Guidance

Interconnector Cap and Floor Regime Handbook

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This is an updated version of the Cap and Floor Regime Handbook originally published on 17 September 2021.

The purpose of this handbook is to:

- explain what Ofgem's cap and floor regime for electricity interconnectors is and where to find the main regime policy information;
- provide up-to-date information on our implementation of, and changes to, the regime policy and design; and
- provide key information on Certification, Access Rules and Charging Methodologies that apply to electricity interconnectors.

We are publishing this updated handbook for your general information. We implemented the changes in this handbook to reflect regime policy updates, include information on the Window 3 application window and reflect general updates to our assessment framework. We encourage you to contact Ofgem if you consider that any of the information is not up to date. We aim to review the Handbook every 2 years, and publish an updated version when necessary, such as when there is a substantial change to the regime or we approve new interconnectors via a new application round.

The document is not a formal decision or a substitute for the interconnector licence conditions. If any section of this document is unclear, or contradicts any part of an interconnector licence, then the licence takes precedence.

Any enquiries related to the text of this publication should be sent to Ofgem at:

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Executive summary

Cap and floor interconnector project developers and other interested parties need to know what our cap and floor regime for electricity interconnectors is, and where to find up-to-date information on the regime.

We are publishing this handbook to make general information on the regime more accessible to stakeholders, bringing existing key information together into one publication, and to enable greater understanding of the regime. We have provided links to our main policy documents and an overview of other regulatory requirements such as Certification, Access Rules and Charging Methodologies that apply to all electricity interconnectors (not just those regulated through our cap and floor regime).

The handbook is set out in five sections:

- **Section 1: Cap and floor regime decisions** provides an overview of key policy decisions to date.
- **Section 2: Licence and related requirements** provide details on cap and floor regime implementation through the licence and related legislative requirements.
- **Section 3: Cap and floor assessment framework** explains the assessments that we carry out before and around when the project starts operating. There are three assessments, and their outcomes inform our final decision on the cap and floor levels that will apply to a project.
- **Section 4: Assessment during operation** explains the assessments that we carry out during the project's operation and throughout the regime duration. These assessments focus on determining how project revenues perform against the cap and floor levels and any corresponding payments from consumers to licensees[1] or from licensees to consumers. It also covers cost reassessment opportunities that are possible during this period.
- **Section 5: Cap and floor regime design** provides detail on key aspects of the regime design.

We encourage stakeholders to make use of the handbook as a consolidated source of information on the cap and floor regime, and to provide ongoing feedback to help us improve and update the handbook.

[1] The terms licensee, developer and project are used interchangeably throughout this handbook.

Introduction

Section summary

This section of the handbook covers:

- context for Ofgem's cap and floor regime for electricity interconnectors.
- overview of the main regime features.
- scope of the handbook, and
- overview of the five main sections of the handbook.

Context

The cap and floor regime is the regulated route for electricity interconnector development in Great Britain (GB). It is a market-based approach that aims to incentivise developers to deliver interconnector capacity by limiting developers' exposure to electricity market price risk. Ofgem rolled out the regime to new electricity interconnectors in August 2014 to incentivise the timely delivery of more interconnectors.

Before the regime was introduced, a limited number of electricity interconnectors had been built. Ofgem created the cap and floor regime to unlock beneficial investment by reducing risks. Interconnectors built before the roll out of the cap and floor regime were IFA (2GW) to France, Moyle (0.5GW) to Northern Ireland, BritNed (1GW) to the Netherlands, and the East West interconnector (0.5GW) to Ireland. These interconnectors were mostly developed as standalone projects on a merchant basis.

Then followed the Nemo Link interconnector (1GW) to Belgium[2] as the cap and floor regime pilot project. We have subsequently held three cap and floor application windows between 2014 and 2022. To date, we have awarded a regime in principle to twelve interconnectors, totalling 12.05GW in cross-border capacity.[3]

[2] Cap and floor regime for Regulated Electricity Interconnector Investment for application to project NEMO (2013): Cap and Floor Regime for application to project NEMO: Impact Assessment | Ofgem

[3] Total capacity excluding NorthConnect. To note, in 2022 we withdrew the cap and floor regime awarded in principle to NorthConnect Limited (NorthConnect) in January 2018 with respect to the NorthConnect interconnector project (1.4GW). NorthConnect - Cap and floor regime withdrawal | Ofgem

Alongside existing interconnectors and approved projects on a merchant basis, the cap and floor regime point-to-point interconnectors approved to date could increase total GB interconnection capacity to 17.05GW. Figure 1 presents the above projects.

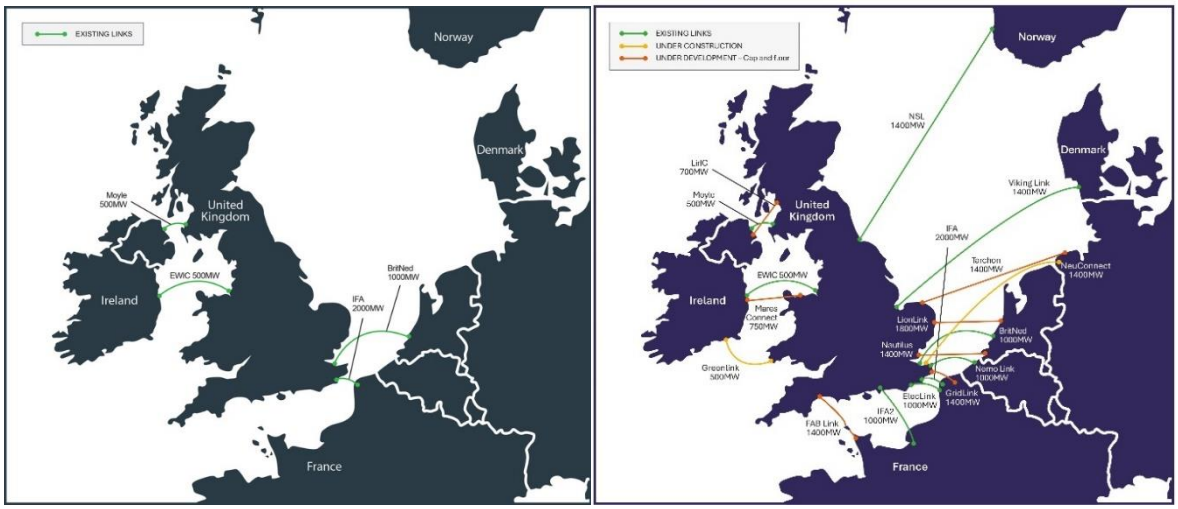


Figure 1: Interconnector map before (left) and after (right) the cap and floor regime was introduced.

Application windows are opened at Ofgem's discretion and do not have a firm rolling timeframe. We may review our interconnector policy ahead of announcing any further cap and floor application windows, as we have done in 2020-21 with the Interconnector Policy Review (ICPR)[4] which informed the creation of Window 3 and the Offshore Hybrid Asset (OHA) Pilot.[5] This is to ensure that the regulatory framework for delivery of further interconnection remains in consumers' interests. The assessment structure and submission requirements for developers may change from window to window. Any changes in the interconnector window application process are communicated through official publications and stakeholder consultations, allowing for feedback before final decisions are made.

The Growth Duty[6] came into statutory effect in 2017 under the Deregulation Act 2015 and requires relevant regulators to have regard to the desirability of promoting economic growth in the UK, alongside the delivery of protections set out in relevant legislation. In 2024, the Growth Duty was extended to include Ofgem, and the statutory guidance was updated. Additionally, Section 202 of the Energy Act 2023 amends the Electricity Act

[4] Interconnector Policy Review: Decision
[5] OHAs are not covered in this handbook as this document focuses on the cap and floor regime that applies to point-to-point interconnectors only. Further information on the OHA Pilot Initial Project Assessment can be found here: Initial Project Assessment of the Offshore Hybrid Asset pilot projects | Ofgem
[6] Growth duty

1989 to include a requirement for Ofgem to have regard to how its decisions may assist the Secretary of State in meeting the UK's net zero emissions target when carrying out its regulatory duties. These new duties affect how Ofgem assesses the GB consumer interest when making decisions to grant a cap and floor regime in principle.

Overview of the main cap and floor regime features

The regime sets a yearly maximum (cap) and minimum (floor) level for the revenues that the interconnector can earn over a 25-year period. Revenues generated by the interconnector are compared against the cap and floor levels every five years (in our default regime) or yearly (where we have approved regime changes). Top-up payments are made to the licensee if generated revenues are lower than the floor; and similarly, the licensee pays back revenues in excess of the cap.

In our default regime, the cap and floor levels are set based on project costs using a typical Regulated Asset Base (RAB) model. We then apply different notional financial return parameters to set the cap and the floor independently. The floor is set to allow a developer with a notional financing structure to recover only their costs and a low rate of return equal to a cost of debt index. To determine returns at the floor, we apply the cost of debt, which is estimated using iBoxx index, to 100% of the Regulatory Asset Value (RAV). The cap is designed to reflect the equity returns in assets with a similar risk profile. To determine returns at the cap, we apply the equity return rate, which is estimated using a Capital Asset Pricing Model (CAPM) approach, to 100% of the RAV.

Developers may request variations to the default regime design, such as adjustments to the floor and cap setting to facilitate raising finance, provided they can demonstrate that these changes are in the interests of GB consumers. This is to reflect that certain aspects of the default regime may be less suitable for some types of financing solutions, and therefore it might limit the pool of capital developers can access.

Scope of the handbook

The scope of this handbook covers regime policy decisions underpinning the cap and floor pilot project (Nemo Link), Window 1, Window 2 and Window 3 projects.

- **1 cap and floor pilot project:** Nemo Link.
- **5 Window 1 projects:** North Sea Link (NSL) (to Norway), FAB Link (to France), IFA2 (to France), Viking Link (to Denmark) and Greenlink (to Ireland).
- **3 Window 2 projects:** GridLink (to France), NeuConnect (to Germany) and NorthConnect (to Norway).

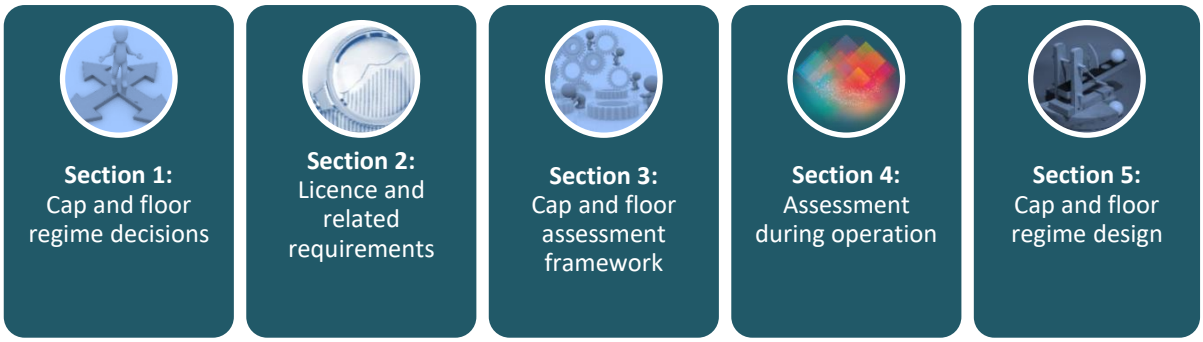
- **3 Window 3 projects:** LirIC (to Northern Ireland), MaresConnect (to Ireland) and Tarchon (to Germany).

This handbook does not cover regime policy decisions, or regime design aspects, for any potential future projects. If we decide to continue with the cap and floor regime in future, we may make changes to the policy design, the assessment framework or the regime design in due course.

Overview of the handbook

Figure 2 provides detail of the five main sections of the handbook.

Figure 2: Regime handbook overview



Section 1: Cap and floor regime decisions is further divided into eight areas:

- Nemo Link (cap and floor pilot project)
- Window 1
- Window 2
- Window 3
- Regime policy updates clarifications
- Regime variations
- Engagement with other National Regulatory Authorities (NRAs)
- Interconnector policy review

Section 2: Licence and related requirements are further divided into five areas:

- Interconnector licence
- Certification
- Access Rules and Charging Methodologies
- Regulatory Instructions and Guidance (RIGs)
- Annual use of revenue submissions

Section 3: Cap and floor assessment framework is further divided into four areas:

- Initial Project Assessment (IPA)
- Regime variations application

- Final Project Assessment (FPA)
- Post Construction Review (PCR)

Section 4: Assessment during operation is further divided into seven areas:

- 60-day test
- Assessing interconnector revenues against the cap and floor levels
- Within Period Assessment (WPA)
- End of Period Assessment (EPA)
- ICF Methodology development and maintenance
- Cap payment to consumers and floor payments to licensees
- Opex reassessment and decommissioning cost reassessment

Section 5: Cap and floor regime design is further divided into three areas:

- Cap and floor regime design
- Cap and Floor Financial Models (CFFMs)
- Interest During Construction (IDC)

Your feedback

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

- Do you have any comments about the overall quality of this handbook?
- Do you have any comments about its tone and content?
- Was it easy to read and understand? Or could it have been better written?
- Any further comments?

Please send any general feedback comments to cap.floor@ofgem.gov.uk

Associated documents

The table below sets our key policy publications relating to the cap and floor regime. We have also highlighted which section(s) of this handbook they relate to. All electricity interconnectors-related publications can be found on the Interconnectors webpage.

Publication[7]	Published	Related sections
Electricity Interconnector Policy	January 2010	Section 1
Open Letter on next steps from Ofgem's consultation on electricity interconnector policy	September 2010	Section 1
Cap and floor regime for regulation of project NEMO and future subsea interconnectors	June 2011	Section 1
Preliminary conclusions on the regulatory regime for project NEMO and future subsea electricity interconnector investment	December 2011	Section 1
Cap and floor Regime for Regulated Electricity Interconnector Investment for application to project NEMO	March 2013	Section 1
Offshore electricity transmission and interconnector policy: minded-to position on interest during construction (IDC)	October 2013	Sections 1 and 5
Cap and floor Regime for application to project NEMO: Impact Assessment	December 2013	Sections 1 and 5
The regulation of future electricity interconnection: Proposal to roll out a cap and floor regime to near-term projects	May 2014	Sections 1, 3 and 5
Decision to roll out a cap and floor regime to near-term electricity interconnectors	August 2014	Sections 1 and 5
Final decision on ElecLink Limited's request for an exemption under Article 17 of Regulation (EC) 714/2009 for a Great Britain-France electricity interconnector	September 2014	Section 1
Decision on cap and floor project eligibility	October 2014	Section 1
Decision on the cap and floor regime for the GB-Belgium interconnector project Nemo	December 2014	Section 1

[7] The certification processes for Nemo Link Limited and IFA2 have been completed under the old framework. New certification processes will be subject to the framework explained in our March 2017 publication.

Publication[7]	Published	Related sections
Initial Project Assessment for the NSN interconnector to Norway	December 2014	Section 3
Integrated Transmission Planning and Regulation (ITPR) project: final conclusions	March 2015	Section 1
Initial Project Assessment for the FAB Link, IFA2, Viking Link and Greenlink interconnectors	March 2015	Section 3
Decision on the Initial Project Assessment of the NSN interconnector to Norway	March 2015	Sections 1 and 3
Open letter: Financing electricity interconnectors under the cap and floor regulatory regime	May 2015	Sections 1 and 5
Decision on the Initial Project Assessment of the FAB Link, IFA2 and Viking Link interconnectors	July 2015	Sections 1 and 3
Cap and floor regime: Update on our Initial Project Assessment of the Greenlink interconnector	August 2015	Section 3
Decision on the Initial Project Assessment of the Greenlink interconnector	September 2015	Sections 1 and 3
Decision to open a second cap and floor application window for electricity interconnectors in 2016	November 2015	Sections 1, 3 and 5
Enabling a range of financing solutions under the cap and floor regime	December 2015	Sections 1 and 5
Cap and floor Regulatory Instructions and Guidance	February 2016	Sections 1 and 2
Proposed changes to the standard conditions of the electricity interconnector licence, licences held by Nemo Link and NGIL and NGET's electricity transmission licence to implement the cap and floor regime and use of revenues compliance	February 2016	Section 2
Cap and floor regime summary for the second window	May 2016	Sections 1 and 5
Consultation on Final Project Assessment of the NSL interconnector to Norway	October 2016	Section 3
Decision on changes to the standard conditions of the electricity interconnector licence, the electricity interconnector licences held by Nemo Link and NGIL and	November 2016	Sections 1 and 2

Publication[7]	Published	Related sections
the electricity transmission licence held by NGET		
An update on 'Window 1' interconnector projects	June 2017	Sections 1 and 3
Initial Project Assessment of the GridLink, NeuConnect and NorthConnect Interconnectors	June 2017	Section 3
Decision on the Final Project Assessment of the NSL interconnector to Norway	July 2017	Sections 1 and 3
Open letter on procedural changes to our Final Project Assessment stage	November 2017	Section 1
Decision on the Initial Project Assessment of the GridLink, NeuConnect and NorthConnect interconnectors	January 2018	Sections 1 and 3
Certification under the ownership unbundling requirements of the Third Package – Decision of the Gas and Electricity Markets Authority – Nemo Link Limited	February 2018	Section 2
Decision on the calculation of Interest During Construction (IDC) and the IDC rate to apply during 2018/19 for offshore transmission and future cap and floor interconnectors	July 2018	Sections 1 and 5
Final Project Assessment of the IFA2 interconnector to France	July 2018	Sections 1 and 3
Decision on changes to the electricity interconnector licence held by National Grid North Sea Link Limited	July 2018	Sections 1, 2 and 4
Update on the Final Project Assessment stage for Window 1 interconnectors	October 2018	Section 3
Decision on 2019-20 Interest During Construction (IDC) rates for offshore transmission projects and cap and floor interconnectors	May 2019	Sections 1 and 5
Guidance: Applying for a gas or electricity licence	June 2019	Section 2
Certification under the ownership unbundling requirements of the Third Package: Decision of the Gas and Electricity Markets Authority – National	June 2019	Section 2

Publication[7]	Published	Related sections
Grid North Sea Link Limited and National Grid IFA2 Limited		
Post Construction Review of the Nemo Link interconnector to Belgium	September 2019	Sections 1 and 3
Consultation on proposed changes to our electricity interconnector cap and floor regime to enable project finance solutions	October 2019	Section 1
Updated Cap and floor Regulatory Instructions and Guidance	December 2019	Sections 1 and 2
Cap and Floor Financial Model 1 Handbook (CFFM1H - Notional Approach) Dual currency (£/€)	December 2019	Section 5
Cap and Floor Financial Model 2 Handbook (CFFM2H - Notional Approach) Dual currency (£/€)	December 2019	Section 5
Decision on proposed changes to our electricity interconnector cap and floor regime to enable project finance solutions	May 2020	Sections 1 and 5
Decision on changes to the electricity interconnector licence held by National Grid IFA2 Limited (NGIFA2)	June 2020	Sections 1, 2, 4 and 5
Cap and Floor Financial Model 1 Handbook (CFFM1H - Notional Approach) Single currency (£)	September 2020	Section 5
Decision on the Final Project Assessment of the Viking Link interconnector to Denmark	September 2020	Sections 1 and 3
Decision on proposed modifications to the standard conditions of the electricity interconnector licence, the special conditions of the electricity interconnector licence held by NGIL and the electricity transmission licence held by NGESO	October 2020	Sections 1 and 2
Certification arrangements in Great Britain following amendments to the ownership unbundling provisions of the Gas Act 1986 and the Electricity Act 1989: End of the transition period	March 2021	Section 2
Electricity Interconnectors Cost Assessment Guidance Document	March 2021	Sections 1 and 2
Consultation on the Final Project Assessment of the Greenlink	March 2021	Sections 1 and 3

Publication[7]	Published	Related sections
interconnector to Ireland and decision on Greenlink's needs case review		
Decision on changes to the electricity interconnector licence held by Greenlink Interconnector Limited (GIL) and the electricity interconnector licence held by NeuConnect Britain Limited (NBL)	June 2021	Sections 2 and 4
Cap and floor interconnectors: Decision on pre-operational force majeure arrangements	June 2021	Section 1 and 2
Cap and Floor Financial Model 1 Handbook (CFFM1H - Actual Cost of Debt Approach)_Single currency (£)	June 2021	Section 5
Interconnector policy review: Working paper for Workstream 1 – review of the cap and floor regime	June 2021	Section 1
Interconnector policy review: Working paper for Workstream 2 – socio-economic modelling	June 2021	Section 1
Interconnector policy review: Working paper for Workstream 3 - wider impacts of interconnection	June 2021	Section 1
Interconnector policy review: Working paper for Workstream 4 - multiple purpose interconnectors	June 2021	Section 1
NeuConnect Britain Limited – Decision on a request for a later regime start date for the NeuConnect interconnector project	August 2021	Sections 1 and 3
Decision on the Final Project Assessment of the Greenlink interconnector to Ireland	October 2021	Sections 1 and 3
Greenlink Interconnector Limited – Decision on a request for a later regime start date for the Greenlink interconnector project	November 2021	Sections 1 and 3
Interconnector Policy Review - Decision	December 2021	Section 1
Decision on our needs case review of the FAB Link interconnector	March 2022	Sections 1 and 3
NeuConnect Britain Limited – Decision on a request for a later regime start date for the NeuConnect interconnector project	March 2022	Sections 1 and 3

Publication[7]	Published	Related sections
Decision on the Final Project Assessment of the NeuConnect interconnector to Germany	July 2022	Section 3
Cap and Floor Third Application Window and MPI Pilot Regulatory Framework- Guidance on our Needs Case Assessment Framework	July 2022	Sections 1 and 3
Decision on the Post Construction Review of the IFA2 interconnector to France	August 2022	Section 3
Update to the provisional cap and floor level for the Greenlink Interconnector	August 2022	Section 3
Targeting Analysis for the Third Cap and Floor Window and MPI Pilot Regulatory Framework	August 2022	Section 1
Determination of the Within Period Adjustment request made by National Grid IFA2	October 2022	Section 4
Application Guidance for the Third Cap and Floor Window for Electricity Interconnectors (revised)	October 2022	Sections 1 and 3
Confirmation of FAB Link interconnector's retention of the cap and floor regime in principle	November 2022	Section 3
NorthConnect - Cap and floor regime withdrawal	December 2022	Section 1 and 3
Determination of the Within Period Adjustment request made by Nemo Link Limited	December 2022	Section 4
National Grid IFA2 - Approval of ICFt methodology	January 2023	Section 4
Nemo Link - Approval of an updated ICFt methodology	January 2023	Section 4
Determination of a further Within Period Adjustment request made by National Grid IFA2	January 2023	Section 4
Decision on project eligibility for the Third Cap and Floor Window for Electricity Interconnectors	February 2023	Sections 1 and 3
National Grid Viking Link Limited – Decision on a request for a later regime start date for the Viking Link interconnector project	April 2023	Section 3

Publication[7]	Published	Related sections
Update to the provisional cap and floor level for the NeuConnect Interconnector	July 2023	Section 3
Certification under the ownership unbundling requirements of the Electricity Act 1989 – Greenlink Interconnector Limited	August 2023	Section 1
Decision on the Post Construction Review of the NSL Interconnector to Norway	September 2023	Sections 1 and 3
Decision on Timelines and Incentives changes for the Third Cap and Floor Window for Interconnectors	November 2023	Sections 1, 3 and 5
Decision on Policy Consultation & Statutory Consultation: Pre-Operational Force Majeure event in the Third Window for Electricity Interconnectors	November 2023	Sections 3 and 5
Statutory consultation: Decision on changes to the electricity interconnector licence held by National Grid Viking Link Limited (NGVL)	December 2023	Section 2
Approval of the Use of Congestion Income Methodology for relevant electricity interconnector licensees	January 2024	Section 2
Initial Project Assessment of the third cap and floor window for electricity interconnectors	March 2024	Section 3
Decision on 2024-25 Interest During Construction rates for offshore transmission projects and cap and floor interconnectors and modification to inflation metrics	March 2024	Sections 1 and 5
Further consultation on the cap rate for the cap and floor regime for Window 3 electricity interconnectors	July 2024	Sections 1 and 5
Nemo Link Electricity Interconnector first End of Period Assessment (EPA)	July 2024	Section 4
Post Construction Review of the Viking Link interconnector to Denmark	November 2024	Sections 1 and 3
Initial Project Assessment of the Window 3 Interconnectors - decision	November 2024	Sections 1 and 3
Changes to the financial parameters of the cap and floor regime for window 3 electricity interconnectors - decision	December 2024	Sections 1 and 5

Section 1: Cap and floor regime decisions

Section summary

This section summarises our cap and floor regime decisions to date, and is grouped into eight areas:

- Nemo Link (cap and floor pilot project)
- Window 1
- Window 2
- Window 3
- Regime policy clarifications
- Regime variations
- Engagement with other NRAs
- Interconnector policy review.

1.1. Nemo Link (cap and floor pilot project)

Nemo Link is the first interconnector project to be regulated under our cap and floor regime. It has a capacity of 1GW and connects Zeebrugge in Belgium to Richborough, Kent in Great Britain. The project developers are National Grid Nemo Link Ltd (a subsidiary of National Grid Plc) and Elia (the Belgian Transmission System Operator (TSO)). Together they jointly own and operate the interconnector. The cap and floor regime applies to the whole of Nemo Link, not just the GB side.

We granted the project a cap and floor regime in December 2014 setting the final cap and floor levels for the Nemo Link project at £77.0m and £43.9m, respectively (in 2013/14 prices). Further detail is set out in our December 2019 Decision on the Post Construction Review of the Nemo Link interconnector to Belgium. The project started commercial operations in January 2019 and progressed to its first End of Period Assessment (EPA), which was completed in July 2024.

1.2. Window 1

The first cap and floor application window (Window 1) for electricity interconnector projects opened on 6 August 2014 and closed on 30 September 2014. Five projects applied for cap and floor regulation in Window 1. We granted a cap and floor regime in principle to all applicants, namely: North Sea Link (NSL) (to Norway) in March 2015, FAB Link (to France), IFA2 (to France), Viking Link (to Denmark) in July 2015 and Greenlink (to Ireland) in September 2015.

Table 1 provides more detail on the five Window 1 projects.

Table 1: Window 1 projects

Project Name	Developers	Connecting country	Capacity (MW)	Expected Connection Date	Status
FAB Link[8]	Transmission Investment and RTE	France	1250	2030/31	Under development
Greenlink	Partners Group	Ireland	500	2025	Under construction
IFA2	NGIH and RTE	France	1000	2021	Operational
NSL	NGIH and Statnett	Norway	1400	2021	Operational
Viking Link	NGIH and Energinet	Denmark	1400	2023	Operational

1.3. Window 2

The second application window (Window 2) for electricity interconnector projects opened on 31 March 2016 and closed on 31 October 2016. Three projects applied for cap and floor regulation in Window 2. We granted a cap and floor regime in principle to the three projects in the Decision on the Initial Project Assessment of the GridLink, NeuConnect and NorthConnect interconnectors in January 2018. These projects are: GridLink (to France), NeuConnect (to Germany) and NorthConnect (to Norway).

Table 2 below provides more detail on the three Window 2 projects.

Table 2: Window 2 projects

Project Name	Developers	Connecting Country	Capacity (MW)	Expected Connection Date	Status
GridLink[9]	iCON Infrastructure Partners III, L.P.	France	1250	2030	Under development
NeuConnect[10]	Allianz Capital Partners; Frontier	Germany	1400	2028	Under construction

[8] Change in both capacity (originally 1.4GW) and expected connection date since the previous publication (previous publication stated 2025).
[9] Change in both capacity (originally 1.4GW) and expected connection date (originally mid-2020s) since the previous publication.
[10] Change in expected connection date from Jan 2024 to Jun 2026 and later to Mar 2028.

Project Name	Developers	Connecting Country	Capacity (MW)	Expected Connection Date	Status
	Power; Greenage Power; Meridiam; Kansai Electric Power				
NorthConnect [11]	Lyse, Agder Energi, Hafslund E-Co and Vattenfall	Norway	1400	Mid 2020s	Cap and floor regime withdrawn

1.4. Window 3

The third application window (Window 3) for electricity interconnector projects opened on 1 September 2022 and closed on 10 January 2023. Seven projects applied for cap and floor regulation in Window 3 and were successful in fulfilling the eligibility criteria, consequently progressing to the Initial Project Assessment (IPA) stage. Of these seven projects, three were awarded the cap and floor regime in principle in our Decision on the Initial Project Assessment in November 2024. These projects are: LirIC (to Northern Ireland) MaresConnect (to Ireland) and Tarchon (to Germany).

Table 3 Provides more detail on the three Window 3 projects.

Table 3: Window 3 projects

Project Name	Developers	Connecting Country	Capacity (MW)	Expected Connection Date	Status
LirIC	Transmission Investment	Northern Ireland	700	2032	Under Development
MaresConnect	MaresConnect Limited	Ireland	750	2030	Under Development
Tarchon	Copenhagen Infrastructure Partners, Volta Partners	Germany	1400	2030	Under Development

[11] Change in status since previous publication. In 2022, we withdrew the cap and floor regime awarded in principle to NorthConnect Limited (NorthConnect) in January 2018 with respect to the NorthConnect interconnector project (1.4GW). NorthConnect - Cap and floor regime withdrawal | Ofgem

1.5. Regime policy updates and clarifications

This section sets out an overview of the policy updates and clarifications to date, more details on each are set out in the relevant publications.

In December 2015, we published our guidance to interconnector developers who are considering requests for variations to the cap and floor regime related to financing. This guidance applies to approved projects.

In February 2016, we published our first Cap and Floor Regulatory Instructions and Guidance for interconnector owners operating under the regime to assist them in completing the regime reporting requirements.

In November 2016, we published our Decision 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. These changes implemented Nemo Link's cap and floor regime and inserted provisions into the Electricity System Operator (ESO) licence to enable the transfer of money between the ESO and Nemo Link.

In June 2017, we published Cap and floor regime: An update on 'Window 1' interconnector projects. This clarified several conditions we placed on interconnectors as part of our IPA decisions. Our publication proposed the following which have now been implemented:

- Extension to the deadline for FPA submission. We allowed a 12-month extension to the deadline for FPA submission in cases where projects can demonstrate significant progress towards development
- Relief for delays to regime start date caused by force majeure events or circumstances. We indicated that we would exclude the duration of any delays caused by force majeure events. This built on the licence conditions we had put in place for Nemo Link, as the pilot cap and floor project. We noted that we would expect Window 1 projects to benefit from similar licence terms in this regard (subject to our standard consultation procedures if we were to roll out this solution to Window 2 projects)
- Extension to the connection date requirement. We extended the deadline of project delays that we would deem material from the end of 2022 to the end of 2023; and
- Changes to project design where these may be in consumers' interests.

In November 2017, we published Cap and floor regime: Open letter on procedural changes to our Final Project Assessment stage. Following an internal review of our

processes, we proposed to publicly consult at the FPA stage only if there are significant changes from the information, we published at the IPA stage (such as if project costs have materially increased, or we are minded to approve variations to the default regime design). We noted that in situations where there are no significant changes, our default approach will be to engage bilaterally with the relevant project developers during our FPA assessment, and then to publish our FPA decision without a public consultation. The letter added more flexibility to our decision-making process at the FPA stage and aimed to reduce administrative burden for developers and for wider stakeholders.

In July 2018, we published our Decision on the calculation of Interest During Construction (IDC) and the IDC rate to apply during 2018/19 for offshore transmission and future cap and floor interconnectors. This decision followed our Review of the methodology for the calculation of the Interest During Construction for offshore transmission and future interconnectors granted the cap and floor regime. We introduced a new methodology for setting IDC rates to apply for Window 2 projects. Our decision changed the timing of setting interconnector IDC from individual assessments at the date of Final Investment Decision (FID) for each project (which is the approach for Window 1 projects) to an annual update applicable to all projects reaching FID in that financial year (to apply to Window 2). We noted that we expect the same treatment will apply to interconnectors considered under any future cap and floor regime application windows (i.e. applicable to Window 3 projects).

We discussed the specific circumstances of each Window 1 project in our October 2018 letter: Timing of the Final Project Assessment (FPA) for 'Window 1' interconnector projects. In addition, we proposed not to place an additional fixed deadline on submissions. Rather, we expect an FPA submission to follow a reasonable period after each project's circumstances are clarified. If we are concerned that this is not the case, we will reevaluate IPA for each project.

In May 2019, we published our Decision on 2019-20 Interest During Construction (IDC) rates for offshore transmission projects and cap and floor interconnectors. This decision updated our approach to estimating Total Market Return (TMR) – an input to the IDC calculation. Given the complexity of the estimation of TMR and the significant work undertaken for our RIIO-2 regulatory regime, we concluded that it is appropriate to align our approach to TMR with the RIIO-2 regime.

In December 2019, we published our updated Cap and Floor Regulatory Instructions and Guidance (RIGs). This was a comprehensive update on the previous version of the document, which we published in February 2016. The update enables Ofgem to collect data from cap and floor interconnectors in a more consistent format.

In October 2020, we published our Decision on proposed modifications to the standard conditions of the electricity interconnector licence, the special conditions of the electricity interconnector licence held by NGIL and the electricity transmission licence held by NGESO. These implemented changes to relevant licences in order to reflect the Clean Energy Package (CEP) Electricity Regulation and implement our decision on our approach to cost sharing and cost recovery under the Capacity Allocation and Congestion Management (CACM) Regulation.

In March 2021, we published our Electricity Interconnectors Cost Assessment Guidance. This document explained the process that we follow whilst undertaking the cost assessments of interconnectors and provides guidance to developers on how to prepare cost submissions for our review.

In June 2021, we published our Cap and floor interconnectors: Decision on pre-operational force majeure arrangements. The decision sets out our approach to providing a means for interconnectors that have encountered delays, caused by force majeure events, during the pre-operational period to request a later regime start date for our consideration.

In June 2021, we published our decision on changes to the electricity interconnector licence held by Greenlink Interconnector Limited (GIL) and the electricity interconnector licence held by NeuConnect Britain Limited (NBL). These changes were required in order to implement the cap and floor regime provisions for the licensees.

In December 2021, we published the decision for the Interconnector Policy Review (ICPR). This decision committed to expanding the approach by which Ofgem assesses new interconnector projects at IPA to account for wider benefits of interconnectors beyond socioeconomic welfare. This decision also committed to exploring ways to improve the regime design to make it simpler, more flexible, and consistent. This decision outlined our view that there was benefit in opening a further cap and floor window and we made a commitment to launch Window 3. This decision also stated that cap and floor would be a suitable framework for regulating Offshore Hybrid Assets (OHAs) (referred to at the time as Multi-Purpose Interconnectors) and we committed to opening a pilot scheme for OHAs. More detail on this can be found in the ICPR.[12] The OHAs are not covered in this handbook as this document aims to focus on the cap and floor regime that applies to point-to-point interconnectors. Readers can refer to our list of associated publications included in this handbook and any new publications regarding OHAs for further information on this topic.

[12] Interconnector Policy Review – Decision

In July 2022, we published our Guidance on the Needs Case Assessment Framework, to be applied to the Window 3 and OHA Pilot IPA. This implements the commitment from the ICPR to expand the assessment framework for new interconnector projects beyond socio-economic welfare. New quantitative elements assessed in the IPA for Window 3 include security of supply, decarbonisation, and system operability impacts.

The Decision on Timelines and Incentives changes for the Third Cap and Floor Window for Interconnectors document introduces key changes to the regime to manage project delivery delays while protecting consumers. It replaces the connection date with a new regime start date, implements a Payback Mechanism for delays, modifies the Backstop Date, and defines Reasonable Delay Events.

The Decision on Policy Consultation & Statutory Consultation: Pre-Operational Force Majeure event in the Third Window for Electricity Interconnectors document outlines how force majeure events will be handled that occur before electricity interconnectors become operational under the third cap and floor window.

The Decision on 2024-25 Interest During Construction introduces a modification to the inflation metrics used in these financial calculations. This adjustment ensures that the metrics better reflect current economic conditions and trends.

In January 2024 we published the Approval of the Use of Congestion Income Methodology for relevant electricity interconnector licensees. It sets forth guidelines and methodologies for allocating these funds, ensuring that they support the efficient operation, maintenance, and development of interconnectors. The approval aims to enhance market efficiency and ensure that congestion income is used transparently and effectively to benefit consumers and grid.

Following the publication of our decision on the Initial Project Assessment (IPA) of the Window 3 interconnectors in November 2024, we published our decision on the Changes to the financial parameters of the cap and floor regime for Window 3 electricity interconnectors in December 2024. This decision may also be applicable to subsequent application windows' electricity interconnectors.

1.6. Regime variations

As part of the regime policy, developers may request regime variations provided they can demonstrate that any proposed variations 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 expect requests from developers to align with our regime regulatory timelines. This means that developers should request regime variations in time to allow for our decision ahead of the FPA stage for their projects.

Following our October 2019 Consultation on proposed changes to our electricity interconnector cap and floor regime to enable project finance solutions, in May 2020, we published our Decision on proposed changes to our electricity interconnector cap and floor regime to enable project finance solutions. This decision changed aspects of our default regime for the Greenlink and NeuConnect interconnectors to enable project finance solutions. Our decision applied to these two projects only, except where we have noted otherwise, as set out in our decision. The licence guidance provides further information on the licence mechanics, including how the regime variations are implemented through the Special Conditions of the relevant interconnector developer's licence.

Overview of our regime variations decision

Table 4: Variations approved for NeuConnect and Greenlink projects

Variation	Decision
Reduce the default five-year revenue assessment period to one year.	Approved
Modify the principle underpinning our minimum availability threshold of 80%.	Approved
Broaden our definition of force majeure under the default regime to include additional events.	Approved
Use project-specific actual cost of debt and gearing to calculate IDC and to set the revenue floor level, rather than the default notional cost of debt and gearing.	Approved

More information on regime variations applications and how we assess them is set out in Section 3.

In the ICPR decision, we noted that we will include the variations approved in our May 2020 decision as default options within our future cap and floor regime, meaning that developers no longer will be required to submit a variation request to have those changes considered. Developers will have the option to choose whether their project will be regulated under the standard mechanisms of the default regime or under the mechanisms approved in our May 2020 decision. We will maintain the current regime variations process for specific changes to the regime that are not included as default options.

1.7. Engagement with other National Regulatory Authorities (NRAs)

We expect developers to engage with the respective NRAs for their project throughout the regime, and this is particularly important during the development stage. We encourage developers to engage with the relevant NRAs to ensure that a relevant regulatory framework is in place in the connecting country for the project to be delivered in line with the timelines developers have suggested to us. We expect developers to reach an agreement with the relevant NRA in the connecting country on the regulatory treatment for the non-GB portion of its interconnector by the FPA submission date, which is a condition placed on developers at the IPA stage.

We are aware that other NRAs may have different regulatory and assessment frameworks, and that elements of these may not necessarily be directly compatible with elements of our cap and floor regime. We are similarly aware that the processes and timelines for regulatory approval differ across connecting countries and may not neatly align with the structure of our cap and floor regime. Through our existing relationships and ongoing collaboration with other NRAs, we have noted positive feedback on the cap and floor regime and have worked with our colleagues in Europe to resolve differences in regulatory approach where required.

We will continue to engage with our counterparts wherever possible to help understand approaches to approval and regulation, and to discuss our cooperation on new cross-border projects. However, it is not our role to influence regulatory approaches or decision making outside of our jurisdiction.

1.8. Interconnector Policy Review and Updated Needs Case Framework

In August 2020, we launched a review of our policy and approach to new electricity interconnectors. The objectives of the review were two-fold: firstly, to establish whether there was a need for further interconnection capacity beyond those projects with regulatory approval (pilot project, Window 1 and Window 2); and secondly to consider our approach to the regulation of future interconnection. The review covered the following four workstreams:

- Workstream 1 – Review of the cap and floor regime to date
- Workstream 2 – Socio-economic modelling
- Workstream 3 – Review of the wider impacts of interconnection
- Workstream 4 – Multiple Purpose Interconnectors (MPIs) (now known as OHAs)

The Interconnector Policy Review Decision provided our decisions on these workstreams, setting out our vision for GB interconnector regulation in the future, and committing to reforms to the cap and floor regime. Newly introduced policy to implement the commitments of the ICPR is discussed above in section 1.5 (Regime policy updates and clarifications).

The ICPR stated that there was continued GB consumer interest in further interconnection, and committed to opening a third window in 2022, while reflecting that in the long term, windows should be targeted, informed by system operator analysis on optimal connection location in GB. The ICPR also committed to expanding the assessment framework used at IPA stage to include wider impacts of interconnectors beyond socioeconomic welfare, to reflect the changing role of interconnectors as contributors to decarbonisation and flexibility. Finally, it stated that the cap and floor regime would be a suitable mechanism for regulating novel OHAs and committed to opening a pilot scheme for a regulatory framework for OHAs.

Section 2: Licence and related requirements

Section summary

This section covers licence and related requirements which is grouped into five areas:

- Interconnector licence
- Certification
- Access Rules and Charging Methodologies
- Regulatory Instructions and Guidance (RIGs), and
- Annual use of revenue submissions.

2.1 Interconnector licence

Under the Electricity Act 1989 (as amended) certain activities may only be carried out with a licence (or under a relevant exemption or exception).

One of our responsibilities at Ofgem is to develop the content of gas and electricity licences, and to grant licences to successful applicants.

An electricity interconnector licence allows the licensee to participate in the operation of an electricity interconnector. This is defined as:

- coordinating and directing the flow of electricity into or through an electricity interconnector; or
- making such an interconnector available for use for the conveyance of electricity.

Documents related to interconnector licence are set out below.

Applying for electricity interconnector licence

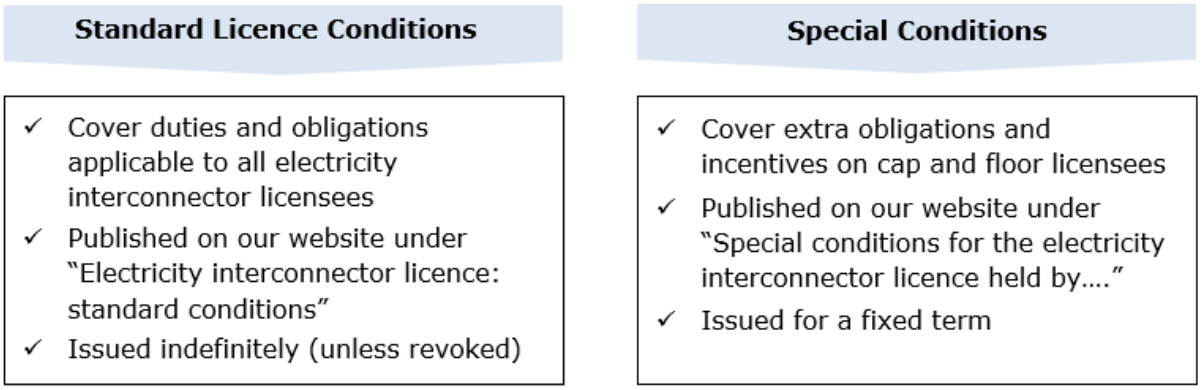
We assess applications for licences in accordance with our licence application guidance published on 18 June 2019. The document can be found on our website at Guidance Document for Applying for a Gas or Electricity Licence.

Our Licences, industry codes and standards webpage have more information on our licence process: Industry codes and standards - Standards and Licences and licence conditions.

Licences contain conditions that licence holders must comply with, including conditions in relation to becoming a party to, and complying with, industry codes and standards. The industry codes establish rules that govern market operation and the terms for connection and access to energy networks.

The Electricity Interconnector Licence broadly comprises two parts. One part sets out the Standard Licence Conditions (SLCs) which apply to all electricity interconnector licensees. The other part, Special Conditions (SCs), set out specific obligations that apply to each electricity interconnector licensee, including with respect to our cap and floor regime.

Figure 3: Licence Conditions



For the avoidance of doubt, the grant of an electricity interconnector licence does not mean the holder of that licence is also granted the cap and floor regime. Both the licence grant and regime grant are assessed and governed under two separate processes.

Standard Licence Conditions

The SLCs apply to all electricity interconnector licensees. They place rules on how holders can operate within their licence. The consolidated versions of our current SLCs are available on our website at: Electricity Interconnector Standard Licence Conditions 08 04 2021.

Special Conditions

The SCs set out cap and floor regime obligations and incentives that apply for each licensee.[13] We have set out below three different implementations (not an exhaustive list) of the SCs:

- Where our default cap and floor regime is the applicable regulatory regime on both the GB side and the connecting country's side (as in the case of the Nemo Link project), a dual currency (€/£) licence applies. The Nemo Link licence is available on our website at: Special conditions of the electricity interconnector licence held by Nemo Link Limited.

[13] The special conditions are not exclusive to cap and floor regime licensees. In certain circumstances, if appropriate, an interconnector licensee, that is not regulated under the cap and floor regime, may also have special conditions inserted in its licence (following our standard licence modification process that is subject to public consultation).

- Where a split regulatory framework is the case (meaning our default cap and floor regime applies only to the GB side of the interconnector), a single currency (£) license applies. The IFA2 Limited licence is an example of this implementation and is available on our website at: Special Conditions of the electricity interconnector licence held by National Grid IFA2 Limited.
- Where a split regulatory framework is the case (but a variation to our default cap and floor regime applies only to the GB side of the interconnector), a single currency (£) licence applies. The Greenlink Interconnector Limited licence and the NeuConnect Britain Limited licence are examples of this implementation. This version of the licence is available on our website at: Decision on changes to the electricity interconnector licence held by Greenlink Interconnector Limited (GIL) and the electricity interconnector licence held by NeuConnect Britain Limited (NBL).

To access all licence condition documentation and to understand which conditions are in effect for which licensee, visit our Electronic Public Register.

Indicative timelines for key licence processes

Developers should take note of the relevant processing time periods and ensure that sufficient time is allowed for their application to be considered. The table below provides key licence processes and the indicative timelines underpinning these processes.

Table 5: Key licence processes and the indicative timelines underpinning licence processes

SLCs process or SCs process	SLCs	SCs
Licence application	The Acts require licence applicants to publish notice of their application within **10 working days** of our confirmation that an application is complete.	N/A
Application acknowledgement	**2 working days**	N/A
Application confirmation as complete	**10-15 working days**	N/A
Processing time	When an application is complete, an electricity interconnector licence can be issued within **65 working days.**	Approximately **one year.** Licence drafting can be completed within **6 months;** statutory licence consultation **28 days;**

		stakeholder feedback review and final licence modification decision within **3 months** of consultation close; and if we decide to make the proposed modifications, they will take effect not less than 56 days after the decision is published.

If the results of our checks and assessment against all relevant criteria are satisfactory, the application notice period has expired, and there are no outstanding issues or questions arising from our assessment of the application, we will proceed to grant the licence applied for to the licensee.

Licensees are expected to comply with the conditions of their licence from the date it is granted. The SLCs applicable to any licence we may grant may be modified. Licensees are responsible for ensuring that they keep up to date on any changes to the SLCs and that they are in compliance. Notices of modifications can be found on our website at: Licence modification notices.

We have the power under sections 28-30F of the Gas Act and sections 25-27F of the Electricity Act to take enforcement action for breach of your licence. More information on enforcement can be found on our website at: Ofgem's powers.

2.2 Certification

This section sets out some key aspects regarding unbundling and certification for interconnectors. Following the UK leaving the EU, Ofgem published an updated document that sets out information on our intended approach to processing applications for certification and undertaking reviews of certification following those changes.

We recommend referring to this publication on certification which stakeholders might find useful: Certification arrangements in Great Britain following amendments to the ownership unbundling provisions of the Gas Act 1986 and the Electricity Act 1989: End of the transition period.

We would typically expect applicants to start this process after the FPA stage (outlined in section 3.3).

Ownership Unbundling

In the context of electricity and gas transmission systems, unbundling means separating the ownership and operation of a transmission network from the activities of electricity generation, gas production and energy supply.

The overall objectives of ownership unbundling are to increase competition in the market, promote transparency and ensure equal treatment by TSOs of the users of their network. Without an effective separation of networks from activities of generation and supply, there is an inherent risk of discrimination not only in the operation of the network, but also in the incentives to invest adequately in the networks.

By law, all TSOs are required to be certified. Interconnectors fall within the definition of a TSO and are therefore required to conform with this law. The certification process is the tool that Ofgem uses to assess the compliance of transmission licences with the unbundling rules.

We encourage stakeholders to familiarise themselves with the ownership unbundling requirements and related Ofgem powers. These are specified in sections 10A to 10O of the Electricity Act 1989 and grouped under a single heading of "Electricity transmission and the operation of electricity interconnectors: independence".[14] In particular, section 10F sets out the ownership unbundling requirements and the related discretionary powers conferred upon the Authority.

Monitoring

TSOs are required to inform Ofgem as soon as possible of any change which may affect the basis of their certification under their licence conditions. In addition to this, TSOs also have to submit an annual declaration, confirming their eligibility for certification or specifying events or circumstances affecting it.

2.3 Access Rules and Charging Methodologies

An interconnector licensee is required to prepare and submit for approval Access Rules (ARs) and a Charging Methodology (CM) prior to the asset being operational for new interconnector projects and, after the asset is commissioned, to actively review those methodologies yearly. The ARs set out the terms and conditions for commercial access to and use of the interconnector, and the CM sets out the methodologies for the calculation of charges imposed for access to, and use of, the interconnector.

Requirements related to the ARs, and the CM are set out in the relevant sections of the electricity interconnector Standard Licence Conditions[15] - SLC 11 and SLC 11A for the ARs and SLC 10 for the CM.

[14] Electricity Act 1989: Electricity transmission and the operation of electricity interconnectors: independence

[15] Some SLCs received minor modifications due to the end of the transition period (i.e. the period that followed 30 January 2020, when the UK left the EU, and lasted until 11pm on 31 December 2020). The related decision and outline of the modifications can be accessed

Access Rules

The ARs outline the terms on which registered members may participate in intraday, day-ahead or long-term capacity auctions on the interconnector and other rules related to access to and use of that interconnector. For more details, please see below some of the key information ARs should include, as per SLC 11A(3):

> *"(a) arrangements for maximising the available interconnector capacity, including: the methodology for the calculation of interconnector capacity, the netting of capacity of any power flows in the opposite direction over the interconnector, the volume of capacity offered on a firm basis and any additional capacity offered on an interruptible basis to maximise cross-border trade*
>
> *(b) arrangements for users to obtain interconnector capacity at appropriate timescales, including, where relevant, the auction rules and procedures for nominating power flows against the capacity.*
>
> *(c) arrangements for the management of congestion, including procedures for the licensee to resell or make available to other users unused interconnector capacity and for users to transfer or resell interconnector capacity.*
>
> *(d) arrangements in the event that the licensee curtails, withdraws or is unable to provide available capacity.*
>
> *(e) arrangements for any ancillary services, such as balancing arrangements, including where users may offer ancillary services to assist with relevant system operator balancing; and 35 Note: Consolidated conditions are not formal Public Register documents and should not be relied on. Electricity Interconnector Licence: Standard Conditions - Consolidated to 25 February 2020*
>
> *(f) any general terms and conditions that a user must accept in order to obtain interconnector capacity."*

We have included below links to some examples of previously approved and currently applicable ARs for some of the current interconnectors for reference.

- Nemo Link Access Rules
- IFA and IFA2 Access Rules
- BritNed Access Rules
- ElecLink Access Rules

Charging Methodology

The primary goal of the CM is to outline charges incurred by a user of an interconnector. The CM also includes a high-level summary of some principles set out in the ARs, in relation to charges, and usually contains multiple references to the ARs. For more

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at the following links: Decision on consequential licence modifications due to the end of the transition period
Annex 2 – Electricity Interconnector

details, please see below some of the key information a CM should include, as per SLC 10(3).

> *"3. The charging methodology shall set out the methodologies for the calculation of any charges imposed for access to (including use of) the interconnector and/or the provision of ancillary services, and any payments made for access to (including use of), the interconnector, including:*
>
> *(a) charges levied by the licensee for the allocation of interconnector capacity, including but not limited to: (i) any charges for congestion management purposes, such as the non-use of nominated interconnector capacity; and (ii) any charges for the provision (including the provision to any relevant system operator) of ancillary services, including but not limited to balancing services*
>
> *(b) payments made by the licensee for the provision of ancillary services provided by users or relevant system operators; and*
>
> *(c) payments made by the licensee to users for the loss of capacity in the event of being unable to make available interconnector capacity."*

We have included below some examples of previously approved and currently applicable CMs for some of the current interconnectors for reference.

- Nemo Link Charging Methodology
- IFA and IFA2 Charging Methodology
- ElecLink Charging Methodology

Assessment

The SLCs provide high-level principles against which both the ARs and the CM are assessed by Ofgem. The information presented in the ARs and the CM should be transparent, objective, non-discriminatory and complaint with the relevant legislation – more details are provided in SLC 11A (4) and SLC 10(4).

Since interconnectors connect two countries with different regulatory regimes, Ofgem actively works with colleagues in other regulatory authorities on approving the methodologies. Apart from the ARs and the CM submitted to Ofgem as required by the licence, the licensee should check regulatory requirements with other regulatory authorities.

We have provided links to our website at the end of this section for some examples of our recently published decisions. Please note that once Ofgem approves new ARs and/or a new CM, and once the implementation period finishes, those new documents will replace the old methodologies.

Consultation

Before submitting ARs or a CM to Ofgem, the licensee must consult on the content or changes to both ARs or CMs for a 28-day period with all persons who may have a direct

interest (including those from other countries), both when submitting a new methodology or modifying an existing one. The relevant SLCs are:

- for ARs: SLC 11A(5/a) for a new submission & SLC 11A(10/a) for a modified submission; and
- for CM: SLC 10(5/a) for a new submission & SLC 10(11/a) for a modified submission.

Submission

When submitting new or updated ARs or CMs to Ofgem, the licensee has to accompany the submission with a covering letter that includes relevant details as outlined below.

ARs (SLC 11A(5/b)) – for a new submission [similar details are required for CM – please see SLC 10(5/b)]:

> *"5. Prior to submitting the Access Rules to the Authority for approval the licensee shall: (…) (b) furnish to the Authority a report setting out: (i) the terms originally proposed in the Access Rules; (ii) the representations, if any, made by interested persons; and (iii) any change in the terms of the Access Rules intended as a consequence of such representations."*

ARs (SLC 11A(10/b)) – for a modified submission [similar details are required for CM – please see SLC 10(11/b)]:

> *"10. Subject to paragraphs 12 and 13, the licensee shall not make a modification to the Access Rules unless the licensee has: (…) (b) furnished the Authority with a report setting out: (i) the terms originally proposed for the modification; (ii) the representations, if any, made by interested persons to the licensee; (iii) any change in the terms of the modification intended in consequence of such representations; (iv) how the intended modification better achieves the relevant access rules objectives; and (v) a timetable for the implementation of the modification and the date with effect from which the modification (if made) is to take effect, such date being not earlier than the date on which the period referred to in paragraph 13 expires."*

Decision

After the submission of the methodologies, Ofgem has up to three months to issue a decision whether the methodologies should be approved on the basis that they meet the relevant objectives. In the absence of any direction within three months of receipt the submission is deemed as approved. The relevant SLCs are:

- for ARs: SLC 11A (7) for a new submission & SLC 11A (13) for a modified submission; and
- for CM: SLC 10(7) for a new submission & SLC 10(14) for a modified submission.

Implementation

After the approval, there is an implementation period of 28 days, unless Ofgem directs otherwise, as noted below.

ARs (SLC 11A (14)) - [similar conditions are applied to CM – please see SLC 10(15)]:

> *"14. The licensee shall publish (at least on its website) the Access Rules as soon as practicable after the Access Rules have been approved by the Authority, or, where the Access Rules have been modified, the Access Rules as modified. Unless the Authority directs otherwise, the Access Rules shall be published 28 days prior to coming into effect."*

Summary of timelines

We expect the following process to take at least six months:

- Drafting of ARs/CMs by the licensee.
- Early engagement with Ofgem, e.g. to discuss drafts for new projects or intended changes.
- Consultation period (28 days).
- Adjusting methodologies following the consultation to take into account feedback from stakeholders.
- Post-consultation engagement with Ofgem.
- Formal submission to Ofgem.
- Ofgem's time for issuing a decision (three months).
- Implementation period (28 days).

Active review process

The licensee has a duty to review their ARs and CM each year as set out in the SLCs. If the licensee does not think that a modification is necessary, then they can notify Ofgem saying so. The relevant sections of the SLCs describing the duties related to modifying the documents are provided below.

ARs (SLC 11A (8) & SLC 11A (11)) – [similar duties are required for CM – please see SLC 10(9) & SLC 10(12)]:

> *"8. The licensee shall review its Access Rules at least once in each calendar year and, subject to paragraphs 10 to 13, make such modifications to the Access Rules as may be requisite for the purpose of ensuring that the Access Rules better achieve the relevant access rules objectives.*
>
> *11. The licensee shall not propose a modification to the Access Rules more than once a year unless the Authority consents otherwise."*

Amendments and review on Ofgem's request

Ofgem has the power to request direct changes to, as well as request a review of, both the ARs and the CM if we believe this is in the interest of market participants and better

facilitates relevant objectives as described in the relevant sub-section above. The change or review process follows similar process as described in previous sub-sections as per relevant SLCs:

- for ARs: SLC 11A (6) & SLC 11A (9); and
- for CM: SLC 10(6) & SLC 10(10).

Overview of key elements of a successful submission

Throughout the submission process outlined in the above sub-sections, the licensee should consider the following suggestions to enhance the quality of the submission and to ensure that the submitted methodologies are fit for purpose and robust. These include:

- Establish a proper consultation process and maintain high-quality and active engagement with market participants, including tracking and replying to consultation responses and taking comments into account.
- Consider pre-consultation and post-consultation (pre-submission) engagement with Ofgem on the ARs/CMs, including providing Ofgem with early visibility of any draft versions of documents, as we want to work with parties to ensure they submit ARs and CMs which meet the relevant objectives and that we are aware of the proposed content or any upcoming changes.
- Prepare a detailed letter accompanying the formal submission, in line with the relevant SLCs as mentioned in the relevant sub-section above, which outlines the main changes, as well as reasoning for these, when submitting or updating ARs/CMs – that letter should include, for example, explanation of how the submission facilities the relevant objectives.

Provide Ofgem with 'clean' and 'track-changes' versions of the ARs/CMs which show the changes that have been made in comparison to the previous versions of methodologies as well as showing updates made after the consultation process, both when submitting new and updating previous methodologies.

Examples of Ofgem's previous decisions

The table below shows some of the most recent examples of Ofgem's approval decisions of ARs and CMs; more examples can be found at Ofgem's website.[16] Please note that once Ofgem approves new ARs and/or a new CM, and once the implementation period finishes, those new documents will replace the old methodologies.

[16] Ofgem's decisions on ARs and CMs can be accessed at the following link: Policy and regulatory programmes | Ofgem

Please also note that some of the methodologies provided on Ofgem's website were drafted and approved when the UK was still in the EU (and was part of the Internal Energy Market (IEM)) and have been subsequently updated.

Table 6: Non-IEM methodologies – currently applicable (a few examples)

Publication	Published
Approval of the Access Rules and Charging Methodology for the IFA2 interconnector to apply in case the UK leaves the EU without a deal	October 2019
Approval of the updated Access Rules and Charging Methodology for the IFA interconnector to apply in case the UK leaves the EU without a deal	October 2019
Approval of the modified Access Rules and the modified Charging Methodology for the ElecLink interconnector to apply in case the UK leaves the EU without a deal	December 2019
Approval of the modified Access Rules for the BritNed interconnector to apply at the end of the transition period	December 2020
Approval of the modified Access Rules and the modified Charging Methodology for the Nemo Link interconnector pursuant to Standard Licence Condition 11A and 10 of the Electricity Interconnector Licence	February 2021

2.4 Regulatory Instructions and Guidance (RIGs)

This section is an overview of our cap and floor Regulatory Instructions and Guidance (RIGs) and the processes that we follow whilst undertaking the cost assessments of interconnectors under the cap and floor regime.

In February 2016, we published our Regulatory Instructions and Guidance (RIGs). In December 2019, we published updates to it. We provide links to the relevant documents above and encourage our stakeholders to use these publications for full guidance.

The guidance sets out the purpose and structure of the RIGs, which apply to interconnectors operating under the cap and floor regime. It also sets out guidance on the process for reporting under the RIGs and our requirements.

The reporting requirements relating to the cap and floor regime are contained in Standard Condition 25 (Cap and Floor Regulatory Instructions and Guidance) of the Electricity Interconnector Standard Licence. This licence condition sets out the scope and governance arrangements for the cap and floor RIGs.

The RIGs documents should be read in conjunction with SLC 25. In the event of any inconsistency between SLC 25 or any licence condition(s) and RIGs, the licence condition(s) will take precedence.

The RIGs provide a framework that enables us to collect data from licensees during the construction and the subsequent regime period. We collect data to enable us to implement and monitor licensees' performance under the regime.

For example, the RIGs allow us to: monitor the expenditure during construction; monitor construction progress; and inform the post construction cost assessment. The RIGs also provide a database of construction cost performance, which we may draw on to set cost proposals at subsequent cap and floor windows.

Cost Assessment Guidance

Further to the RIGs guidance, we have also developed cost assessment guidance to help stakeholders understand our cost assessment process under the regime; we published this guidance in March 2021. The document also explains how developers should prepare cost submissions for our review: Electricity Interconnectors Cost Assessment Guidance Document.

Construction phase annual reporting

Following the FPA stage and throughout the construction period, developers are required to submit annual reports detailing construction progress, financial information and explanations including details of any cost variations from those set at the FPA. These must be submitted to us in line with the project's licence, and the reporting must be in line with the RIGs guidance.

These annual reports ensure that a clear paper trail of all expenditures is maintained and that there is traceability of costs related both to the original contracts and to any cost variances necessary for the economic delivery of the project. We undertake an assessment of these reports and cost updates following their submission to us but do not take a final view during these assessments. The aim of the assessments is to inform our final view at the PCR stage.

The developer is required to maintain high quality financial records and evidence of expenditure during construction. The guidance provides more detail on what interconnectors should include in the required annual reporting.

How we use the construction phase annual reports

During our assessments of the annual reports, we will review the information presented, evaluate any cost changes and any items we noted to review as part of the FPA. We may ask questions through recorded supplementary questions (SQs) and discuss with the

developer any costs that need further explanation or supporting evidence. We will close our review by providing a brief summary of our provisional conclusions to the developer.

Although the annual submissions are a requirement, their review is an informal part of the cap and floor process. Therefore, the positions that we present during our annual assessments will not be finalised or confirmed until the PCR stage.

Annual reporting during operation (overview)

Once the interconnector has begun commercial operations, the developer is required to submit annual updates to us throughout the regime duration. The annual submissions during this period enable us to monitor the performance of an interconnector; compliance with licence conditions; and ensure that the project is able to finance its activities and obligations.

The RIGs and our cost assessment guidance document provide further details on the requirements associated with the operational annual submissions.

Regime Reopeners

Whilst the primary focus of the operational reporting is revenues earned by the interconnector, we also undertake an assessment of specific costs as and when this is required, most notably as a result of specific costs reopeners that may have been triggered. The relevant regime reopeners are set out in a licensee's Special Conditions. Further information can be found in section 4.7 of this document.

2.5 Annual use of revenue submissions

SLC 9 requires licensees to submit, by 31 January, an annual Use of Revenues statement to ensure that revenues derived from the allocation of interconnector capacity are used in accordance with Article 19 of the Retained Electricity Regulation.[17] SLC 9 is applicable to all electricity interconnector licensees (unless the licensee has been granted an exemption from compliance with its provisions).

The use of revenues statement must set out:

- The total amount of revenue the licensee has received from the allocation of interconnector capacity for the 12-month period ending on 31 December of the previous year

[17] By "Retained Electricity Regulation" we mean Regulation (EU) 2019/943 as amended by Regulation 7 and paragraph 18 of Schedule 4 of the Electricity and Gas (Internal Markets and Network Codes) (Amendment etc.) (EU Exit) Regulations 2020 (2020 No. 1006).

- The use made of those revenues pursuant to paragraph 2 of Article 19 of the Retained Electricity Regulation, including the specific projects the income has been used for
- the amount placed on a separate account line
- the amount of income to be taken into account by the Authority when approving the methodology for calculating network tariffs, and/or in assessing whether tariffs should be modified
- A statement verifying that, in the licensee's view, the actual use of revenues is in accordance with Article 19 of the Retained Electricity Regulation
- Any changes in approach or categorisation since the last submitted use of revenues statement.

We will review these submissions and may request further explanation or evidence from the licensee if the submission does not contain all required information. If we are satisfied with the reporting requirement, we will issue a direction to the licensee. In accordance with the licence, if no direction is issued by the Authority within three months of receipt of the use of revenues statement from the licensee, the submission is deemed to be approved.

By 1 March, we will publish a report setting out the information received from licensees in the statement outlined above.[18]

Pursuant to Article 19(4) of the Retained Electricity Regulation, the Use of Revenues, in accordance with Article 19(2) of the Retained Electricity Regulation, is subject to a methodology. In our 2021 Use of Revenues report, we noted that the GB Interconnector TSOs must submit a common methodology by 30 June 2022. The TSOs have since developed and consulted on a proposed Use of Congestion Income Methodology which Ofgem approved on 12 January 2024.[19]

Following our assessment of the procedural and substantive requirements of Article 19 of the Retained Electricity Regulation, we were satisfied that the proposed Methodology meets all the requirements detailed therein. The Methodology applies to revenues from congestion income collected from 1 January 2024 (therefore reported by 31 January 2025) and going forward, reported in accordance with the requirements.

[18] Example: Electricity interconnector Use of Revenues report – 2023
[19] Approval of the Use of Congestion Income Methodology for relevant electricity interconnector licensees

Section 3: Cap and floor assessment framework

Section summary

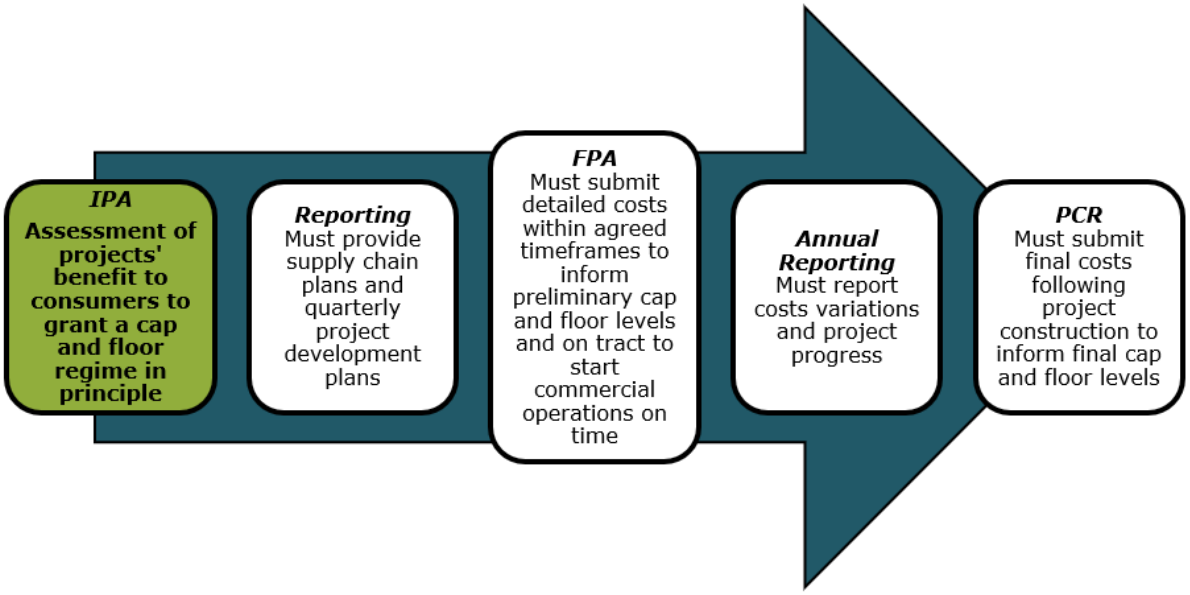
This section sets out the assessments that we carry out under our cap and floor assessment framework:

- Initial Project Assessment (IPA)
- Regime variations application
- Final Project Assessment (FPA), and
- Post Construction Review (PCR).

These assessments take place through the development and construction phases, with the PCR taking place around the time that a project starts operating. The outcomes of these assessments inform our final decision on the cap and floor levels that will apply to a project.

3.1 Initial Project Assessment (IPA)

Figure 4: Overview of our cap and floor assessment stages



The IPA considers the 'needs case' for a project. This involves undertaking a detailed cost benefit analysis for the project(s) in question with the aim of understanding how the project(s) will impact GB as a whole, including GB consumers, GB producers and other interconnectors.

This is predominately an economic and qualitative assessment, taking into account the total costs and benefits of new interconnectors, the project's maturity and likelihood of a

project being delivered by the connection deadline for the window (introduced in Window 3), and assessing the likely impacts on consumers and other groups.

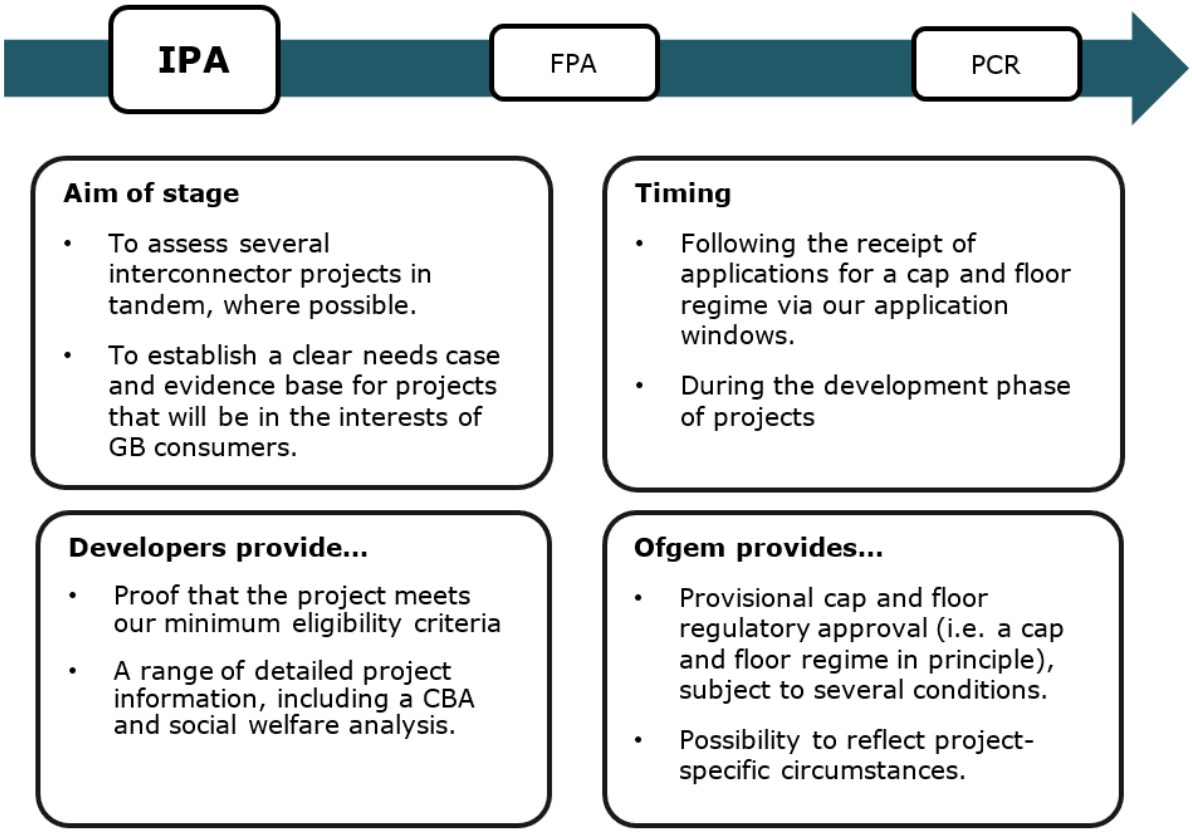
The cap and floor regime may apply to the project as a whole, as in the case of the Nemo Link interconnector. The regime also allows flexibility if the connecting country requires a different regulatory approach. In such a case, the cap and floor regime would apply to half the project's costs and revenues (accounting for the GB licensee's share of the interconnector). Cap and floor revenue levels are then set assuming that costs and revenues will be shared 50:50 between the GB and connecting country.

Whilst our default approach is to share costs equally, we may choose to adopt alternative arrangements in specific circumstances. This would depend on agreements reached with the NRA in the country connected by the interconnector. It may also depend on agreements reached with developers of that particular interconnector. An example of this is FAB Link project, whose proposed cost and revenue sharing is 65% (GB) and 35% (France), as proposed by the developers due to the geographical spread of the investment.

Our Window 1, Window 2 and Window 3 IPA assessment consultations provide further detail on our assessment process, and links to these publications can be found in the associated documents table in the Introduction Section of this document.

To date, we have undertaken our IPA stage via application windows – we have run three application windows so far. We took a window-based approach because it allows us to account for interactions between projects in our analysis. This approach also enables us to identify the most beneficial projects overall, especially in situations where the total need might be less than the number of proposed projects.

Figure 5: Overview of IPA Stage



3.1.1 Eligibility requirements

Window 1

We set out detailed IPA eligibility criteria and guidance alongside our 2014 consultation and decision to roll out a cap and floor regime to near-term electricity interconnectors and then in our October 2014 decision on cap and floor project eligibility.

Our eligibility criteria distinguish near-term projects from those that are less mature. Applications in the first window had to meet the following eligibility criteria and provide the necessary evidence in their application:

- an interconnector licence (granted or application duly made)
- a connection date in place to provide market-to-market interconnection by the end of 2020 (or an existing connection agreement requiring modification)
- all required submission information for the IPA stage complete.

Window 2

We then set out detailed IPA eligibility criteria for Window 2 in our 2015 Decision to open a second cap and floor application window for electricity interconnectors.

Applications in the second window had to meet the following eligibility criteria and provide the necessary evidence in their application:

- a GB connection agreement for connection prior to the end of 2022
- an interconnector licence (either granted or application duly made)
- all required submission information for IPA stage complete.

Window 3

The Application Guidance for the Third Cap and Floor Window for Electricity Interconnectors sets out the cap and floor regime application process for Window 3 applicants, following our ICPR decision from December 2021. This included guidance for potential applicants on eligibility and submission criteria for the IPA stage.

Following the application submission, we undertook an eligibility check to confirm whether the individual applications met the criteria set out below. Each application had to meet the following eligibility criteria and provide necessary evidence in their application:

- a GB connection agreement for connection prior to the end of 2032,
- an interconnector licence (granted or application made), and
- all required submission information for IPA stage complete, including indicative costs and plans for obtaining a grid connection and regulatory approval(s) in the connecting country.

Compared to previous windows, Window 3 set a higher maturity threshold for applicant projects, and as part of the Application Guidance we asked developers to submit evidence showing positive engagement with authorities in the connecting country.

3.1.2 Project assessment at IPA

Our project assessment at IPA includes an assessment of the impacts of the interconnector project, how existing and proposed projects interact, and whether they are likely to be in the interests of GB consumers and GB as a whole.

At the IPA stage we assess projects on the basis of developers' submissions, our own quantitative modelling comparing all applicant projects, and analysis on each project's system impacts provided by the ESO.

For Window 3, we expanded our quantitative modelling to include a wider range of indicators beyond socio-economic welfare, following from the decision in the ICPR to amend the framework and reflect the expanding role of interconnectors as assets which contribute to security of supply and decarbonisation. In contrast to Windows 1 and 2,

Window 3 and the OHA pilot included a stage of applicant engagement through a series of modelling workshops before the quantitative modelling of the IPA began, to set the scenarios and approach to the modelling. This was undertaken to improve transparency around our approach to decision-making. This is outlined in further detail in the Guidance on our Needs Case Assessment document, and in the methodology appendices of the Window 3 IPA consultation. The Window 3 and OHA pilot processes were run in parallel.

Windows 1 and 2 required the applicant to submit a cost-benefit analysis for their project containing a plausible range of scenarios and including detailed cost data where possible. This was made an optional requirement for Window 3, providing developers with an opportunity to present their own analysis for consideration at modelling workshops. Developers could opt to present and justify different approaches to scenario selection.

The Window 3 IPA consisted of three main components in line with the Window 3 Application Guidance and the Guidance on our Needs Case Assessment document. Our decision making was not weighted across these three components. The final decision on whether to award a cap and floor regime in principle was taken by the Authority in line with the Application Guidance for Window 3 and the Authority's principal objective.

The details of the Window 3 IPA methodology can be seen in Section 3 of the Window 3 IPA consultation, as a high-level summary the three main components were:

- **The maturity and deliverability analysis**- conducted through Ofgem analysis of applicant-submitted business plans for their projects, structured by the criteria set out in the Application Guidance.
- **The market modelling**- quantitative modelling on the socio-economic welfare, decarbonisation and security of supply impacts for projects, conducted by our consultants at Arup. The indicators for this assessment were set out in our Needs Case Assessment guidance document. Arup also provided 'Red-Amber-Green' (RAG) ratings for the hard to monetise impacts.[20]
- **The system impacts modelling**- quantitative modelling on projects' constraint cost impacts and other system benefit derived from providing ancillary services to the grid, conducted by NESO. The indicators for this assessment were set out in our Needs Case Assessment guidance document.

[20] As noted in paragraph 3.23 of the Window 3 IPA consultation, Ofgem added to Arup's RAG scoring of hard-to-monetise impacts and we provided our own RAG rating which was treated as decisional.

The outputs from the market modelling and system impacts analysis were combined into a Multi-Criteria Assessment (MCA) conducted by our consultants at Arup, published alongside the Window 3 IPA consultation.

3.1.3 IPA timelines

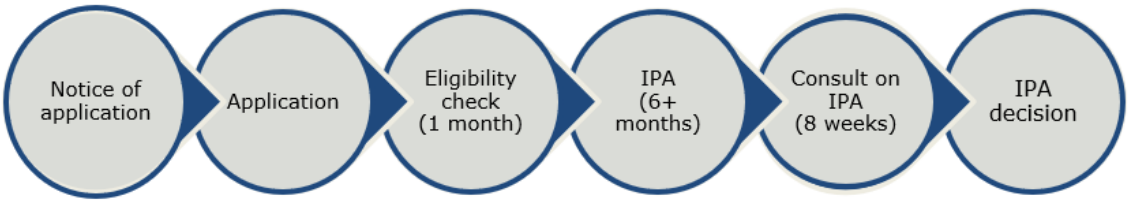
Please note expected timelines are provided as an estimate only and are subject to change.

Where the timings of applications allow, we assess and consult on projects together. However, we may make our decision on how to group our assessment based on the following:

- The timings of applications.
- The likely interactions between the projects applying.
- The maturity of a project and its immediate timescales.

If we assess projects in isolation or in smaller groups, we may assess them against a suitable set of assumptions for future interconnection development.

Figure 6: An indicative timeline for the IPA stage



3.1.4 IPA conditions

As part of our Window 1, Window 2 and Window 3 IPA decisions, we placed a number of conditions on projects to ensure that developers were incentivised to deliver projects in a timely and efficient manner.

Window 1 conditions

Initial Window 1 IPA conditions were set out in the 2015 Decision on the Initial Project Assessment of the FAB Link, IFA2 and Viking Link interconnectors.

We noted that our decisions for each of the successful projects are contingent on progress being generally in line with the timelines, cost estimates and commercial arrangements provided in the project's IPA submission.

For cost estimates, the condition is that the costs submitted by the project developers do not materially rise. We considered the threshold for materiality of any cost escalation

against the potential impact on the needs case and consumer benefits, the original estimates provided, and comparable costs for similar projects.

To maintain eligibility for the cap and floor regime, each project was required to submit sufficiently detailed information for our FPA to start within three years of the IPA decision – see further information on this below in 'Timings between IPA and FPA'. This information had to be guided by detailed discussions with the supply chain and tender returns to support cost estimates. To make sure consumer interests remain protected, we also required developers to:

- Provide us with quarterly written reports on progress against a number of key development milestones, including (but not limited to) development work, consenting and permitting, procurement, financing, operational management plans and costs, project management, and other factors that had an impact on our IPA welfare assessment;
- Confirm the timing of FPA submission in writing to Ofgem at least two months before the expected submission date; and
- Additionally, give formal written notice of any material changes to the project's design, such as changes in capacity, connection location or connection date.

If any information given to us before making our IPA decision led us to consider that the basis of our IPA decision had materially changed, then we chose to require a further IPA stage. In this case, we may re-run our analysis in order to confirm whether the project continues to be in consumers' interests and should continue to be granted a cap and floor in principle.

Material changes would include any prospective delays in project delivery of more than 3 years.

Regime start and end date (Window 1)

The start date of the 25-year cap and floor regime for a particular interconnector project reflects an element of the minimum eligibility criteria for the relevant cap and floor application window (as noted in the eligibility section above), so for Window 1 projects - this was the earlier of the actual connection date or 1 January 2021.

In situations where projects would be delivered later than 1 January 2021, the 25-year duration of the cap and floor regime would be reduced by the length of the delay. This would effectively give the regime an end-date of 31 December 2045, regardless of the operational start-date. Some of the regime period lost due to delays may be reinstated where the delay was caused by an event or circumstance of pre-operational force majeure via our pre-operational force majeure mechanism.

Backstop date (Window 1)

The regime start date of all Window 1 projects is 1 January 2021 with a connection deadline/backstop date of 1 January 2024. Any delay beyond the connection deadline may mean revisiting our IPA analysis. This was set out in our IPA conditions above, and further clarified in the Decision on the Final Project Assessment of the Viking Link interconnector to Denmark.

Timings between IPA and FPA (Window 1)

Our August 2014 cap and floor rollout decision put in place an IPA condition whereby projects that were successful at the IPA stage had two years to submit sufficient information for our FPA assessment to begin.

The intent of this IPA condition was to ensure that developers make timely progress with their respective projects, and to recognise that the justification for a project may change over time. Our initial Window 1 IPA conditions were set out in the 2015 Decision on the Initial Project Assessment of the FAB Link, IFA2 and Viking Link interconnectors.

To ensure that our regulatory framework is not a barrier to projects that would otherwise deliver benefits for consumers, we provided a 12-month extension (An update on 'Window 1' interconnector projects) in 2017 to our original 2-year deadline from IPA decision to FPA submission. We noted in the 2017 letter that in cases where projects were unable to submit sufficient information within the extended deadline, we would redo the IPA on a project-specific basis and confirm or remove the cap and floor for the project.

We discussed the specific circumstances of each Window 1 project in our October 2018 letter: Timing of the Final Project Assessment (FPA) for 'Window 1' interconnector projects. In addition, we proposed not to place an additional fixed deadline on submissions. Rather, we expected an FPA submission to follow a reasonable period of time after each project's circumstances are clarified. If we were concerned that this was not the case, we would redo the IPA for each project.

Window 2 conditions

Our initial conditions and amendments for Window 2 were set out in our 2017 consultation and decision on Initial Project Assessment of the GridLink, NeuConnect and NorthConnect Interconnectors:

1. If any information given to us before making our FPA decision led us to consider that the basis of our IPA decision had materially changed, then we may choose to require a new IPA stage. Material changes would include any prospective delays in project delivery of more than 3 years.

2. We will also reconfirm at the FPA stage that the assumptions regarding connected country energy market access and electricity trading rules on which the IPA decision was based remain broadly correct at the time of the FPA. Should this position change, Ofgem reserves the right to revisit the needs case in order to confirm whether or not the project continues to be in consumers' interests and should continue to be granted a cap and floor arrangement.
3. Project progress is generally in line with the timelines, cost estimates and commercial arrangements provided in the project IPA submissions. For cost estimates, the condition is that the costs submitted by the project developers do not materially rise. (We will consider the threshold for materiality of any cost escalation against the potential impact on the needs case and consumer benefits, the original estimates provided, and comparable costs for similar projects.) For the avoidance of doubt, this condition also includes developers reaching agreement with the relevant NRA in the connecting country, on the regulatory treatment for the non-GB portion of its interconnector, by the FPA submission date.
4. Developers must also:
   (a) Submit sufficiently detailed information for our FPA to start within three years of an IPA decision. This information will need to be informed by detailed discussions with the supply chain and tender returns to support cost estimates.
   (b) Submit quarterly written reports on progress against a number of key development milestones, including (but not limited to) development work, consenting, and permitting, procurement, financing, operational management plans and costs, project management and other factors that had an impact on our IPA welfare assessment.
   (c) Confirm the timing of FPA submission in writing to Ofgem at least two months before the expected submission date.
   (d) Give formal written notice of any material changes to the project's design, such as changes in capacity, connection location or connection date. Following any such change, developers must explain the rationale for the change and the implications for project costs and delivery timescales.

Regime start and end date (Window 2)

The start date of the 25-year cap and floor regime for a particular interconnector reflects an element of the minimum eligibility criteria for the relevant cap and floor application window (as noted above in the eligibility section). For Window 2 projects – this was the

earlier of the actual connection date or a date up to 12 months after the target connection date of the end of 2022 (i.e. by 1 January 2024).

The 12-month addition was added in our 2015 Decision to open a second cap and floor application window for electricity interconnectors. In situations where projects are delivered later than 1 January 2024, the 25-year duration of the cap and floor regime will be reduced by the length of the delay. This will effectively give the regime an end date of 31 December 2048, regardless of the operational start date. Some of the regime period lost due to delays may be reinstated where the delay was caused by an event or circumstance of pre-operational force majeure via our pre-operational Force Majeure mechanism to be considered on a case-by-case basis.

Backstop date (Window 2)

The target connection date for Window 2 projects was the end of 2022. In our first Window 2 IPA condition, we noted that material project changes would include delays of more than three years from this date. This therefore gives a connection deadline, or backstop date, of the end of 2025. Any delay beyond this connection deadline may mean revisiting our IPA analysis.

Timings between IPA and FPA (Window 2)

Developers must submit sufficiently detailed information for our FPA to start within three years of an IPA decision. This information will need to be informed by detailed discussions with the supply chain and tender returns to support cost estimates. If developers fail to submit within three years of IPA decision, we may revisit our IPA analysis.

Conditions for both Window 1 and Window 2

Force majeure

In our 2017 update on 'Window 1' interconnector projects letter, we proposed to exclude delays to the regime start date caused by force majeure events as we understand that sometimes delays are caused by specific external factors. Whilst the IPA and FPA conditions for Window 1 and Window 2 projects on regime start and end dates remain in place, we will exclude the duration of any delays caused by force majeure events from the conditions.

If any pre-operational force majeure application by a licensee is unsuccessful, the cap and floor levels will continue to be based upon the assessed expenditure over a 25-year period and the expected target connection date. This means that if a project is operational later than 1 January 2021 (Window 1) and 1 January 2024 (Window 2), the

regime duration is reduced but the cap and floor levels are the same as they would be otherwise.

Further to this, in 2021 we consulted on our proposed approach to providing a means for cap and floor interconnectors that have encountered delays caused by force majeure events during the pre-operational period to request a later regime start date.

Detail on the process interconnectors should follow is set out in our June 2021 decision on force majeure mechanism: Cap and floor interconnectors: Decision on pre-operational force majeure arrangements.

CION agreement and supply chain plans

Where developers did not include a CION in their IPA submission, they had to provide this to us as soon as possible thereafter (i.e. developers needed to provide us their CION as soon as it is agreed with NGET/NGESO, as opposed to waiting until their FPA submission).

Project-specific conditions

In addition to the general Window 1 and Window 2 conditions, some projects are set specific conditions based on their individual circumstances.

The Greenlink IPA decision in particular was contingent on some conditions specific to the project, details of these were outlined in our September 2015 Decision on the Initial Project Assessment of the Greenlink interconnector. These were intended to reflect assumptions that our updated analysis for the Greenlink project was particularly sensitive to, as set out in the update to the consultation.

If we consider that IPA conditions have not been met or are likely not to be met, we will notify the project developer. If so, we will also consider the most appropriate approach to assessing the needs case for that project. The approach used may vary per project depending on the conditions that have not been met, the project specific circumstances, and the broader policy environment at the time.

When reassessing projects that have not met their IPA conditions, we will focus on aspects of the needs case that are most likely to be impacted. This may include an internal reassessment of any of the aspects of the needs case considered at IPA stage, or any other evidence that might be relevant to the project.

We recognise the impact that a needs case reassessment might have on the project developer, its partners and financiers. We will try to undertake the process in a timely manner and remain transparent with the project developer throughout, however,

progress is also dependent on the level of engagement from the developer and the sufficiency of information provided to us.

Window 3 conditions

Our decision to award a cap and floor regime in principle in Window 3 is subject the following conditions (the 'IPA conditions'), set out in the Decision on the Initial Project Assessment of the Third Cap and Floor Window for Electricity Interconnectors:

a) **Operations prior to the end of 2032:** If there is a change in circumstances before the FPA decision that means it is no longer feasible for a project to become operational by the end of 2032, we may choose to conduct an IPA review of the project. This would involve Ofgem undertaking a reassessment of the IPA in order to confirm whether or not the project continues to be in consumers' interests and should continue to hold a cap and floor regime in principle. Following an IPA review, Ofgem may decide to allow the project to retain in principle its cap and floor regime or may decide to revoke the regime.

b) **Material Change:** If any information given to us before FPA decision leads us to consider that the project no longer meets the basis upon which it was granted in principle a cap and floor regime, then we may choose to conduct an IPA review of the project. This information includes changes to project parameters such as timelines, connection date, project configuration, commercial arrangements, regulatory support or grid connection in the connecting country, and costs. The developer must give Ofgem formal written notice of any material changes to the project. The developer must explain the rationale for the change and the implications on project cost and delivery.

c) The developer must submit detailed information on costs for our FPA to start within three years of an IPA decision. This information will need to be informed by detailed discussions with the supply chain and tender returns.

d) The developer must also submit quarterly written reports on progress against a number of key development milestones, including (but not limited to) development work, consenting and permitting, procurement, financing, operational management plans and costs, project management and other factors that had an impact on the IPA assessment under which the project was granted a cap and floor regime.

e) The developer must confirm the timing of FPA submission in writing to Ofgem at least two months before the expected submission date

Regime start and end date (Window 3)

We introduced a modified approach to the Regime Start Date (RSD). This modified RSD replaces the Connection Date term introduced in our Application Guidance for Window 3. The RSD is the date by which the project commercially operates by flowing electricity and offering capacity for sale to the market. The RSD approved at the IPA stage may, subject to Authority approval, be subsequently updated if necessary. The definition of the RSD is included in Standard Licence Condition (SLC) 26B. We envisage that the RSD will also be included as a defined term under the Special Conditions (SCs) of the interconnector licences held by the relevant interconnector entities (added by way of statutory modification, at the FPA stage). The SCs will contain the same definition of RSD (incorporate by refence) as set out in SLC 26B.

Depending on the reasons for the delay and whether an appropriate request was made through the Reasonable Delay Event mechanism or Pre-Operational Force Majeure mechanism, the Payback Mechanism for Delays and/or a needs case revisit may apply. If a developer submits a Reasonable Delay Event request or a Pre-Operational Force Majeure request to Ofgem and the request to update the RSD is approved by us under either of these two mechanisms, then the Payback Mechanism for Delays would not apply.

The Indicative RSD for Window 3 applicants is the end of 2028. The Indicative RSD is a default date for all applicants. Developers must indicate how their expected RSD compares to the indicative RSD and provide justification if they cannot meet it, particularly referencing typical interconnector project timelines. The chosen RSD will be carefully reviewed, and if justified, it will be confirmed to the developers that has been awarded with the cap and floor regime in principle, as the RSD-IPA.

Backstop date (Window 3)

Throughout project development, construction and until project delivery, the Backstop Date for all Window 3 projects is 31 December 2032. This will be the date by which the project must connect to the grid and must achieve its RSD. If a project's RSD is delayed beyond the Backstop Date, it may undergo a needs case reassessment and/or may be subject to the Payback Mechanism for Delays.

Payback mechanism for delays (Window 3)

The Payback Mechanism for Delays aims to protect consumers from the material impacts of undue delays to project delivery and thus connection delays. This mechanism is

designed to replace the penalty used in previous windows of reducing the cap and floor regime duration when undue delays had occurred.

The mechanism requires developers to repay consumers any received floor top-up payments, incurred during the Exposure Period.[21] Any repayment by developers of any cumulative outstanding balance of floor top-up payments to consumers under the Payback Mechanism for Delays would be in Net Present Value (NPV)-neutral terms and required in the Payback Period.[22]

If there are delays to the RSD, placing it beyond the Backstop Date, for which a pre-operational force majeure request is submitted and rejected after the FPA decision, the developer's interconnector would become subject to the Payback Mechanism for Delays. However, if a pre-operational force majeure request is submitted and approved after our FPA decision, neither the Payback Mechanism for Delays, nor a needs case revisit, would apply.

CION agreement and supply chain plans (Window 3)

In the Guidance on our Needs Case Assessment Framework from July 2022, we stated that in the IPA process, we would use the developer costs stated in each project's CION to understand the costs of connecting the project to the national transmission system and the associated reinforcement costs. Further information on the outcome of this can be found in the Window 3 IPA decision, Onshore costs chapter (in Section 3).

Timings between IPA and FPA (Window 3)

The developer must submit detailed information on costs for our FPA to start within three years of an IPA decision. This information will need to be informed by detailed discussions with the supply chain and tender returns. The developer must confirm the timing of FPA submission in writing to Ofgem at least two months before the expected submission date.

Force majeure (Window 3)

We have decided to modify the licence (SLC 26B) to update the pre-operational force majeure definition, by removing the exclusion of the event of "performance or non-performance by an electricity transmission licensee or equivalent entity". The implementation of the above modification is yet to take place.

[21] Exposure Period, as defined here.
[22] Payback Period, as defined here.

3.2 Regime variations application

As we have noted in Section 1.6, developers will have the option to choose whether their project will be regulated under the standard mechanisms of the default regime or under the mechanisms approved in our May 2020 decision. We will maintain the current regime variations process for specific changes to the regime that are not included as default options.

Developers may request variations to the default regime at the IPA or FPA to accommodate different types of efficient financing solutions. If developers request variations at the IPA stage, they must clearly state whether their submission is conditional on the proposed variations being approved.

Developers can decide the specific timing of submission based on their project-specific circumstances. However, developers should bear in mind that the timelines of our processes (e.g. timing and duration of the FPA) will have to be adhered to. This means developers should ensure that requests for variations are submitted to the Authority in a timely manner and are closely aligned with the current cap and floor regime processes. In particular, where relevant, developers should allow sufficient time for Ofgem to assess and consult on regime changes and, where appropriate, for developers to run a funding competition to allow the cap and floor to be set as part of our final FPA decision.

After IPA, our preference is for developers to request regime variations when they have all the necessary information that will enable us to assess their request properly and in a timely manner.

Any request must:

- explain in detail what they are proposing and provide all useful evidence
- include financial modelling of the regime design with and without the change to show impacts of any change on consumers; and
- justify why the change is in consumers' interests.

Developers should engage with us at least three months ahead of a formal request. Our December 2015 letter Enabling a range of financing solutions under the cap and floor regime sets out detailed requirements for developers interested in requesting regime variations.

3.2.1 Regime variations application assessment

If necessary, we will assess the impacts of proposed regime variations - this is an Impact Assessment carried out within the meaning of section 5A of the Utilities Act 2000. Our

assessment focuses on consumer impacts of making variations to the default regime that developers have requested.

Our first assessment is a draft Impact Assessment, which we would normally publish alongside our consultation on the regime variations request. Our next assessment updates the draft Impact Assessment to consider consultation responses from stakeholders. This updated (final) Impact Assessment is published alongside our final decision setting out the regime variations we have approved, and any additional conditions attached to it.

The following are indicative timelines to enable developers to plan accordingly:

- Notify Ofgem three months ahead of making a formal variations request
- Allow six months for our assessment of request
- Allow another six months for consultation and decision.

Developers should review our October 2019 Consultation on proposed changes to our electricity interconnector cap and floor regime to enable project finance solutions, and May 2020 Decision on proposed changes to our electricity interconnector cap and floor regime to enable project finance solutions to see how we considered our first regime variations requests and how these variations were implemented through the Special Conditions to the relevant licences.

3.2.2 Regime variations implementation

Requesting regime variations is a developer-led process and the sequencing of our implementation decision may sometimes be driven by the process followed by each developer, as long as the process is efficient.

This would typically start with a statutory consultation to update the licensee's electricity interconnector licence and end with publication of the preliminary cap and floor levels that would apply for the project. More detail on the process is provided below:

- **Licence modification consultation and decision** – We conduct a statutory consultation on proposed changes to the electricity interconnector licences held by the licensee. These changes are required in order to implement the cap and floor regime and variations to the regime that apply to the interconnector.
- **FPA decision** – We consult and make a decision on FPA, setting out the efficient costs that will apply to the interconnector. Our past FPA decisions have followed contract awards (FID), as was preferred by the respective project developers, and have set out the preliminary cap and floor levels that apply for the projects. Our approach for interconnectors seeking regime variations is different, FID may

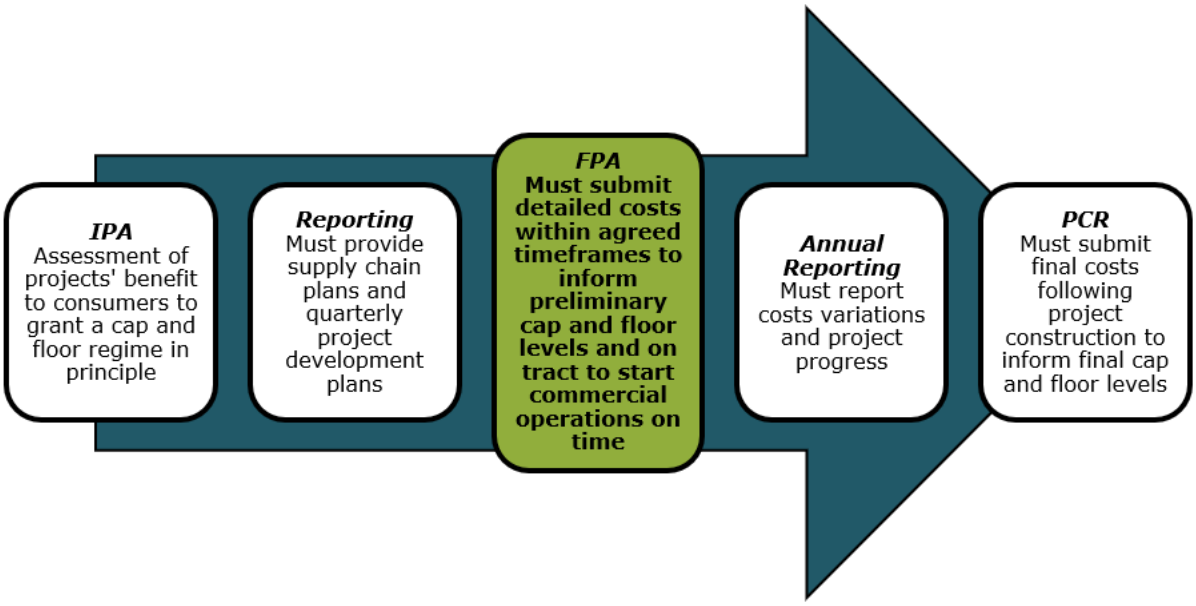
follow our FPA decision as this would give potential lenders a clear view on the project costs that GB consumers will support.

- **Financial Close** – We oversee a debt financing process undertaken by developers and concluded at financial close. We sign-off on the financial parameters agreed with lenders at financial close if we consider that the process was competitive and transparent. FID may follow financial close if it is still pending.
- **Publication of preliminary cap and floor levels** – We run the CFFM1 based on project costs approved at FPA and financial parameters determined at financial close. The CFFM1 generates two floor levels - the preliminary actual floor level which reflects actual values confirmed at financial close and the preliminary notional floor level which reflects notional values based on our default regime approach. We then publish the updated CFFM1 and a decision setting out the preliminary cap, actual floor, and notional floor levels to apply for the interconnector.

The preliminary cap and floor levels set following financial close are not final. They will be finalised following our PCR assessment to account for eligible changes in costs between the FPA stage and the PCR stage. Please refer to the PCR section for more detail on the scope of our PCR process.

3.3 Final Project Assessment (FPA)

Figure 7: Overview of our cap and floor assessment stages

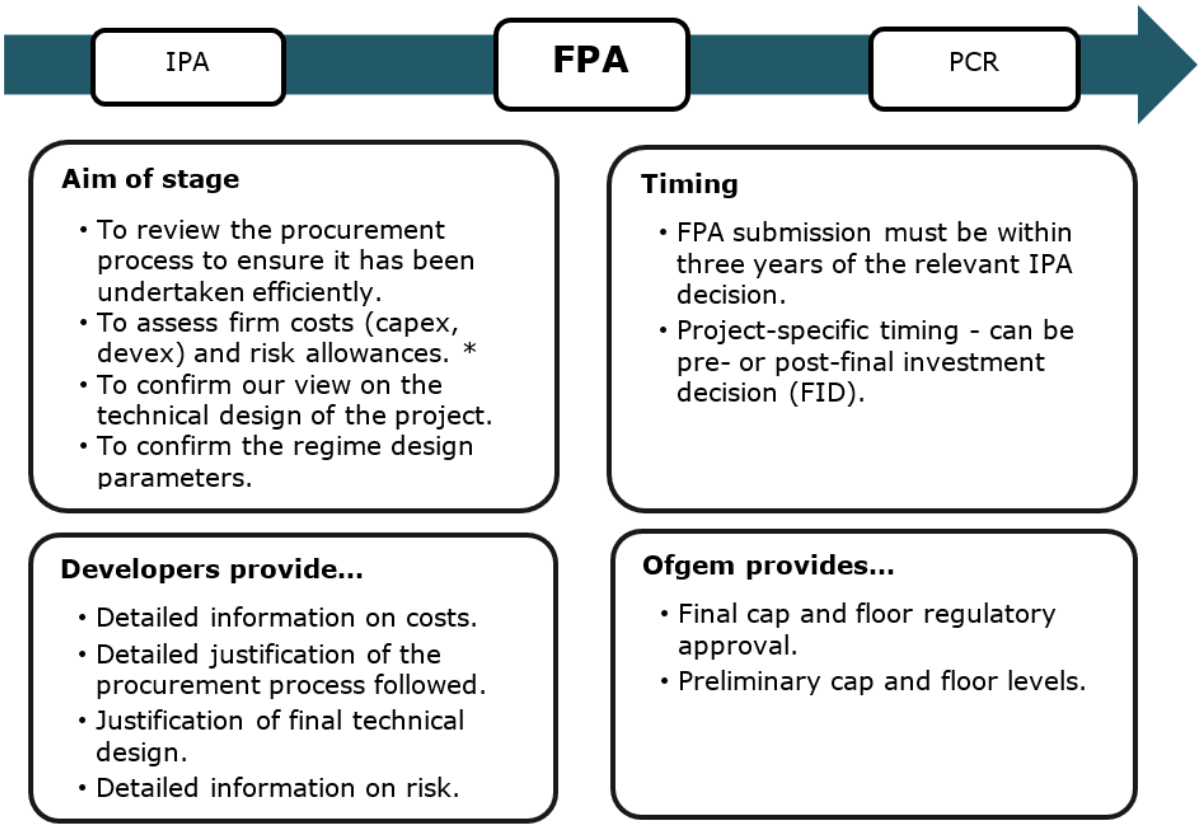


The FPA stage is when we confirm the grant of a cap and floor regime and set the preliminary cap and floor levels. The following key steps are necessary to complete this stage and specify regime parameters for a project:

- assessing the technical design of the project and reviewing the procurement process to ensure it has been undertaken efficiently
- assessing the economic and efficient costs associated with developing, constructing, operating, maintaining, and decommissioning of the licensee's interconnector and risk allowances
- setting the project's financial parameters and target availability incentive value
- developing a project-specific cap and floor financial model (CFFM), and
- adding to the Special Conditions of the licence (through a statutory consultation on licence changes) held by the licensee. This can happen in parallel with FPA process or soon thereafter.

The figure below provides an overview of key information to be aware of about the FPA stage.

Figure 8: Overview of FPA stage



* Developers may also request opex assessment at FPA stage on a project-specific basis.

3.3.1 Eligibility requirement

Developers should be meeting all the conditions set at their IPA decision in order to submit their FPA; any conditions not met could affect the project's eligibility to submit an FPA.

Developers must confirm the timing of FPA submission in writing to Ofgem at least two months before the expected submission date.

Developers are welcome to submit information for their FPA either before or after taking a final investment decision. However, this information must be sufficiently detailed for us to complete our FPA stage. We can work with developers prior to submission to ensure that the right information is included for the FPA stage, including factoring in any final contract prices as developers move through the procurement process.

3.3.2 FPA submission

The FPA submission should be well structured, and evidence based. The submission should provide a robust case for the costs and their drivers to be considered in the calculation of preliminary cap and floor levels.

Costs should be disaggregated as much as practically possible, in line with the cost template we provide. Ahead of FPA submission we will provide the project developer with an FPA guidance document which may include project-specific aspects as required. Ofgem usually expects the submission from the developer to be split into four parts (Table 7).

Table 7: FPA submission sections

1	**Project narrative:** This explains the structure of the submission, summarises the project costs and tender process at a high level and provides a general overview of the project. The narrative should include but not be limited to: a) A technical summary of the interconnector, explaining the scope of the project. b) The legal form of the ownership and operational vehicle. c) Information on whether contracts are procured on a joint or individual basis, and information on which the cost submission will be based (e.g. joint EPC for the whole project). d) Summary of the tender process, the selection criteria for bidders and costs of each project element expected to be achieved based on tender returns. e) A comparison of expected project costs at IPA and FPA stages. This should include an explanation of any significant cost deviation from the IPA cost submission. f) Information on where project revenues will be received, in which currencies and on what basis. g) Information on the currency that the project and company accounts will be denominated in. h) Details of any Parent Company Guarantees or Letters of Credit. i) Details of land ownership. j) Each area should be indexed to the supporting documentation. Where information provided in the FPA submission deviates from the information submitted as part of the IPA, it should be clearly flagged along with a justification for this deviation.
2	**Cost Assessment Template:** A completed version of the Ofgem cost assessment template spreadsheet. This should include, as a minimum: a) A summary tab of the entire/total project costs, including development, operational and decommissioning expenditure. b) Separate tabs/sheets with further cost disaggregation (e.g. subsea cable, converters, risks etc.). c) References to any supporting tender/contract terms and quotes, studies, reports or other relevant documents that provide the evidence base should be clearly referenced within the cost assessment template. d) Information on the nature of each cost (i.e. whether the cost is fixed, fixed subject to movement, hedged, variable, etc.)

	e) The costs should be indexed to support the spreadsheets (or tabs in the same spreadsheet), showing the calculations. The costs should be submitted in nominal terms, but developers should check with us to confirm that this is still our view. f) The calculations should use the key assumptions (e.g. forex rates, inflation etc.) specified in the cost template by Ofgem. Where additional assumptions are being made outside the ones specified by Ofgem, those should be clearly set out in the cost template in the comment's column. g) Furthermore, the supporting source data from the contractor/ bidders should be provided to Ofgem in their original native format.
3	**Project Risk Management Strategy and Risk Register:** This should cover the following: a) The overall project management strategy, including hours worked/to be worked and rates used. b) The risk management strategy, including an overall view of the risk analysis process (i.e., Risk Identification, Assessment, Reponses Development and Ownership). c) Policies for managing hedging (e.g., forex) and cost overruns or delays and a copy of project Risk Register provided in excel format.
4	**Supporting Documentation**: Detailed information regarding the procurement process and project costs should be provided in this section. The information should justify the cost drivers of each project element. Explanations should be provided in areas that might drive costs away from industry standards. This should include, but not be limited to, the following: a) All the tender information that has been shared publicly during the tender rounds. The information should present how many bids were received, on what terms and prices. b) In addition, the following tendering information should be provided: - Project specifications (what was tendered). - Original ITT issued. We may ask for full copies or parts of the tenders returned. c) An outline of award criteria, and standardised and quantified comparison of all the bids. Clear, estimated value ranges must be presented for 'difficult to quantify' selection criteria. All the assumptions used, especially for valuing risk related items should be clearly set out. d) A summary table of the entire bidding process to show the chronological sequence of events and actions, including dates, actions taken or comments by the contractor and actions taken or comments by the developer. This should also include information where bidders dropped out or were disqualified from the process and rationale for any such actions by the developer. e) An explanation of the next steps regarding the procurement process, including any actions yet to be taken by bidders(s) and the developer(s). f) Related party margins, if applicable. g) Cost allocations and the methodology used, if applicable. h) A document register including the: - Scope/technical drawings.

- Design and engineering studies.
- Site surveys and evidence of these being passed to relevant contractors/bidders (e.g. environmental, geotechnical condition, UXO etc.).
- Technical equipment testing reports.
- Route and site selection reports.
- Any relevant consultant reports.

The register should cover document title, date produced, suppliers' names, and a brief description of the report objective (for any supporting third-party reports). Ofgem does not require the original documents listed in the register as this stage. However, we may require specific documents from the register if those documents are deemed necessary to support the FPA exercise.

FPA submission checklist

The main aim of the checklist below is to assist developers with the documentation submission. Detailed description of each item is provided in the above sections of the guideline.

FPA submission checklist, listing document type and content:

1. Project narrative
    - Technical summary
    - Legal form of the ownership
    - Contracts Structure
    - Summary of the tender process
    - Project Revenues
    - Currency of company accounts
    - Parent Company Guarantees or Letters of Credit
    - Land ownership
2. Ofgem cost assessment template spreadsheets
    - Summary tab of the entire project costs
    - Cost disaggregation tabs for each bidder
    - Nature of each cost (fixed. Etc.)
    - References Column
3. Project and Risk Management
    - Project management details
    - Risk Management Strategy
    - Policies for managing hedging
    - Policies for managing cost overruns & delays
    - Risk Register
4. Supporting documentation

- All the tender information
- Related Party margins
- Cost allocations and the methodology
- Documents Register

Cost Assessment Guidance

Ofgem provides templates that will capture the cost information required. Each cost item in the template should have a corresponding indicator showing the level of certainty in the estimate (input into the first blank column alongside the data, for each cost item).

Table 8: Cost classifications

	Classification	Description	Supporting Documentation
1	Fixed	The cost would not be subject to change and will have supporting documentation matching the amount.	Supporting evidence where costs have already been incurred / Tender documentation
2	Agreed, but re-measurable	The cost has been agreed or estimated but is subject to change in case of unexpected changes to the scope of works.	Tender documentation
3	Agreed, but will be re-measured based on known future information received	The cost has been agreed or estimated but will be subject to change due to clarifying the scope of works or due to additional surveys and assessments being undertaken at the moment.	Tender documentation
4	Estimated	Cost estimated based on assessments, actual surveys, using experience, and examples from other projects.	Spreadsheet with the calculations. Emails/minutes of meetings with specific mention of the variables that have been used in calculating these estimates, the person and company providing the calculations and information. List of surveys done as well as documentation of the surveys.
5	Early estimate	Costs estimated through modelling cost ranges from	Spreadsheet with the calculations. Emails/minutes of meetings with specific mention

		different projects and experience.	of the variables that have been used in calculating these estimates, the person and company providing the calculations and information. List of surveys to be performed to increase the confidence of the cost estimates.

Although we have set out guidance on FPA submission above, developers should discuss their submission with Ofgem in advance. We would normally then also issue specific and detailed FPA guidance to the developers.

3.3.3 Project assessment at FPA

The typical FPA assessment process structure is set out below. In some instances, developers may request a different structure, such as a phased approach to the FPA, where required to enable a specific financing approach for example. We will consider such requests on a case-by-case basis.

1. **Initial review** - an initial review of the FPA submission by Ofgem to ensure the necessary information has been provided. We expect this process to take two weeks (subject to the quality and completeness of the information submitted).
2. **Supplementary questions** – this involves multiple rounds of supplementary questions (SQs) between the developer and Ofgem. The purpose of the SQs process is to capture any clarifications sought by Ofgem on project specific issues and to ensure we have a clear and complete basis for our assessment. We require active and timely engagement with the developer during the SQs, failure to do so may delay the FPA process.
3. **Full information review** - a full review of FPA information by Ofgem to determine efficient cost allowances and this will be used to inform the provisional cap and floor levels. Ofgem may use technical consultants to support its analysis; in such an event, we would expect the developer to co-operate fully with any consultants to help us arrive at our view of efficient costs. In such cases we would expect to share the developer's FPA submission information with our consultants as necessary. The developer should clearly flag any issues or concerns with this approach as part of the FPA submission.
4. **Developer engagement** - meeting(s) between the developer and Ofgem will be held to discuss Ofgem's initial view on cost allowances. The objective is to provide visibility to the developer and to discuss any concerns (from either side) prior to

the public consultation stage. We aim to provide a summary of Ofgem's initial view of the cap and floor levels prior to any such meeting(s).

5. **Public consultation process** - Ofgem's FPA, including our views on efficient cost allowances for the interconnector and resulting provisional cap and floor levels may be subject to public consultation. Ofgem would expect to consult on the FPA for four weeks, if required. During our FPA stage we only consult if there are significant changes from the information we published at the IPA stage: Update on the Final Project Assessment stage for Window 1 interconnectors. In situations where there are no significant changes, our default approach will be to engage bilaterally with the relevant project developers during our FPA assessment, and then to publish our FPA decision without a public consultation. We would still expect to consult for four weeks in situations where:
    a) project costs have materially increased
    b) we think the expected impacts of the project have changed significantly since our IPA decision
    c) the project has requested variations to the default regime design that we are minded to approve
    d) the project does not meet the conditions that were attached to our IPA decisions, or
    e) the project has otherwise changed significantly.
6. **FPA decision** - our IPA for the interconnector granted the project a cap and floor in principle, subject to certain conditions. At the FPA decision stage, we confirm a cap and floor grant and set provisional cap and floor levels for the project. Where an alternative approach to the FPA has been agreed with the developer we may issue an FPA decision that confirms the cap and floor regime and a provisional view of efficient costs but delay the publishing of preliminary cap and floor levels until project financing has concluded, in order to take key financial parameters into consideration.

After the FPA decision, we update the Special Conditions of the interconnector's licence (usually around 6-9 months after) to reflect the provisional cap and floor levels. This timeframe can be discussed with developers as some projects may want the special conditions updated sooner than 6-9 months after the FPA decision.

In the absence of firm operational (opex), decommissioning expenditure (decommex) and replacement (repex) costs at the FPA stage, Ofgem may conduct a further thorough assessment of these items at the PCR stage.

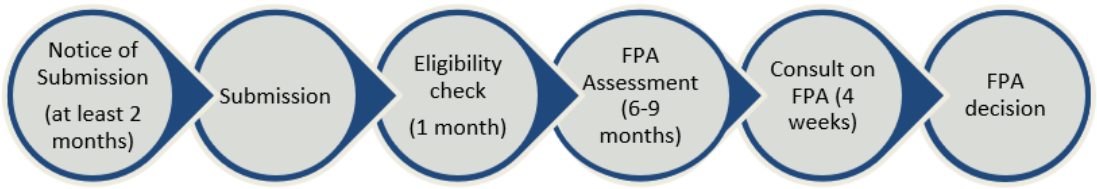
Following the FPA, Special Conditions that implement the cap and floor regime will be inserted into the licence for the licensee. This process is set out in Section 2.1 of this handbook.

3.3.4 FPA timelines

Please note the following timelines:

- Developers must confirm the timing of FPA submission in writing to Ofgem at least two months before the expected submission date.
- Developers should submit sufficient information for our FPA assessment to begin, three years after successful IPA stage.
- We would expect an FPA assessment to take around 6-9 months. This can vary depending on the project and the steps of the FPA progress. For example, this can be extended should the supplementary question stage take longer.

Figure 9: An indicative timeline for the FPA stage



3.3.5 FPA conditions

Following the FPA, projects will be required to submit annual reports during the construction phase, including cost variations from those set at the FPA. Projects will be required to submit detailed financial information and explanations of any changes annually. Projects will need to maintain high quality financial records, according to the requirements set out by Ofgem, in our Updated Cap and Floor Regulatory Instructions and Guidance.

The following broad principles will apply during our assessment:

- Developers' costs will be subject to the same scope and level of assessment regardless of when they take the decision to invest.
- Where developers take a decision to invest prior to the FPA, and commit to certain contracts and levels of expenditure, there is no guarantee from Ofgem that this expenditure will be deemed efficient and will be reflected in the cap and floor levels.
- In order for Ofgem to undertake a FPA prior to the developer's investment decision, developers will need to provide reasonably certain tender returns (as a

minimum), including proof of negotiations and preferred bidder selection (and criteria). We aim to give as much clarity as possible to inform developers' investment decisions. We may also require a post-FID adjustment to the cap and floor levels to ensure that any efficiently incurred variations to the contract prices following tender returns are captured in the cap and floor levels.

The order of the FPA process may differ slightly depending on whether the FPA takes place pre- or post-FID. However, the principles and the areas of assessment will remain the same.

3.3.6 Interaction with the regime variation process

Any potential request for regime variations must respect the timelines of general regulatory process set out by Ofgem. This means that requests for regime variations must come in with sufficient time for Ofgem to assess them and consult on them. The regime variations consultation could happen ahead of or in parallel with the FPA consultation.

We will not take our FPA decision without finalising the methodology for calculating the cap and floor levels first.

3.3.7 Cost elements determined at FPA versus those determined at PCR

The costs determined at FPA are often planned costs, and there is a possibility these costs may change. The PCR is an assessment of actual costs, and these are the final costs taken into consideration for setting the cap and floor for a project.

We set out below our key policy positions on the default FPA and PCR processes:

- Only costs considered uncertain (i.e., 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 changes in costs that meet eligibility requirements. 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 also assess aspects of our cost assessment that were not fixed at previous stages.

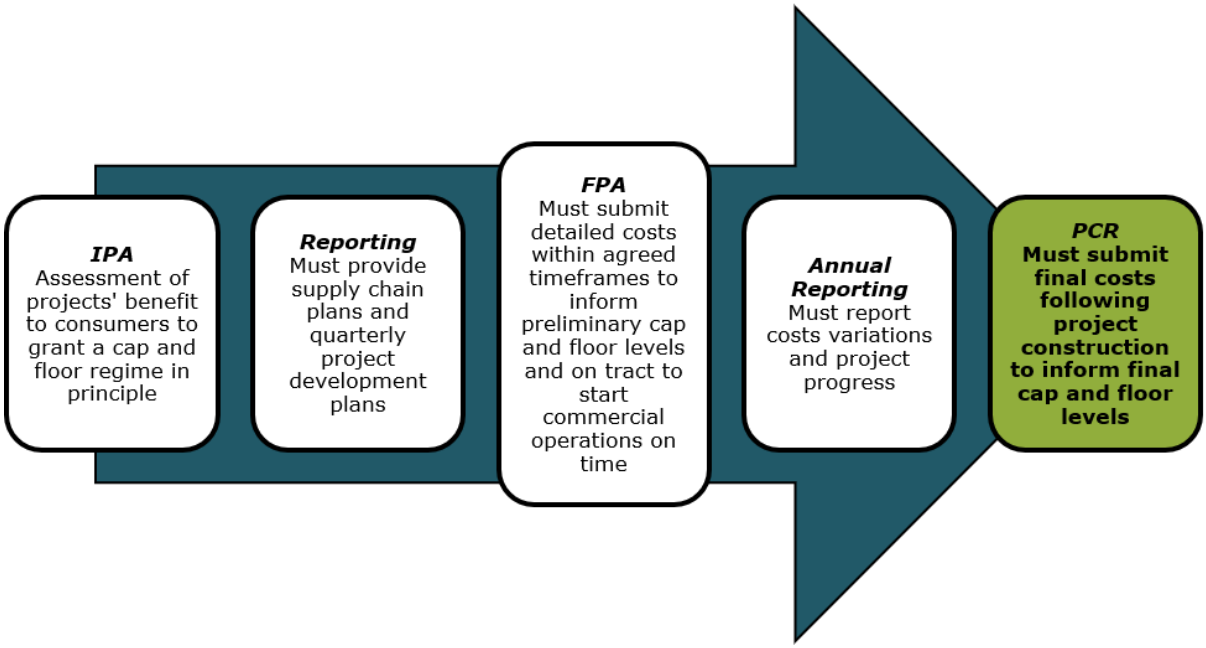
We can also confirm that developers would be able to provide additional supporting information prior to Ofgem's PCR decision if material new information arises.

For project financed interconnectors, if they elected the market-based approach, we set the actual cost of debt (ACOD) floor at Financial Close, based on the final lending terms agreed at Financial Close. This includes standby facilities and contingencies. We are using the project's Project Finance Model (PFM) to provide the inputs to our Cap and Floor Financial Model 1 (CFFM1), which will subsequently set the ACOD floor level to match the value identified in the PFM in accordance with Ofgem's CFFM Handbook. We do not revisit this ACOD floor level as part of our ongoing FPA process, which will only affect the setting of the notional floor level.

We revisit the ACOD floor level at our PCR stage, where we assess the final project costs once the project has been built. We only adjust the ACOD floor to reflect any senior debt, lending facilities or contingencies that have not been drawn down, or that have not been spent. This means the ACOD floor may be adjusted at PCR, but only downwards, and only to reflect undrawn or unused senior debt, lending facilities and contingencies resulting from lower total costs.

3.4 Post Construction Review (PCR)

Figure 10: Overview of our cap and floor assessment stages



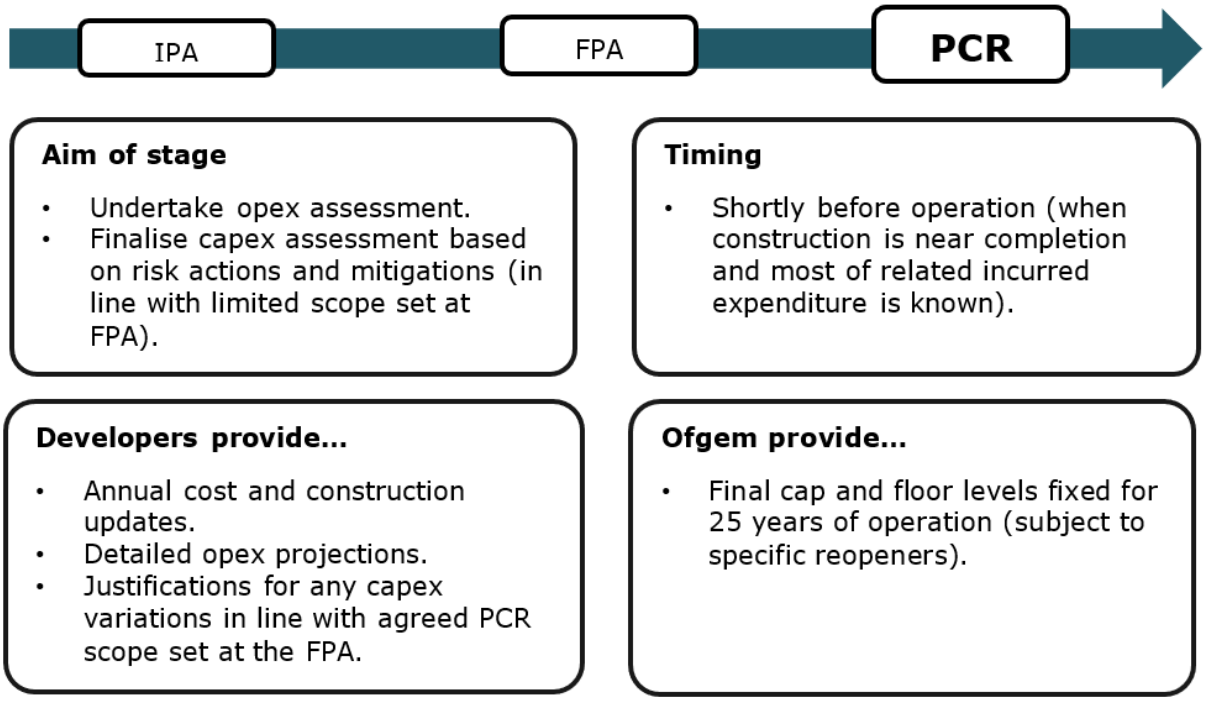
The PCR is the final stage of our cap and floor assessment framework. The primary aim of the PCR is to set the final cap and floor levels for the interconnector.

In order to confirm the cap and floor levels at the PCR stage, we revisit aspects of our cost assessment that were not fixed at the FPA stage and assess the efficiency of certain costs incurred during construction. We conduct a review of the final capital costs (capex) and consider the efficiency of the interconnector's operational costs (opex). We will also re-examine any information or aspects of the initial submission that have changed significantly.

The FPA determines our initial view of the economic and efficient costs to feed into the cap and floor levels. For many reasons the outturn costs may be different to those assessed at the FPA stage. The PCR will adjust the preliminary cap and floor levels (set at FPA) for costs that we deem to be eligible and efficient.

The PCR updates the preliminary cap and floor levels and sets the final cap and floor values for the project. These final cap and floor levels then remain fixed for the duration of the interconnector's cap and floor regime (subject to a discretionary opex reopener).

Figure 11: Overview of PCR stage



3.4.1 Eligibility requirement

The timing of the PCR is set out in the Special Conditions of the licence. This is generally the earlier of the point at which 85-95% of costs have been committed (excluding IDC) or the project's Full Commissioning Date. Where the licence allows, the developer may request an earlier or later PCR submission date; such a request must include supporting evidence justifying the request.

3.4.2 PCR submission

We expect the PCR submission to be evidence-based and provide a robust case for the assumptions made by licensees to produce the cost estimates.

Developers should engage with us to agree on the best way to submit the relevant information. One way we accept is uploaded to a document platform, where we will be able to view and download all documents.

The submission should be presented in four parts:

a) Project narrative
b) Cost assessment template
c) Risk management strategy and risk register
d) Supporting documentation.

More detail is provided in the table below:

Table 9: PCR submission sections

	Project narrative (in Word and PDF Formats) The purpose of the narrative is to explain the structure of the submission, summarise the project costs at a high level and provide a general overview of the project. The narrative should include but not be limited to: a) A technical summary of the project. b) The legal form of the ownership and operational vehicle. c) A comparison of project costs at the previous assessment and PCR stages (devex, capex and opex). This should include an explanation of any significant cost deviations from the initial cost submission. d) Proposed values for the Post Construction Adjustment (PCA) terms in the form of a CFFM1 (the Post Construction Adjustment at Cap term (PCAC) and the Post Construction Adjustment at Floor term (PCAF)). e) Summary of the tender process, the selection criteria for bidders and costs of each project element based on tender returns. f) The final capex costs. g) The opex cost estimates. h) A comparison between the project's estimates of the operational costs and other comparable operational interconnectors. This will enable Ofgem to consider the costs and their drivers in the calculation of final cap and floor levels. i) Information on where project revenues will be received, in which currencies and on what basis. j) Details of any Parent Company Guarantees or Letters of Credit. Each area should be indexed to the supporting documentation. Where information provided in the initial submission deviates from the information submitted as part of the PCR, it should be clearly flagged along with a justification for this deviation.
	Cost Assessment Template (In Excel Format) A completed version of the Ofgem cost assessment template spreadsheet. This should include, as a minimum: a) A summary tab of the total project costs, including development, operational and decommissioning expenditure. b) An updated spend profile covering all of the project costs. c) Separate tabs/sheets with a cost disaggregation for each asset type (e.g. subsea cable, converters, operational costs etc.). d) References to any supporting tender/contract terms and quotes, studies, reports or other relevant documents that provide the evidence base for the costs. e) Information on the nature of each cost (i.e. whether the cost is fixed, fixed subject to movement, hedged, variable, etc.). f) The costs should be indexed to support the spreadsheets (or tabs in the same spreadsheet), showing the calculations.

	• The incurred costs should be submitted in nominal terms. The opex estimate should be submitted in relevant year real prices, which should be clearly outlined. g) The template should state the key assumptions (e.g. forex rates, inflation etc.) used by the developer. Where additional assumptions are being made outside the ones agreed with Ofgem, those should be clearly set out in the cost template in the Comments column. h) The supporting source data should be provided to Ofgem in their original native format.
	Eligible Risk related expenditure Full details of any eligible risk related expenditure, to be considered in line with the risk eligibility review process set out in appendix 2 of our cost assessment guidance
	Supporting Documentation The purpose of this section is to provide detailed information regarding the procurement process and project costs. The information should justify the cost drivers of each project element. Explanations should be provided in areas that might drive costs away from industry standards. This should include, but not be limited to, the following: a) Key additional tender information not provided at FPA, that has been shared publicly during the tender rounds. The information should present how many bids were received, on what terms and prices. In addition, the following tendering information should be provided: • An outline of award criteria and standardised and quantified comparison of all the bids. Clear, estimated value ranges have to be presented for 'difficult to quantify' selection criteria. All the assumptions used, especially for valuing risk-related items should be clearly set out. • A summary table of the entire bidding process to show the chronological sequence of events and actions, including dates, actions taken or comments by the contractor and actions taken or comments by the developer. This should also include information where bidders dropped out or were disqualified from the process and rationale for any such actions by the developer. b) Related party margins, if applicable. c) The backing Excel sheets that were used to populate the cost template. d) Cost allocations and the methodology used, if applicable.

PCR costs submission guidance

Costs should be disaggregated as much as practically possible, in line with the cost template provided by Ofgem.

PCR costs submission from the developer must:

- Include significantly firmer devex and capex than the initial cost submissions and the RIGs, considering that the majority of the construction work is now complete, and the majority of risks are retired or materialised.
- Flag any significant deviations from the initial cost submissions and the RIGs.
- Flag any additional changes, which are not related to cost, that may affect the initial assessment undertaken by Ofgem, such as the technical specifications of the project.
- Highlight any outstanding capex cost items that might be incurred ahead of operation (if not already operational) and beyond operation.
- Provide detailed submission of opex, repex and decommex if these were not submitted at FPA stage. These costs may be supported by benchmarks from other existing operating interconnectors where appropriate.
- Provide cost information in the price base used for the cap and floor levels or as agreed with Ofgem.

We may choose to conduct a forensic analysis of updated costs, or any eligible cost variations, to ensure the traceability and substantiation of the cost submission. This analysis can be used to help establish the final PCR values for the project, including any adjustments to values stated during the RIGs.

The submission should contain:

a) Significantly firmer development and capital costs of the project
b) Contracted prices and/or realistic and well-evidenced estimates of the operational and maintenance costs of the project
c) The replacement costs of the project
d) The decommissioning plans of the project.

Additional miscellaneous requirements are the following:

- All calculations should be submitted in Excel format (not PDF).
- Documents or reports should be submitted in Word or PDF document formats.
- The narrative should be submitted in both PDF and Word formats.
- File/folder names should not contain any of the following characters in the title:
- % ~ & \ # / : * ? " < > | { }.
- The folder structure of the submission should contain no more than three layers of sub-folders (indexation should be used for navigation purposes).

Once we have determined our view on efficient capex and opex, the cap and floor levels will be calculated by applying these cost allowances to the Ofgem cap and floor financial model (CFFM).

Ofgem will provide a template that will capture the cost information required. Each cost item in the template should have a corresponding indicator showing the level of certainty in the estimate (input into the first blank column alongside the data, for each cost item). The classifications are as follows:

Table 10: Cost classifications

	Classification*	Description	Supporting Documentation
1	Fixed	The cost would not be subject to change and will have supporting documentation matching the amount.	Supporting evidence where costs have already been incurred / Tender documentation
2	Agreed, but re-measurable	The cost has been agreed or estimated but is subject to change in case of unexpected changes to the scope of works.	Tender documentation
3	Agreed, but will be re-measured based on known future information received	The cost has been agreed or estimated but will be subject to change due to clarifying the scope of works or due to additional surveys and assessments being undertaken at the moment.	Tender documentation
4	Estimated	Cost estimated based on assessments, actual surveys, using experience, and examples from other projects.	Spreadsheet with the calculations. Emails/minutes of meetings with specific mention of the variables that have been used in calculating these estimates, the person and company providing the calculations and information. List of surveys done as well as documentation of the surveys.
5	Early estimate	Costs estimated through modelling cost ranges from different projects and experience.	Spreadsheet with the calculations. Emails/minutes of meetings with specific mention of the variables that have been used in calculating these estimates, the person and company providing the calculations and information. List of surveys to be performed to increase the confidence of the cost estimates.

* Generally, at PCR stage we would expect all capex costs to be firmed up, however we recognise that there can be movements still at this stage.

PCR submission checklist

The main aim of the checklist is to assist the developer with the documentation submission. Detailed description of each item is provided in the PCR submission guidance.

PCR submission checklist, listing document type and content:

1. Project narrative
    - Technical summary
    - Final capex and devex update
    - Opex estimate
    - Opex comparison
    - Project Revenues
2. Ofgem cost assessment template and spreadsheets
    - Summary tab of the entire project costs
    - Updated yearly cost profile
    - Cost disaggregation tabs for each bidder
    - Nature of each cost (fixed etc.)
    - References Column
    - Index cost and show calculations
    - Incurred costs in nominal terms
    - Opex estimates in real prices
    - State key assumptions
    - Provide source data in original format
3. Eligible risk-related expenditure
    - Full details of any risk-related expenditure and how it meets our eligibility principles
4. Supporting documentation
    - Cost allocations and the methodology
    - Developer-populated CFFM1

3.4.3 Project assessment at PCR

The PCR process structure is as follows:

1. **Initial review** - an initial review of the PCR submission by Ofgem to ensure the necessary information has been provided. In accordance with licence conditions, we will confirm completeness within 3 months.
2. **Supplementary questions** - SQs sent by Ofgem to licensee for the licensee to address. The purpose of the SQs process is to capture any clarifications sought by Ofgem on project specific issues and to ensure we have a clear and complete basis for our assessment. This is a key stage in the PCR process.
3. **Full information review** - a full review of information submitted will be carried out by Ofgem to determine efficient cost allowances and this will be used to inform the final cap and floor levels. We may use technical consultants to support our analysis; in such an event, we expect projects to co-operate fully with any consultants in order to help us arrive at our view of efficient costs.
4. **Developer engagement** - meeting(s) between developer and Ofgem (and if applicable, partnering NRA) will be held to discuss the initial view on cost allowances. The objective is to provide visibility to the developer and to discuss any concerns (from either side) prior to the public consultation stage. We will aim to provide a summary of the initial view of any key issues and in due course the cap and floor levels prior to any such meeting(s).
5. **Public consultation process** - our views on efficient cost allowances and resulting provisional cap and floor levels will be subject to public consultation. Ofgem would expect to consult on the PCR for a period of at least 28 days.
6. **PCR decision** - confirm the efficient cost allowances for the project and resulting final cap and floor levels that will apply to the project for the duration of its cap and floor regime (subject to any reopeners).

Cost Assessment at PCR Guidance

Our 2014 Decision on the cap and floor regime for the GB-Belgium interconnector project Nemo identifies key areas that will be subject to cost assessment at the PCR stage.

Below we define these areas and how we assess them at PCR.

The final capex costs - PCR devex and capex review covers:

- Confirming our final positions on the cost variations that we reviewed during the previous annual RIGs.
- Reviewing and confirming our final positions on the cost variations that may have occurred during the final year of construction.
- Forming a final position regarding the commissioning power and commissioning costs that do not form part of the EPC contracts.

- Establishing a sensible capped cost allowance for some minor construction activities that will be carried out after the PCR stage.
- Deciding if we should allow the inclusion of eligible risk costs within the PCR if these materialise within 3 months after the PCR submission.

The opex costs - we will carry out a detailed and comprehensive assessment of the operational costs where these were not assessed in detail at FPA stage. The key elements that we will cover in our assessment are the:

- Resource profiling and expenses
- Business services and general administration
- Location and cost of the management offices
- Trading systems
- Trading agreements
- Planned and unplanned maintenance
- Replacement costs (repex)
- Spares
- UK business rates
- Insurance
- Decommissioning plans

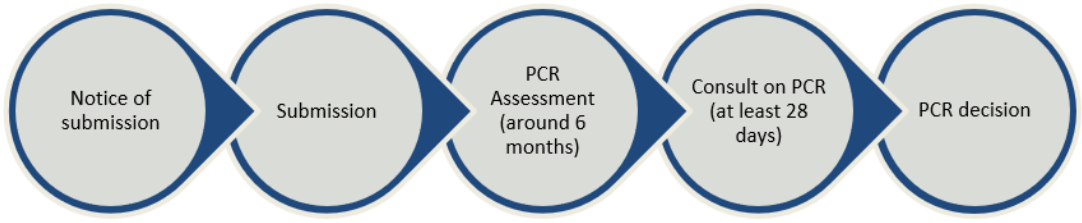
The above lists are not exhaustive, and we may need to examine other areas of the capex and opex costs during the assessment.

Once we have determined our view on appropriate capex and opex, the cap and floor levels will be calculated by applying these cost allowances to the Cap and Floor Financial Model 1 (CFFM1). The Cap and Floor Financial Model 2 (CFFM2) is used during the operational phase of the interconnector. The cap and floor levels used as an opening input into the CFFM2 are the closing output of the CFFM1.

Cost items in the project finance model - At PCR, we expect to assess cost items in the project finance model of projects using project finance solutions. We assess costs in accordance with the terms established at financial close. For example, we adjust total project costs to reflect any senior debt, lending facilities, or contingencies that have not been drawn down or spent. This ensures that any undrawn or unused senior debt, lending facilities, and contingencies are removed from the Preliminary Actual Floor Level set following financial close.

3.4.4 PCR timelines

Figure 12: An indicative timeline for the PCR stage



We intend to start the PCR process:

a) At the earlier of the following milestones:

   I. a date on which between 85% and 95% of development and capital expenditure, excluding IDC (and any snagging retention) has been committed to the development and construction of the interconnector, and

   II. The Full Commissioning Date

b) Such date as may be agreed in writing by us.

3.4.5 PCR process

Risks

If some risks materialise shortly after PCR submission, we may allow inclusion of these costs into the PCR up to a certain cut-off point. If applicable, this cut-off point will be specified as part of the PCR guidance that we will issue to a project as a part of the ongoing engagement between Ofgem and the relevant developer during PCR process. This will ensure that there is no unreasonable delay to the PCR process.

If the PCR process doesn't conclude within the first year of operation, we may choose to disallow any within-period revenue assessments until the PCR is completed and final cap and floor values are established.

Section 4: Assessment during operation

Section summary

This section explains the assessments that we carry out from the start of commercial operation and throughout the regime duration. These assessments focus on the following:

- 60-day test
- Comparing interconnector revenues against cap and floor levels
- Within Period Adjustment (WPA)
- End of Period Assessment (EPA)
- ICF Methodology development and maintenance
- Cap payments to consumers and floor payments to licensees, and
- Opex reassessment and decommissioning cost reassessment.

4.1 60-day test

The 60-day test for interconnectors is designed to demonstrate that the interconnector is capable of continuous operation at its rated capacity, ensuring its readiness for commercial use and safeguarding consumers from unproven assets. This test requires the interconnector to demonstrate 60 days of continuous operation, during which the interconnector must remain technically available at the rated capacity. Upon successful completion, the asset's operational capability is confirmed. The full commissioning date is then backdated to the start of this 60-day period.

The primary objective of this full commissioning test is to establish the start date for the application of floor payments, ensuring that the consumers do not bear any liability to underwrite the asset until the asset has been proven. If there are any interruptions during this proving period, the 60-day clock resets, unless the interruption is due to specific events or circumstances permitted under the licence, such as minor operational pauses, trial operation exceptional events, or allowed outages. In such cases, the clock is paused and resumes once the asset is again technically available at the rated capacity.

For instance, if there is a 10-day interruption due to a permitted event after 20 days of continuous operation, the 60-day clock pauses at day 20 and resumes after the interruption ends and the asset is again technically available at the rated capacity. In order to satisfy the 60-day test, the asset is required to remain technically available at the rated capacity for the remaining 40 days. The clock may be paused multiple times if there are further interruptions due to permitted events. On the other hand, if the interruption is caused by a non-permitted event, the clock stops at day 20 and resets to

zero, requiring the entire 60-day period to start anew once the interruption concludes. If the interconnector fails to complete the 60-day test it must address the identified issues and repeat the test. Special Condition 2 of the relevant interconnector's licence details these requirements.

4.2 Assessing interconnector revenues against cap and floor levels

Each cap and floor interconnector licensee must submit the relevant revenue information through the RIGs process each year. These revenues are then periodically assessed by Ofgem. This revenue assessment can take place every five years (default regime) or every year (where regime variations are approved). Further information on the RIGs process is available in Section 2.4 of this handbook.

The following determinations will then follow (where necessary):

- Adjusting the baseline level of controllable operating expenditure (opex) underpinning the cap and floor levels set at FPA and/or PCR (this adjustment is only available once and cannot occur until at least 10 years after the start of a licensee's cap and floor regime. It then becomes effective for the remainder of the regime)
- Adjusting the baseline level of decommissioning costs underpinning the cap and floor levels set at PCR stage
- Indexing the values of cap and floor levels set at FPA and the Post Construction Adjustment (PCA) terms we determined at PCR to account for inflation. We convert the real values into nominal values for the purpose of assessing actual revenue against these nominal values. PCA terms represent the difference between:
    (a) our estimate, assumed in the Preliminary Cap Level, Notional Floor and Actual Floor Levels, of the costs associated with developing, constructing, operating, maintaining and decommissioning of the licensee's Interconnector; and

    (b) our assessment, at the PCR stage, of the economic and efficient costs associated with developing, constructing, operating, maintaining and decommissioning of the licensee's Interconnector.
- Indexing any subsequent adjustments required to reflect changes to baseline levels of controllable opex and decommissioning costs to account for inflation
- Adjusting cap and floor levels depending on whether predetermined availability targets are met, and associated incentives apply (+/-2% incentive at the cap;

binary application of the floor, i.e. either full floor or no floor depending on whether minimum availability is achieved)

- Assessing actual revenue against cap and floor levels (including any adjustments required to reflect changes to baseline controllable opex and decommissioning costs, inflation indexation and availability incentives) on an NPV-neutral basis and at predetermined intervals (every five years, unless more frequent assessments are requested and approved through our variations process)
- Assessing actual non-controllable opex against the baseline level determined at PCR stage (non-controllable opex is excluded from the building blocks used in the CFFM1 to set cap and floor levels and treated separately from the other operational costs by applying a pass-through mechanism).

Finally, we determine whether, for the relevant assessment period, there is a revenue excess (above the cap) or shortfall (below the floor) and, therefore, whether any payments need to be made to or from GB consumers. We also determine the amount of any required payments and pass-through payments required to reconcile different levels of actual and baseline non-controllable opex.

More assessment in addition to the default assessments above may be carried out for interconnectors with regime variations provisions. These further assessments will focus on any additional conditions attached to the regime variations.

4.3 Within Period Adjustment (WPA)

Interconnectors under the default cap and floor regime can request financial adjustments before the end of the standard five-year assessment period. The Within Period Adjustment (WPA), as outlined in Special Condition 6 of the relevant interconnector's licence, addresses significant revenue deviations and ensures financial stability for the project. The Cap and Floor Financial Model 2 (CFFM2) is used to evaluate a WPA request. See section 5.2 below for further detail.

The cap and floor regime sets maximum and minimum revenue levels that interconnector licensees can earn. Revenues are typically assessed every five years (during the End of Period Assessment (EPA) discussed below at section 4.4), however, if developers foresee revenues significantly above the cap or below the floor before this period ends, they can request a WPA. This process involves a thorough review to ensure that the adjustment is justified and aligns with regulatory objectives. This review considers revenue forecasts, expenditure, and the circumstances prompting the request.

Once a complete request is received, we aim to deliver a decision within three months. The review process may be paused if additional information is requested and resumes

upon receipt of the required details. Licensees must submit comprehensive information in order for the review process to begin, including a CFFM2 and operational RIGs.

WPA requests must be submitted within a six-month window of the licensee's operational year-end (up to three months before or after). WPA requests may be submitted annually during the first four operational years. WPA requests may not be submitted during the fifth operational year to avoid conflicts with the standard five-year assessment (EPA). WPA does not apply to project-financed interconnectors, whose revenues are assessed annually.

National Grid IFA2 (NGIFA2) limited requested a WPA for the IFA2 interconnector covering partial assessment period of January 2021 to March 2022 wherein we accepted a downward adjustment of £28.2m to the Interconnector Revenue. NGIFA2 again requested WPA for the partial assessment period of April 2022 to March 2023. We accepted this request and a downward adjustment of £85.5m to the Interconnector Revenue was made.

Similarly, Nemo Link Limited requested a WPA with respect to the Nemo Link interconnector for the period of January 2022 to December 2022. A downward adjustment of £116.9m to the Interconnector Revenue was determined to be appropriate which was split equally between GB and Belgian consumers.

4.4 End of Period Assessment (EPA)

The EPA is the methodology by which the cap and floor assessment is undertaken as outlined in Special Condition 3 of the relevant interconnector's licence. For each relevant assessment period (5 consecutive years that starts from the RSD, or each year for projects with variations) the value of the Cap and Floor Revenue Adjustment term (CFA_{ap}) is calculated against the cumulative cap and floor level for that period to determine a Revenue Excess at Cap or a Revenue Shortfall at Floor.

The calculation methodology outlined in Special Condition 3 involves comparing the Assessed Revenue (AR) with cap and floor levels on a NPV- neutral basis. This also considers any WPAs to determine the End of Period Cap and Floor revenue Adjustment (CFA_{ap}).

Any revenue exceeding the cap is returned to System Operators (SOs) via the Transmission Network Use of System (TNUoS), benefitting network users by reducing network charges in the regulating countries involved. Conversely, if revenue falls below the floor, SOs top up the interconnector to ensure it meets the floor level.

Several important points govern the EPA process. Each assessment period is considered independently, with adjustments in one period not affecting future assessments. Total

revenue earned in one period does not influence future assessments either. Interconnectors falling below the cap due to WPA payback are topped up to the cap level. Forecasted accounts are not permitted, ensuring transparency and accuracy; generally, audited accounts are used.

This comprehensive approach ensures that Interconnector Revenue assessments are conducted fairly and accurately.

As Nemo Link began commercial operations on 31 January 2019, it reached the end of the first 5-year assessment period on 31 December 2023. Nemo link was therefore the first Cap and Floor interconnector to go through the EPA process, and its report was published in 2024.

4.5 ICF_t Methodology development and maintenance

The Interconnector Cap and Floor Revenue Adjustment (ICF_t) term provides for various adjustments (whether upwards or downwards) to the Interconnector Revenue as allowed in the relevant licence condition for the developer: Special Condition 10 (Calculation of adjustments to the licensee's Interconnector Revenue).

The main purpose of the methodology is to account for the time value of money, from the point that a cap/floor payment is determined as due, to the time that it is paid through the TNUoS cycle.

Each licensee is required to establish and maintain a methodology for calculating the value of ICF in a form approved by Ofgem. The detail of the requirement is set out in the same licence condition.

Licensees can start engaging with Ofgem on how to develop the ICF methodology as part of the licence modification process to add special conditions to their licences.

4.6 Cap payments to consumers and floor payments to licensees

The cap level represents the maximum amount of annual revenue that the interconnector is allowed to retain; the licensee must transfer revenue above this level to consumers via the process of TNUoS charges.

The floor level represents the minimum amount of annual revenue that the licensee is guaranteed to earn (provided it meets the 80% minimum availability requirement); consumers top-up revenue below this level for the licensee. This is also done via the TNUoS charges process. The interconnector is expected to have in place a process to manage any delays in payments due to the licensee or consumers.

4.7 Opex reassessment and decommissioning cost reassessment

Opex reassessment

The total opex for the regime duration period is determined at the PCR stage. It could also be determined at the FPA stage if the licensee requested this to be done and if sufficient early information is available.

The determined opex value then remains fixed for the regime duration with only one opportunity allowed, after a minimum of 10 years after the start of a licensee's cap and floor regime, for updating the value to reflect efficient opex.

The Opex Reassessment Adjustment process is set out in Special Condition 9 (Process for determining the value of the Opex Reassessment Adjustment terms). It provides for an adjustment (whether upwards or downwards) to the cap and floor levels.

The values are proposed by a licensee and determined by Ofgem in accordance with the process set out in the licence, and account for the difference between our:

(a) assessment at the PCR stage of the economic costs associated with operating and maintaining a licensee's interconnector; and
(b) reassessment, at the opex reassessment stage, of the economic and efficient costs associated with operating and maintaining a licensee's interconnector.

This reassessment may be conducted:

(a) **at a licensee's request** - in which case a licensee must submit a request to Ofgem setting out the proposed adjustment values together with all relevant and up-to-date cost information that Ofgem may require to complete its reassessment; or
(b) **when Ofgem considers it appropriate** - in which case we will specify the information a licensee is required to provide to allow us to complete our assessment.

Ofgem will review the information submitted by a licensee and send a written notification within three months confirming whether it has:

(a) received all the information required to allow it to make its determination; or
(b) not received all the information required and specify what further information is required.

Ofgem shall determine the adjustment value within a period of 12 months from the date we have received all the required information. This date will be confirmed by Ofgem.

Once determined, we will specify the values of the updated opex in a direction. The determined value will take effect from the date[23] stated in the direction, and then remains fixed for the remainder of a licensee's cap and floor regime.

Decommissioning cost reassessment

The licensee is responsible for decommissioning the interconnector as required by legislation. The decommissioning cost reflected in the cap and floor levels is based on our assessment, at the PCR stage, of the legislative requirements relating to the decommissioning of the interconnector and the economic and efficient costs associated with such requirements.

However, legislative requirements could change before the end of the cap and floor regime and could lead to extra or reduced decommissioning costs, which the developer would not have foreseen.

The licence provides for adjustments to the cap and floor levels (whether upwards or downwards) if a change in legislative requirements results in additional or reduced decommissioning costs agreed by Ofgem – under special condition 7 (Non-Controllable Costs).

Where a licensee considers, and can provide evidence to support extra decommissioning costs, the licensee may give written notice to Ofgem of such occurrence as soon as reasonably practicable (further specifications set out in special condition 7) and must include in that notice its proposed adjustment values. The licence sets out further details of what the notice must contain and the process to be followed.

Where a licensee incurs lower decommissioning costs than the allowance provided for in the cap and floor levels, the licensee is obligated to notify Ofgem of such occurrence and must include in that notice, its proposed adjustment values.

Ofgem will then direct and notify the licensee in writing whether:

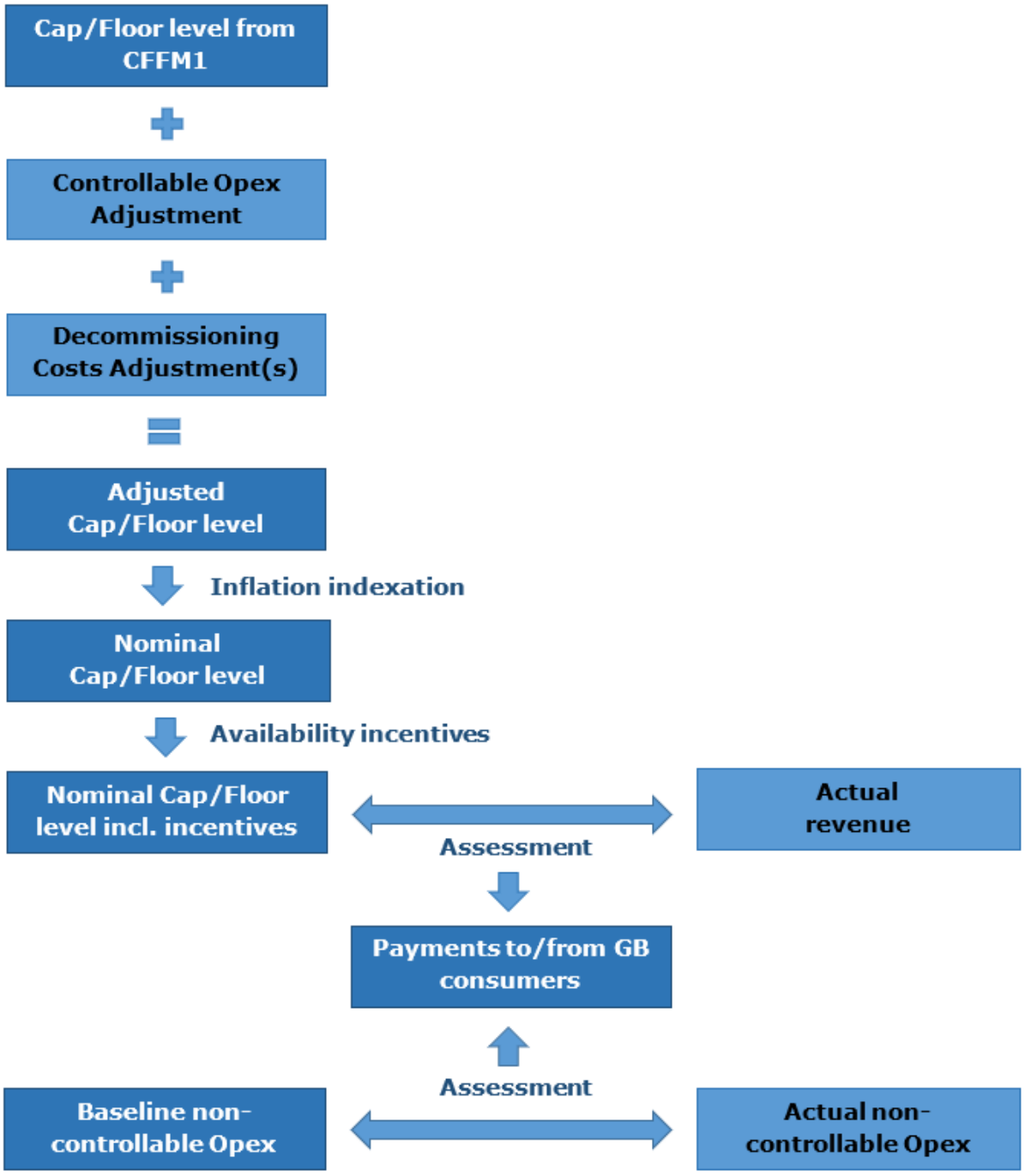
(a) there has been a relevant change in legislative requirements and whether any or all the costs specified in the licensee's notice were caused by the change in legislative requirements; and
(b) if so, the periods, if any, over which the adjustment values determined by Ofgem should apply.

[23] This effective date is the start of the next assessment year.

Should there be any further changes in legislative requirements concerning decommissioning after Ofgem's direction, a developer may give further notice to Ofgem as necessary and in accordance with the process described in the licence.

Figure 13 below sets out how we adjust cap and floor levels and assess revenues against the levels.

Figure 13: Adjustments to cap and floor levels to determine payment to or from consumers



4.8 Notifications to Ofgem

There are certain notification obligations on licensees during the operational period. Some of the key ones are provided below with details set out in the relevant interconnector licence conditions:

- Notification obligation in the event of an Interconnector Outage (more detail is set out in Part A of Special Condition 4 (Interconnector Availability Incentive)).
- Notification obligation on any source of Additional Revenue (more detail is set out in Part D of Special Condition 5 (Assessed Revenue)).
- Notification obligation in the event of an Income Adjusting Event (more detail is set out in Part D of Special Condition 7 (Non-Controllable Costs)).
- Notification obligation where the licensee considers, and can provide supporting evidence, that there will be a reduction or increase in costs and/or expenses in relation to the licensee's obligations with respect to decommissioning of the Licensee's Interconnector that have arisen due to a change in legislative requirements (more detail is set out in Part E of Special Condition 7 (Non-Controllable Costs)).
- Notification obligation if the licensee intends to submit a proposed value for the PCA terms (more detail is set out in Special Condition 8 (Process for determining the value of the Post Construction Adjustment terms)).
- Notification obligation to the GB System Operator of the ICF_t term (more detail is set out in Part C of Special Condition 10 (Calculation of adjustments to the Interconnector Revenue)).
- Notification obligation if the licensee becomes aware of any conflict between the provisions of the licensee's licence and CFFM1 (more detail is set out in Part A of Special Condition 11 (Licensee's Cap and Floor Financial Model Governance)).

Section 5: Cap and floor regime design

Section summary

This section explains our:

- Cap and floor regime design
- Cap and Floor Financial Models (CFFM)
- Interest During Construction (IDC).

5.1 Cap and floor regime design

Project-specific cap and floor levels are set based on efficient project costs using a RAV model. Figure 14 below sets out the high-level regime design:

Figure 14: High level regime design

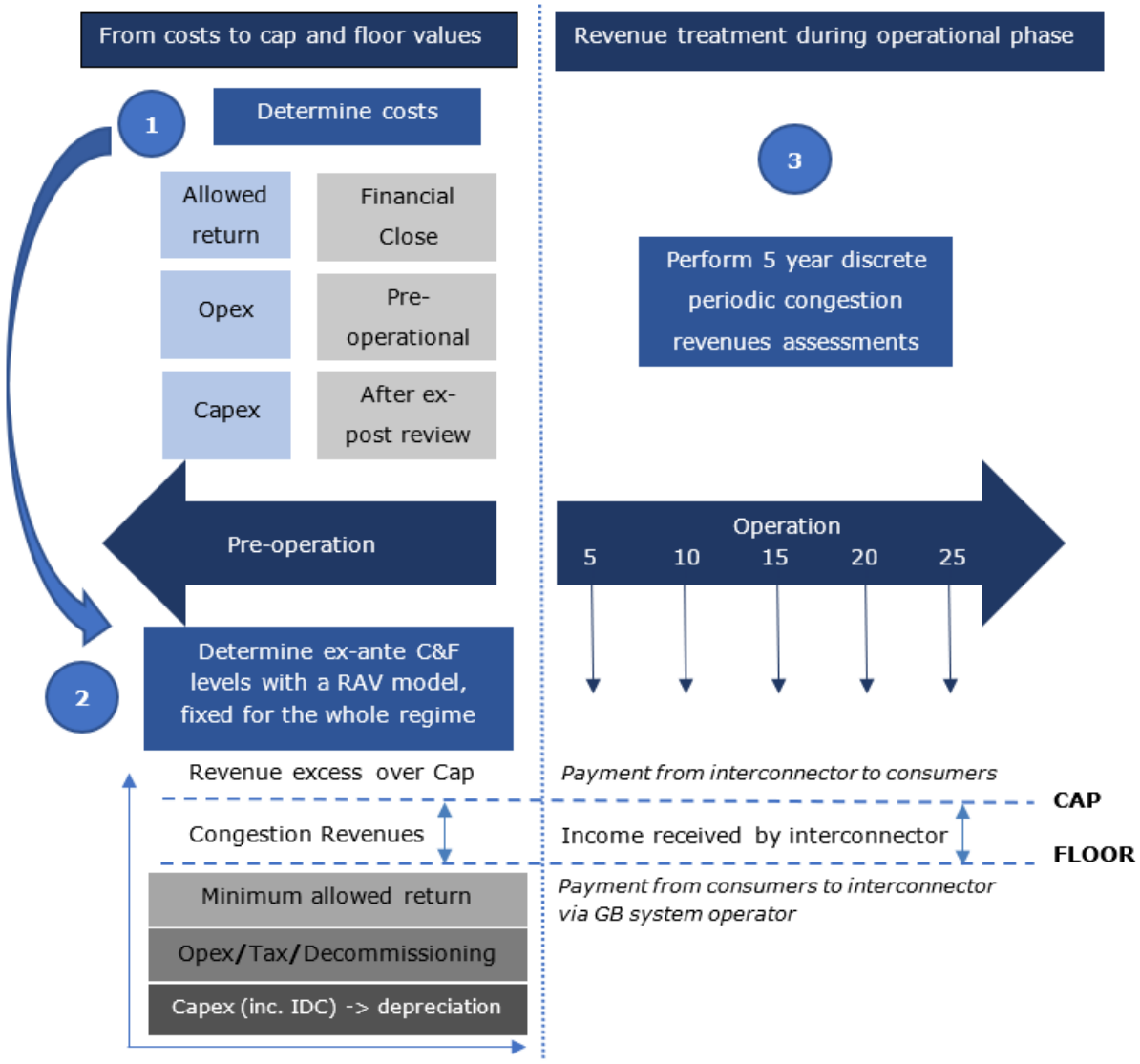
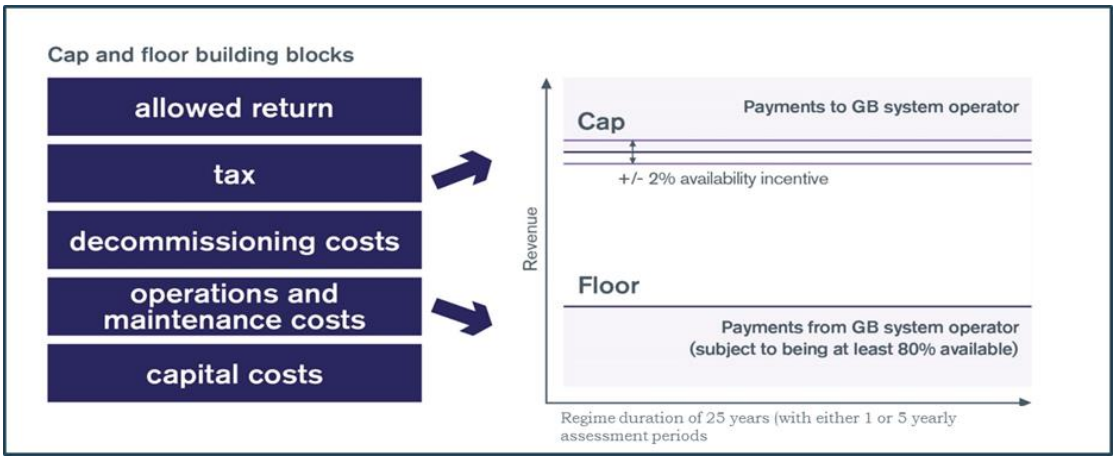
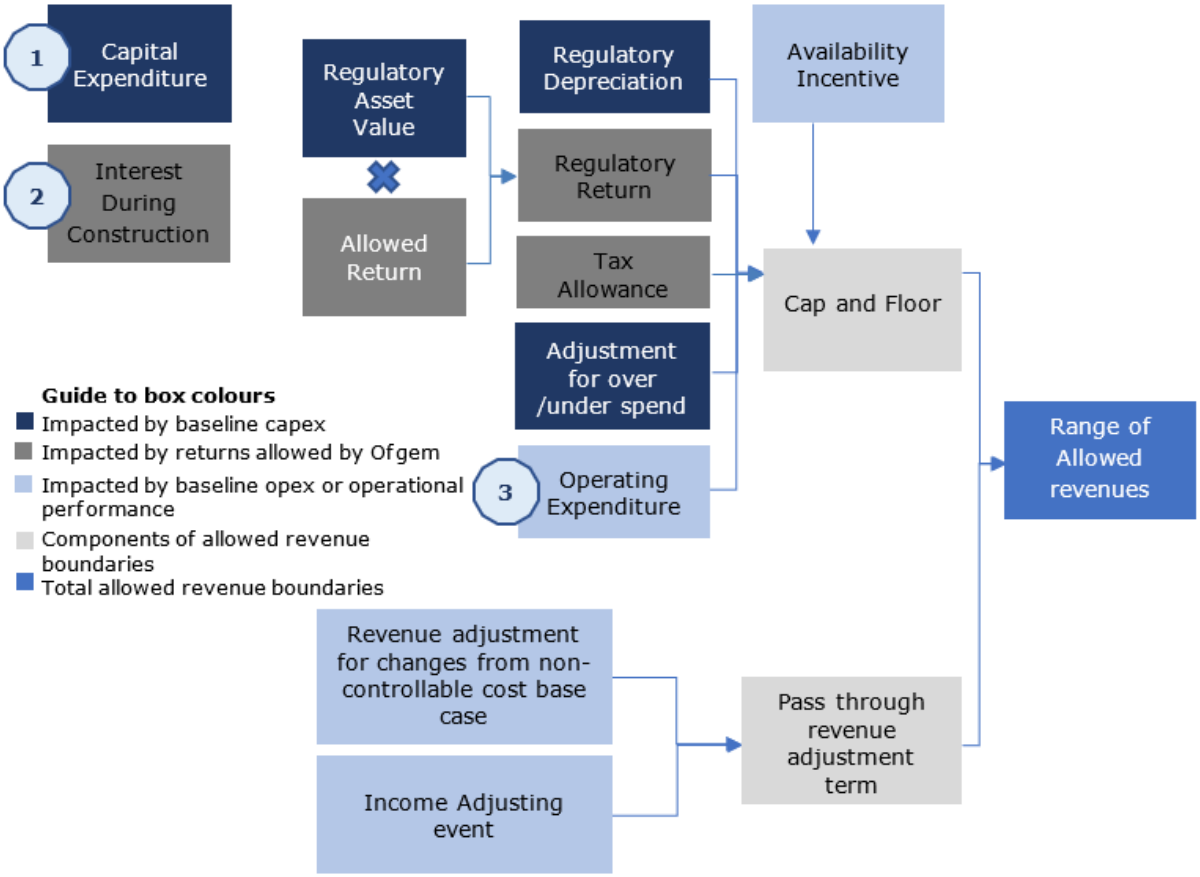


Figure 15: Components of our RAV based model



Under our RAV model, the floor allows for the recovery of economic and efficient costs for an interconnector developer. The cap and floor range, as well as the level of the cap and floor, is therefore important in providing the right balance of incentives and an appropriate risk reward trade-off.

Figure 16: How we set cap and floor levels



Key methodology considerations for cap and floor returns

The four main methodology considerations are the following:

i. *Weighted Average Cost of Capital (WACC) calculations for rate of return at the Cap and cost of debt rate of return at the Floor:* Different approaches to calculating the rate of returns are followed at the cap and the floor. This allows for the different risks associated with the cap and floor to be better reflected in the applicable return rates (further detail is available in our CFFM1 Handbook).

ii. *Type of approach – mechanistic:* A mechanistic approach is followed to provide clarity and certainty to developers and their investors which we consider may be necessary for attracting new developers to enter the market.

iii. *Timing for locking down the cost of capital parameters:* The rate of returns at the cap and floor are locked in at final investment decision or financial close.

iv. *Cross jurisdiction issues (blended or separate calculations for each currency):* where the regime covers 100% of the project (i.e. applies in both regulatory jurisdictions), we follow a blended calculation approach by applying a 50:50 weight to the cost of capitals calculated between the two jurisdictions. Otherwise, UK parameters are used.

Table 11: Floor return

Aspect	Design
Index	20-day simple trailing average
Index composition	Window 1 and Window 2: GBP Non-Financials of 10+ years to maturity; credit ratings of a blend of A/BBB (default) or BBB (regime variation). Index source: iBoxx. Window 3: 50% weighting to the iBoxx GBP Non-Financials 15+ A rated index and a 50% weighting to the iBoxx GBP Non-Financials 15+ BBB rated index. Inflation target: CPI.
Index deflator	Window 1 and Window 2: 10-year breakeven RPI data published by the Bank of England Window 3: Bank of England CPI inflation target (2%). Further information in Window 3 regime parameters decision.
Return locked down	At final investment decision or financial close, as appropriate

Table 12: Cap return

Aspect	Design
Calculation technique	Capital Asset Pricing Model (CAPM): An allowance for a return at the Cap is determined as the cost of equity, calculated in accordance with the capital asset pricing model.

Aspect	Design
	The following parameters are fixed across all Window 1 and Window 2 projects: asset beta 0.625, notional gearing 50%, equity beta 1.25, GB risk free rate 1.6%, Retail Price Index (RPI) adjustment 0.4% TMR equal to latest available value of arithmetic mean UK real equity returns from Dimson, Marsh and Staunton (DMS), which is published in the Credit Suisse Global Investment Returns Sourcebook, for the data series starting in 1900, available at time of FID and varies across projects. Equity IRR is not capped. Window 3 modifications: asset beta 0.60, notional gearing 50%, equity beta 1.125 (set using the below six comparators), risk free rate 1.39% (illustrative example). Asset beta parameter calculated as an average of the six comparators - Drax, SSE, Iberdrola, Orsted, RWE and National Grid using equal weighting and based on a 5-year estimation window. TMR parameter for Window 3 to align with the range estimated using Ofgem's latest methodology for the RIIO price controls at the time of the FID or FC, as appropriate, for each project and to use the midpoint of this range. As an illustration Ofgem's current most recent methodology of estimating TMR is described in the RIIO-3 Sector Specific Methodology Decision of 2024 where we have decided to set a CPIH-real TMR range of 6.5% to 7.0% based on ex-ante and ex-post methodologies. We will continue to base our estimates on equity return only, in line with the approach used by market participants and all regulators in the UK.
Risk free rate (RFR)	Long-term real risk-free rate (this is fixed at 1.6% for Window 1 and Window 2 projects) Window 3: Calculating the RFR using the 20-day average of 20-year ILG yield at FID or Financial Close, as appropriate; converting the RPI-real to CPIH-real yields using RPI-CPI wedge. 1.39% (illustrative example).
Equity beta	Fixed at 1.25 for Window 1 and Window 2 projects based on fixed asset beta of 0.625 and notional gearing of 50% For Window 3, equity beta of 1.125 calculated using 50% notional gearing and a 0.075 debt beta. We have adopted a 5-year estimation window, based on simple average of daily returns data, as the basis for estimating beta for interconnectors in the above values.
Equity risk premium	Window 1 and Window 2 calculated as: - TMR equal to latest available value of arithmetic mean UK real equity returns from Dimson, Marsh and Staunton (DMS), which is published in the Credit Suisse Global Investment

Aspect	Design
	Returns Sourcebook, for the data series starting in 1900, minus - Fixed RPI adjustment of 0.4%; minus - Fixed risk-free rate of 1.6%. Window 3: above calculation adjusted by updated parameters.
Return locked down	At final investment decision or financial close, as appropriate

Table 13: Cost of capital during operation

Aspect	Design
Calculation technique	**Default regime:** 50% notional gearing is applied to Floor rate of return (cost of debt) and Cap rate of return (cost of equity) to determine WACC during operations. **Regime variation:** the Bank of England Sterling Overnight Index Average (SONIA) applicable for the period under consideration plus a margin determined at financial close (based on a competitive debt raising process overseen by Ofgem).
Gearing	50% notional gearing

Table 14: Additional finance cost allowance

Aspect	Design
Debt transaction cost	Default: notional 2.5%[24] Regime variation: Actual debt transaction cost
Equity transaction cost	Default: notional 5% Regime variation (for Approach 2 – ACOD): Actual equity transaction cost

Table 16: High level regime design

Aspect	Design
Regime length	25 years
Regime start date	Window 1: Earlier of 1st January 2021 or any date specified in the licence for the developer Window 2: 1st January 2024 or any date specified in the licence for the developer.

[24] Debt and equity transaction cost allowances (£m) are calculated by applying the relevant transaction cost rates (2.5% and 5.0% respectively) to the RAV through the calculations set out in the 'Finance' sheet of the CFFM1 financial model and associated handbook.

	Window 3: Backstop Date for all Window 3 projects is 31 December 2032. If a force majeure prevents the interconnector from becoming operational on the agreed operation start date, then Ofgem will consider delaying the regime start date accordingly. If the delay is not caused by a force majeure event the regime will only run for 25 years minus the delay period.
Cap and floor levels	Cap and floor allowances are set on an annual basis as the sum of the following building blocks: costs during operations (estimated ex-ante at FPA and then PCR); RAV depreciation and return on RAV (with RAV estimated ex-ante at FPA and then confirmed ex-post at PCR); and tax. These annual allowances are then annuitized to set cap and floor levels that are constant in real terms over the regime. Cap and floor levels remain mostly fixed for regime length, except for annual inflation indexation, availability incentives at the cap, and any required one-off adjustments to operating costs (only one allowed during the regime length) and decommissioning costs (multiple allowed).
Setting costs	Capex – ex-post capex review Opex – set ex-ante, i.e. before operation • Capital costs include development expenditure, construction capex, spares, replacement (life cycle) expenditure, IDC and financial transaction costs. • These items are the building blocks of the RAV which reflects the undepreciated asset value of the interconnector. • Allowances for capital and operating costs are determined through Ofgem's cost assessment process similar to the OFTO regime.
Assessment period (assessing whether IC revenues are above/below cap/floor)	5 years, discrete periodic basis (default regime) or 1 year (regime variation). • Each assessment period is considered in isolation, with no carry overs between assessment periods. • There is a provision for developers to request a within-period adjustment (covering whole years) on the grounds of financeability (for the default regime only); or pre-empting a material end of period adjustment. Any within-period adjustment is subject to a true-up on an NPV neutral basis at end of the assessment period.
Mechanism	Cap and floor returns earned within boundaries; revenues above cap returned to consumers, revenues below floor require payment from consumers (via Transmission Use of System Charges)

Proving period	A 60-day proving period to demonstrate that the interconnector is available for the use of conveyance of electricity at 100% of its technically rated capacity. Detail is set out in Special Condition 2 (Cap Level and Floor Level) of the licence.
Availability incentives	The Cap level (in £m) is adjusted annually by up to +/-2% if interconnector availability exceeds or falls short of the project's target availability level. This means that availability above (or below) the target level will result in a one-for-one percentage increase (or decrease) in the cap level, up to +/- 2%. This target availability level is different from and higher than the minimum availability level fixed at 80%. Developers will lose automatic eligibility for floor payments for each individual year if availability is below 80% in that year unless this was caused by an 'exceptional event' (i.e. force majeure). A variation to the regime can reinstate the floor via temporary loans provided by consumers which cannot exceed 400% of the applicable floor level. Special Condition 4 (Interconnector Availability Incentive) of the licence issued to the developer provides more detail.
Exceptional Event	Exceptional Event(s) that may impact interconnector availability are recognised under certain conditions as set out in Special Condition 4 (Interconnector Availability Incentive) of the licence issued to the developer.
Income Adjusting Event (IAE)	Assessed Revenue for a developer maybe adjusted (upwards or downwards) as a consequence of an Income Adjusting Event. The process for determination of IAE is set out in Special Condition 7 (Non-Controllable Costs) of the licence issued to a developer.

Tax Allowance

In the setting of the cap and floor levels, we compute a separate tax allowance at the floor and another at the cap. This reflects the different levels of profits associated with revenue being at the cap and floor, respectively. Since we provide a separate tax allowance at both the floor and the cap, we set the cap and floor returns on a vanilla basis.

Tax arrangements are reflected in the following way:

- **Tax allowance at the floor level** is estimated as the annual tax allowances at the floor and then converted into an annuity to be added to the revenue floor allowance annuity.

- **Tax allowance at the cap level** is estimated as the annual tax allowances at the cap and then converted into an annuity to be added to the revenue cap allowance annuity.

The cap and the floor levels are built from building blocks of capital costs, operations and maintenance costs, decommissioning costs, tax allowances and allowed return. The cost related building blocks (capital costs, operations, maintenance and decommissioning) are confirmed at FPA and/or PCR stages, whereas the financial costs (allowed return and approach to tax allowances) are locked in at FID. There is no defined tax-trigger mechanism for tax changes (i.e. the approach to tax is set for the length of the regime).

The final allowance (in £) reflects the final RAV at the PCR stage. For the avoidance of doubt, once tax rate is locked in at FID, there will be no re-openers for changes to tax rate or treatment.

Corporation tax rate used for the purposes of calculating cap and floor tax allowances is set at FID based on the HMT tax guidance (tax rate in use at time of FID or a publicly announced rate). For example, if the current tax rate at FID is 20% but HMT have published that tax will rise to 22% in the future, the relevant tax rate for calculating the tax allowance will be 22%. If the proposed tax rate does not materialise by the time of calculating the final allowance to reflect the final RAV at the PCR stage, the relevant tax rate will revert back to the rate available at FID (in this examples case 20%).

More detail on tax calculation is set out in the relevant section of any of our project specific Cap and Floor Financial Model 1 Handbook (CFFMH1). Please note our CFFM1 is project specific and subject to change, the most up-to-date version is available on our webpage.

5.2 Cap and Floor Financial Models (CFFM)

We set the cap and floor levels to provide a stable revenue stream that developers can rely upon to recover their costs, including debt servicing, and to meet the financing covenants required by their lenders. These covenants are competitively determined with Ofgem having oversight over the process.

The methodology for setting the cap and floor levels takes into account the following key considerations:

- **Costs estimation** – determining the efficient costs (investment capital) of delivering and operating an interconnector project before (ex-ante) and after (ex-post) these costs are incurred.
- **RAV estimation** – converting the investment capital into a RAV.

- **Rate of return estimation** – determining an allowed rate of return on the capital invested (both debt and equity).
- **Incentives** – incentivising developers to deliver high quality projects on time and to make the interconnector available to flow electricity as much as possible.
- **Invested capital and allowed return recovery** – determining in what form developers and investors can recover their investment and earn a return on it.
- **Timing** – determining final decision points for all estimates and fixing the cap and floor levels to provide investors with clarity and certainty.

We adjust cap and floor levels during operations to consider any allowed pass-through costs and to compare actual revenue against adjusted cap and floor levels, to determine whether any payments are due to or from GB consumers.

The methodology for adjusting the cap and floor levels takes into account the following key considerations:

- **Changes in controllable opex** – determining at any point during the last 15 years of the 25-year operational period (but not during the first 10 years), a one-time adjustment to the baseline level of controllable opex, to rectify a misalignment between revised cost forecasts for the reminder of the period and original baseline levels assumed at PCR stage.
- **Changes in decommissioning costs** – determining at any point during the 25-year operational period (and, if required, more than once), an adjustment to the baseline level of decommissioning costs to rectify a misalignment between revised cost forecasts for the reminder of the period and original baseline levels assumed at PCR stage.
- **Inflation** – inflating the cap and floor levels to reflect outturn inflation since the baseline was set and converting values from real to nominal to allow assessment of interconnector revenues against these levels in the relevant year under consideration.
- **Availability** – determining whether the floor level is available to a licensee (if developers have met the minimum availability target) and implementing a plus or minus 2% adjustment to the cap level depending on how a licensee's interconnector performs relative to the target availability level.

Model description and governance

The Cap and Floor Financial Models (CFFMs) are Microsoft Excel based models that Ofgem uses to transform cost and other inputs into the cap and floor levels. These levels represent boundaries to the revenue streams that are available to developers and investors to recover their investment and earn a return on it.

There are two CFFMs, model 1 (CFFM1) and model 2 (CFFM2). Where a jointly regulated cap and floor regime is applicable (as in the case of the Nemo Link project) the CFFM1 and CFFM2 are dual currency (€/£) models. Where a split regulatory framework is the case (meaning the cap and floor regime applies only to the GB side of the interconnector), the CFFM1 and CFFM2 are single currency (£) models.

The default models follow a notional cost of capital approach – using notional financial inputs to generate cap and floor levels and actual revenues earned by an interconnector are then compared against these notional levels. The models are modified if the licensee requests variations to the default regime which have impact on the working of financial model. For example, we use the CFFM1 – ACOD to determine cap and floor levels underpinned by our Notional Cost of Debt (NCOD) approach as well as the floor level underpinned by our Actual Cost of Debt (ACOD) approach. This is accomplished by using notional financial inputs to generate the cap but financial inputs determined via developer-led debt funding competition to generate the floor level. Further detail is available in Appendix 2 to our February 2021 consultation notice.

Ofgem developed CFFM1 (default and modified model following an actual cost of debt approach) and CFFM2 (default) in consultation with developers and other parties and maintains the models throughout the regime duration. Ofgem is currently developing the modified CFFM2 (ACOD).

We update the CFFM1 for each project at the FPA and PCR stages or at the licensee's licence modification stage and use it to determine the cap and floor levels applicable to the licensee at FPA and then any adjustments to these levels required at PCR. The CFFM2 is used for our assessment of revenues and any allowed adjustments to cap and floor levels during the operational period.

Please refer to the associated documents table for the link to the latest versions of our CFFM1 and CFFM2 and the accompanying handbooks.

Key CFFM1 and CFFM2 inputs and outputs

The key model inputs for CFFM1 are the following:

- Cap return rate (set at FID)
- Floor return rate - both notional and actual (as applicable, set at FID)
- IDC rate (set at FID)
- Costs during construction (development expenditure – devex, capital expenditure – capex, and cost of spares)
- Costs during operations (replacement expenditure – repex, decommissioning baseline, controllable opex and non-controllable opex baseline)

- Pre-operational gearing
- Operational gearing
- Equity and debt transaction cost allowances
- Regime start date and other relevant dates.

The 'Inputs' sheet of the CFFM1 contains all the inputs used throughout the model to calculate preliminary cap and floor levels (at FPA) and final cap and floor levels (at PCR), i.e. revenue cap, notional floor and actual floor levels for a specific project.

The key model outputs are the following:

- Cap level, preliminary at FPA and final at PCR
- Floor level - both notional and actual (as applicable), at FPA and PCR
- Cap adjustment value, at PCR
- Floor adjustment value - both notional and actual (as applicable), at PCR.

The 'Cap Floor Levels' sheet of the CFFM1 contains all the key outputs generated from the model that will apply for a specific project.

The key model inputs for the CFFM2 are the following:

- Cap level
- Floor level - both notional and actual (as applicable)
- Baseline costs during operations
- Regime start date and other relevant dates
- Cap level adjustments (various)
- Floor level adjustments (various) – to both notional and actual floor (as applicable)
- Operational discount rate
- Revenue items
- Inflation index.

The key model outputs are the following:

- Adjusted Cap level
- Adjusted Floor level - both notional and actual (as applicable)
- Amounts due to or from GB consumers.

How we calculate the cap and floor levels

The cap and floor levels are built from building blocks of capital costs, operating and maintenance costs, decommissioning costs, tax and allowed return. The cap and floor levels are then profiled so that they are flat in real terms over the length of the regime.

Figure 17 below sets out how the costs elements interact to determine revenue cap and floor levels following the default regime approach. Where we have approved a regime variation for a project, we may follow a different approach as set out in Figure 17.

Figure 17: Building blocks of the notional cap and floor levels under default regime (RPI-real)

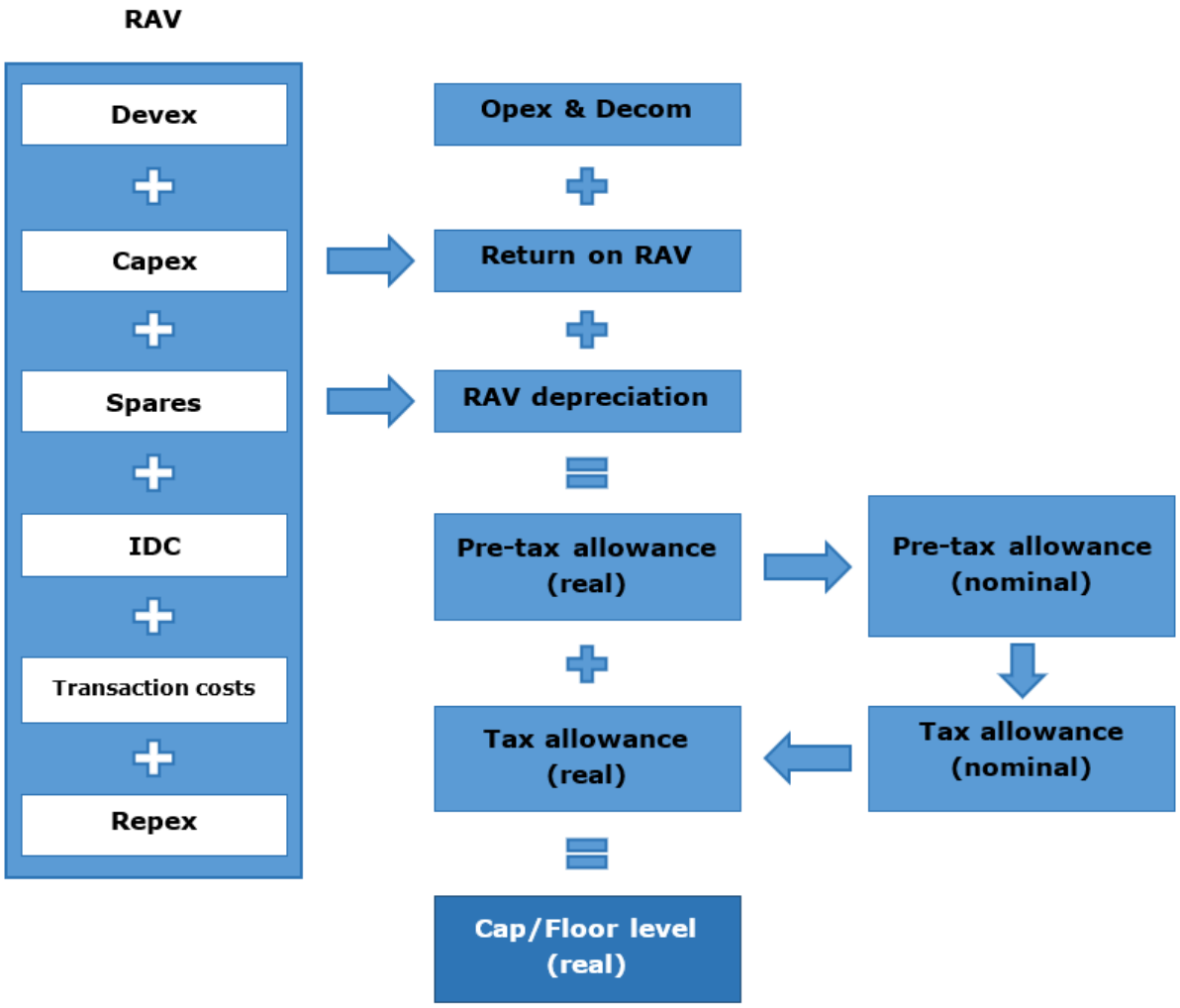
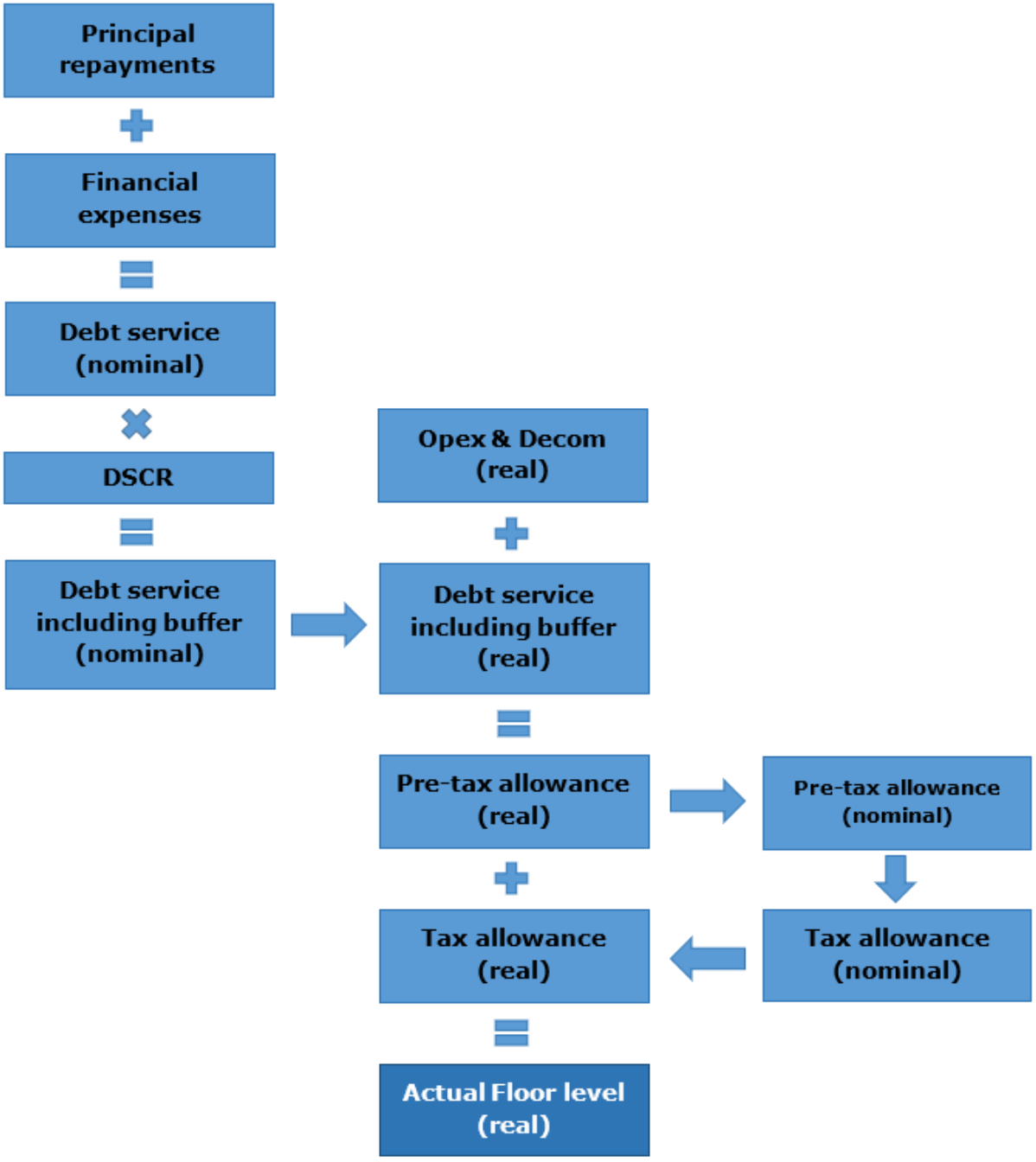


Figure 18: Building blocks of the actual floor level following a regime variation approach (RPI-real)[25]



[25] This approach may vary by project.

5.3 Interest During Construction (IDC)

We provide an IDC allowance to licensees to cover the cost of financing the development and construction of transmission assets under our regulatory regimes.

During the pre-operational period, there is no potential to receive income through the regime, so any IDC generated pre-operation is capitalised into the RAV. It is only once operation starts that this can be recovered through RAV depreciation and return on RAV.

Under the default regime, the allowance is in the form of an explicit notional financing rate with a specific methodology developed to determine how we set the rate.

Any future revisions to the methodology used to set the IDC rate will not affect Window 1 projects and Window 2 projects that have already made a final investment decision (FID) in the financial years before the financial year in which the revision is published.

5.3.1 IDC methodology for Nemo Link and Window 1 projects

The IDC rate is the rate of return that we allow developers of offshore transmission assets and interconnectors to earn during the construction phase. We estimate it as a cost incurred in the development and construction phase which is capitalised and feeds into the cap and floor levels. We calculate IDC on the RAV balance at the end of each pre-operational year and add it to the starting RAV for the succeeding year (until the start of operations).

The IDC rate (%) is determined based on the FID date for each Window 1 project and confirmed at the FPA stage of the project. The final allowance (£) is reflected in the final RAV at the PCR stage (an initial value will also be specified at the FPA stage).

How we set IDC parameters for Nemo Link and Window 1 projects

We calculate the rate as a weighted average of cost of debt and cost of equity allowances, with weights based on a notional gearing level, plus relevant risk premia:

$$IDC\ rate = WACC + Development\ risk\ premium + Construction\ risk\ premium$$

Where:

$$WACC = Cost\ of\ debt * Gearing + Cost\ of\ \boldsymbol{Equity} * (1 - Gearing)$$

Cost of debt: we estimate the cost of debt as yield only without transaction costs. The cap and floor regime accounts for transaction costs separately which we explain in detail under Section 5.2. The cost of debt component of the IDC rate is equal to the floor return rate, which is determined as explained in Section 5.1 'Cap and Floor regime design'.

Gearing: we use a weighted average of the actual gearing of four comparable firms (Centrica Plc, E.ON AG, RWE AG and SSE Plc), calculated using data from Bloomberg. Gearing is calculated as:

$$Gearing = \frac{Net\ Debt}{Equity}$$

Where:

$$Net\ debt = Long\ term\ debt + Short\ term\ debt - Cash$$

$$Equity = Market\ capitalisation + Preferred\ equity$$

Cost of equity: we calculate the cost of equity using the CAPM:

$$Cost\ of\ Equity = Risk\ free\ rate + Equity\ beta * Equity\ risk\ premium$$

Risk free rate: The risk-free rate is calculated as the ten-year average yield on UK ten-year real zero-coupon gilts (IUMAMRZC) at the FID date. This is similar to the way the risk-free rate is estimated in onshore network price controls.

Equity beta: This is based on the same four comparators used to estimate notional gearing. We calculate equity beta as the weighted average (weighted by market capitalisation) of the raw equity betas of the four comparators from Bloomberg.

Equity risk premium: This is calculated as total market return (TMR) minus an RPI adjustment (accounting for the RPI formula effect) minus risk free rate. TMR and RPI adjustment are the same as those used to calculate the cap return rate, as explained in Section 5.2 'Cap and Floor regime design'; the risk-free rate is estimated as explained above.

5.3.2 IDC methodology for Window 2 projects

In July 2018, we introduced a new methodology for setting IDC rates to apply for Window 2 projects. The detail of this new methodology is set out in our IDC decisions of 30 July 2018 and 30 May 2019.

Our decision changed the timing of setting interconnector IDC from individual assessments at the date of FID for each project (Window 1) to an annual update applicable to all projects reaching FID in that financial year (Window 2). Once set, the IDC rate for Window 1 and Window 2 projects remain fixed until construction of the project is complete.

We expect that the methodology introduced for Window 2 projects will apply to interconnectors considered under any future cap and floor regime application windows.

How we set IDC parameters for Window 2 projects

This section summarises the methodology introduced in July 2018 for each parameter of the IDC rates, and the steps involved in setting the value of the parameters for 2019-20. It also sets out clearly where we have refined the process in 2019 to make it more robust and transparent.

Cost of debt - Yield: The yield component of the cost of debt is set based on the spot and 1-year average yields on three iBoxx GBP bond indices (sourced from HIS Markit):

- A-rated Non-Financial Corporate (primary benchmark).
- BBB-rated Non-Financial Corporate (primary benchmark); and
- Infrastructure (secondary benchmark used as a cross-check).

The tenor of the indices is selected to match the approximate average length of the construction period for interconnectors - tenor of 3-5 years, reflecting average construction period of 4 years.

Cost of debt – Transaction costs: There is no transaction cost component of the cost of debt used to set the IDC rate for interconnectors, as transaction cost allowances for both debt and equity are calculated separately and capitalised into the RAV, as explained in Section 5.1 'Cap and Floor regime design'.

Cost of equity – Risk-free rate: The risk-free rate is set based on spot, 20-day average and 1-year average yields on the 5-year UK nominal zero-coupon Gilt.

Cost of equity – Total Market Return (TMR): To inform our policy decisions for the RIIO-2 price controls for regulated networks, we undertook a thorough review of TMR and published our proposed methodology and range in May 2019, as part of the Finance Annex to the RIIO-2 Sector Specific Methodology.

This range was determined using a wide pool of evidence, including both historical averages and forward-looking measures, and following an extensive consultation exercise. The findings of this review were not available to us when we set the IDC rates for 2018-19.

Given the complexity in estimating TMR, and the significant work undertaken for RIIO-2, we have concluded that it is appropriate to align our approaches and use the same range to set the allowed cost of capital for regulated networks and the IDC rates applying to new assets.

Cost of equity – Asset beta: The baseline asset beta range is derived using two sets of comparators:

- Low end of the range (lower risk): Scottish Transmission Operators (TOs) during RIIO-1 (due to these TOs having a particularly capital-intensive investment programme in RIIO-1); and
- High end of the range (higher risk): eleven Construction and Engineering (C&E) firms trading with sufficient liquidity (bid-ask spread of less than 2%) on the London Stock Exchange.

The low end of the baseline asset beta range is set just above the asset beta of Scottish TOs during RIIO-1.

For C&E firms, raw equity betas are derived from market data and de-geared into asset betas based on the firms' net debt position and market capitalisation (with all relevant financial data downloaded from Bloomberg): the average of these asset betas across the eleven firms and over the previous 5 years informs the high end of the baseline asset beta range.

Uplifts are then applied to the baseline range to reflect additional riskiness relative to the baseline scenario, for example due to additional exposure to the marine environment, 0.05 uplift is applied at the low end and 0.10 uplift at the high end.

As explained at the start of this section, asset betas are then re-geared into equity betas using the notional gearing level.

Gearing: The notional gearing level is derived looking at two sets of comparators:

- Lower gearing: the same eleven C&E firms used to estimate the top end of the asset beta range; and
- Higher gearing: a sample of comparable infrastructure projects delivered within a regulated environment.

C&E firms are considered to be more exposed to risk (and therefore unable to take on high levels of debt) due to the lack of regulatory protection; this protection is available to the regulated infrastructure projects, which therefore are considered to carry less risk and be able to take on higher levels of debt.

The notional gearing is set broadly in line with the average between the gearing levels of these two sets of comparators.

Inflation: To convert ranges from nominal to RPI-real, we use an inflation assumption for the RPI.

The RPI assumption is set based on spot and 1-year average 5-year breakeven inflation (which is the inflation assumption implied in the difference between nominal and real 5-year UK zero-coupon Gilt yields).

5.3.3 IDC methodology for Window 3 projects

In November 2023, we published a consultation proposing to remove the Retail Price Index (RPI) as an inflation index from the cap and floor regime design in favour of the Consumer Prices Index including owner occupiers' housing costs (CPIH) for determining the IDC rates. This change aimed to align the inflation measure more closely with actual consumer costs. Until reliable CPIH forecasts become available, the Consumer Prices Index (CPI) will serve as a proxy. Historical CPI and CPIH rates of inflation have been very close on average. The average difference between CPIH and CPI over a longer-term dataset is only 0.04%, and it is far from certain what the magnitude or direction of any future difference between the measures would be. Therefore, we consider assuming that CPI is a close proxy for CPIH is appropriate.

IDC rates for Window 3 interconnectors are expressed in CPIH-real terms. These changes were initially reflected in our March 2024 decision to set the IDC rate for Window 3 interconnectors. Any outstanding IDC rates for Window 1 and 2 projects are determined post-FID in accordance with existing policies.

How we set IDC parameters for Window 3 projects

This section summarises the methodology used to calculate parameters of IDC rates for Window 3 cap and floor electricity interconnectors.

Corporation tax: Increased from 19% to 25% effective 1 April 2023.

Cost of Debt- Yield: Determined based on yields from three iBoxx GBP bond indices:

- A-rated Non-Financial Corporate
- BBB-rated Non-Financial Corporate
- Infrastructure

The selected tenor matches the average construction periods for interconnectors (usually 3-5 years).

The bottom end of the ranges is set as a weighted average of the spot and 1-year average yields on the A-rated Non-Financial Corporate index, with weights of two thirds and one third respectively.

The top end of the ranges is set as a weighted average of the spot and 1-year average yields on the BBB-rated Non-Financial Corporate index, with weights of two thirds and one third respectively.

Cost of equity- Risk-free Rate: Based on spot, 20-day average and 1-year average yields on the 5-year UK Gilt.

Inflation: To convert the ranges from nominal to real, we use the CPI inflation assumption, as a proxy for CPIH. RPI assumptions are provided for comparison.

Cost of equity- Total Market Return (TMR): Aligned with the range estimated for the RIIO-2 price controls for transmission and gas distribution networks, confirmed in the Final Determinations on February 3, 2021.

Cost of equity- Asset Beta: The baseline asset beta range is derived using two sets of comparators:

- at the lower end, applying a small uplift from 0.42 to 0.45 to the asset beta estimates used for construction-intensive regulated networks, such as the Scottish transmission companies in the RIIO-T1 price controls; and
- at the upper end, estimates of the asset beta pertaining to comparator firms in the construction and engineering sector.

Uplifts are then applied to the baseline range to reflect additional riskiness relative to the baseline scenario, for example due to additional exposure to the marine environment, 0.05 uplift at the low end and 0.10 uplift at the high end.

The asset betas are then re-geared into equity betas using the notional gearing level.

Appendices

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Appendix 1: Abbreviations

Abbreviation	Term
ARs	Access Rules
CACM	Capacity Allocation and Congestion Management
Capex	Capital Expenditure
CAPM	Capital Asset Pricing Model
CEP	Clean Energy Package
CFFM	Cap and Floor Financial Model
CM	Charging Methodology
C&E	Construction and Engineering
C&F	Cap and Floor
Decommex	Decommissioning expenditure
Devex	Development Expenditure
EPA	End of Period Assessment
ESO	Electricity System Operator
FC	Financial Close
FID	Final Investment Decision
FPA	Final Project Assessment
GB	Great Britain
GIL	Greenlink Interconnector Limited
GW	Gigawatt
IAE	Income Adjusting Event
ICF_t	The value of the Interconnector Cap and Floor Revenue Adjustment term for relevant year *t*
IEM	Internal Energy Market
ICPR	Interconnector Policy Review

Abbreviation	Term
IDC	Interest During Construction
IPA	Initial Project Assessment
ITPR	Integrated Transmission Planning and Regulation
MW	Megawatt
NBL	NeuConnect Britain Limited
NGVL	National Grid Viking Link Limited
NPV	Net Present Value
NRA	National Regulation Authority
NSL	North Sea Link
OHA	Offshore Hybrid Asset
Opex	Operational Expenditure
PCA	Post Construction Adjustment
PCR	Post Construction Review
RAB	Regulated Asset Base
RAV	Regulatory Asset Value
RIGs	Regulation, Instructions and Guidance
RPI	Retail Price Index
RSD	Regime Start Date
SC	Special Condition
SLC	Standard Licence Condition
SONIA	Sterling Overnight Index Average
SQ	Supplementary Questions
TCA	Trade and Cooperation Agreement
TMR	Total Market Return
TNUoS	Transmission Network Use of System
TSO	Transmission System Operator
WACC	Weighted Average Cost of Capital
WPA	Within Period Assessment