any extra loans provided by consumers (under Variation 2). We also aim to restore the risk-reward balance to the arrangement under the default regime (under Variation 4). We will apply Variation 3 for all cap and floor projects.
Ofgem should clarify the future of the discretionary 'within-period adjustments' function if Ofgem grants Variation 1.	The discretionary 'within-period assessment' provision would continue to operate as an aspect of the default regime for projects that have not requested a change. The cap and floor regime has a duration of 25 years made up of five-yearly assessment periods. The 'within-period adjustment' provision enables developers to seek shorter assessment periods when necessary to support loan repayment to lenders. Developers seeking project finance solutions have requested a change to an automatic annual assessment to match the annual repayment cycle that lenders expect. This would remove any uncertainty as to whether Ofgem would approve a within-period assessment request by developers. We will not have a further within-period adjustment mechanism where Variation 1 is granted – we see Variation 1 as replacing the need for the default within-period adjustment mechanism.
Topping up revenues when availability is below the 80% threshold (accepting Variation 2) offers the wrong incentive to developers and may lead to the developer speculating against the floor price.	We have limited the possibility of developers speculating against the floor under this variation. Our application of Variation 2 aims to recover from developers any top-up loan from consumers before developers can recover their equity investment or dividends. We also note that interconnectors must pass a 60-day proving-period test before we confirm the application of the cap and floor regime. This sequence of conditions would ensure that developers are procuring only assets of sufficient quality and reliability, as this would be the only sensible way to ensure recovery of their equity investment and dividends.
Ofgem should align the force majeure clause with STC and	The default regime provides the floor to protect developers from risks, specifically those risks that may be unique to interconnectors. In the case of Window 1 projects, the regime provides further protection to

OFTO definitions, as lenders are already familiar with both. In addition, add other uninsurable events that are unique to interconnectors as assets that span two national regulatory frameworks and carry unique construction risk.	developers to manage risk in the form of 'development' and 'construction' risk premiums. We consider that providing further protection to developers (beyond the level initially intended under the Nemo Link licence consultation) may shift the default regime risk balance in favour of developers. This would be inconsistent with doing the minimum that is necessary to enable developers to achieve required financing solutions. We noted and considered additional events that stakeholders suggested for inclusion in the force majeure definition. While we added only three events that are capable of constituting force majeure, the definition of force majeure – as stated in our decision – is non-exhaustive. This means that it can also accommodate, subject to Ofgem's determination, other events of a similar kind that are not expressly included – such events must be beyond the reasonable control of the licensee.
Ofgem should explain the existing force majeure definition which excludes strike action, where this is typically included in other licences granted by Ofgem.	We grant licences based on the regulatory framework underpinning specific regulatory activities. Our regulatory frameworks, such as RIIO and that for OFTOs, have a different risk-reward balance between licensees and consumers, and therefore require suitable features to reflect the applicable balance. Under the cap and floor regime, we considered that the risk protection (provided by the floor) would be sufficient to allow developers to manage any cost from strike actions. However, continuous engagement with developers and stakeholder have led us to expressly add a strike action to the events under the force majeure definition.
Consultation 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?	
Using project-specific actual cost of debt and gearing will remove the risk of actual cost of debt being different from the notional cost of debt used in the default regime.	We have changed our position on Variation 4. The two interconnectors now have the option to receive floor payments based on the default regime notional approach (using iBoxx BBB 10+) or based on market actual cost of debt and gearing as the developers requested under Variation 4.
Consultation question 8: Do you have any views on the conclusions from our draft IA, or our early thinking on risk mitigation?	
Ofgem should explain why it is considering such material changes to the regime so far into its implementation.	Developers have requested regime variations within required timelines. The regime policy allows developers to request variations before the FPA stage of their respective projects if required to achieve financing.

Appendix 4 – Stakeholder engagement during the cap and floor regime variation requests process

Chart 2: Cap and floor regime variations engagement