Consultation

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Offshore Transmission Network Review - Multi-Purpose Interconnectors: Minded-to Decision on interim framework

Subject	Details
Publication date:	14 April 2022
Response deadline:	9 June 2022
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We are consulting on a series of minded-to decisions associated with the introduction of an interim framework for Multi-Purpose Interconnectors, as part of the Offshore Transmission Network Review. We would like views from people with an interest in this topic. We particularly welcome responses from developers with an interest in these projects both in the short and long term. We would also welcome responses from wider stakeholders and the public.

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

Contents

1. Introduction

What are we consulting on?

1.1. We are consulting on a series of minded-to decisions related to the development of an interim regime to facilitate and regulate near-term Multi-Purpose Interconnectors (MPIs) as part of the Offshore Transmission Network Review (OTNR).

Background

1.2. The Offshore Transmission Network Review (OTNR) was launched in July 2020 with the objective to ensure that the transmission connections for offshore wind generation are delivered in the most appropriate way, considering the increased ambition for offshore wind to achieve net zero. This aims to find the appropriate balance between environmental, social and economic costs.

1.3. The importance of greater coordination in the development of offshore transmission infrastructure was set out in Ofgem's Decarbonisation Action Plan[1], published in February 2020.

1.4. The Prime Minister's Ten Point Plan for a Green Industrial Revolution in November 2020 set an ambitious offshore wind target of 40GW by 2030. In April 2022, the Prime Minister announced a new British Energy Security Strategy, which built on previous offshore wind targets to set an ambition of 50GW of offshore wind by 2030.

1.5. Delivering 40GW of offshore wind by 2030 is challenging. The regulatory framework for developing and connecting offshore wind is complex and involves multiple government departments, regulators, statutory bodies, devolved administrations and industry parties. To achieve the deliverables of the OTNR there are four workstreams operating in parallel, with varying degrees of Ofgem involvement.

[1] Ofgem's Decarbonisation Action Plan | Ofgem

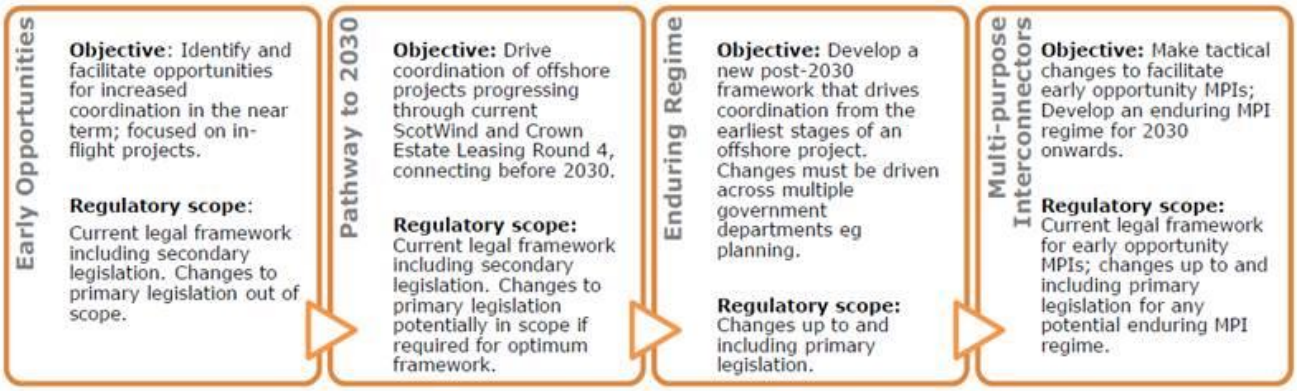


Figure 1: The objective and regulatory scope of the four OTNR workstreams

1.6. The objective of the OTNR MPI workstream is to explore amendments to the current regulatory and legal framework to facilitate MPIs. It will do this in two ways: Ofgem will lead work on incremental changes to the existing framework to facilitate MPIs in the near term; and the Department for Business Energy and Industrial Strategy (BEIS) will lead work exploring the need for and benefit of legislative change, with a view to potentially creating an enduring MPI regime via changes or updates to the Electricity Act 1989 ('the Act')[2].

1.7. We consulted in July 2021[3] to explore issues such as asset classification, licencing, and ownership of MPIs within the current legal framework. The question of asset classification is important for a number of reasons. Assets, such as interconnectors or offshore transmission (commonly referred to as 'OFTOs'), are classified based on their primary function. We then regulate the activity undertaken on these assets, primarily by way of a licence. Different licence types have different requirements depending on the asset activity being regulated.

1.8. We also discussed the potential application of the cap and floor regime, and the impact of evolving market arrangements on MPI operation. We sought views from

[2] Electricity Act 1989
[3] Consultation - Changes intended to bring about greater coordination in the development of offshore energy networks (ofgem.gov.uk)

stakeholders to inform policy development. In January 2022 we published an update[4] to share the feedback received from stakeholders and to set out next steps.

1.9. In December 2021, we published our Interconnector Policy Review decision[5] in which we set out our plans to launch a pilot scheme for MPIs under an adjusted cap and floor regime, alongside our third cap and floor application window.

1.10. This minded-to decision consultation on MPIs follows on from our consultation in July, and in particular Section 4 on MPIs.

Purpose of this document

1.11. Following the July consultation, we have considered feedback from stakeholders and undertaken our own analysis. We are now consulting on our minded-to decision to make a series of changes to the current framework with the aim of facilitating near-term MPI projects.

1.12. We set out minded-to decisions on the following topics, and welcome feedback from stakeholders ahead of the closing date 9 June 2022:

- MPI models under consideration
- Asset classification and primary use
- Primary use reporting
- Licencing additional activities on multi-use assets
- Evolution of pre-existing assets to MPIs

1.13. We also provide a response to feedback and general updates on the following wider policy considerations surrounding MPIs and we welcome feedback from stakeholders:

- MPI ownership structures
- Migration from an interim to an enduring framework
- Interaction with Ofgem's Interconnector Policy Review
- Commercial barriers – Contracts for Difference
- Commercial barriers – Charging in the interconnector-led model
- Market arrangements

[4] Update following our consultation on changes intended to bring about greater coordination in the development of offshore energy networks | Ofgem
[5] Interconnector Policy Review - Decision | Ofgem

1.14. Once the consultation period is closed, we will consider all responses and assess whether changes to our minded-to positions are required. We want to be transparent in our consultations. We will publish the nonconfidential responses we receive alongside a decision on next steps on our website at Ofgem.gov.uk/consultations. If you want your response – in whole or in part – to be considered confidential, please tell us in your response and explain why. Please clearly mark the parts of your response that you consider to be confidential, and if possible, put the confidential material in separate appendices to your response.

Next steps

1.15. We have set out below our minded-to decisions in respect of Ofgem's interim MPI framework, developed as part of the OTNR. We welcome views from stakeholders ahead of the deadline set out above. We will then publish our Decision alongside an implementation consultation with the relevant guidance and draft licence amendments.

Related publications

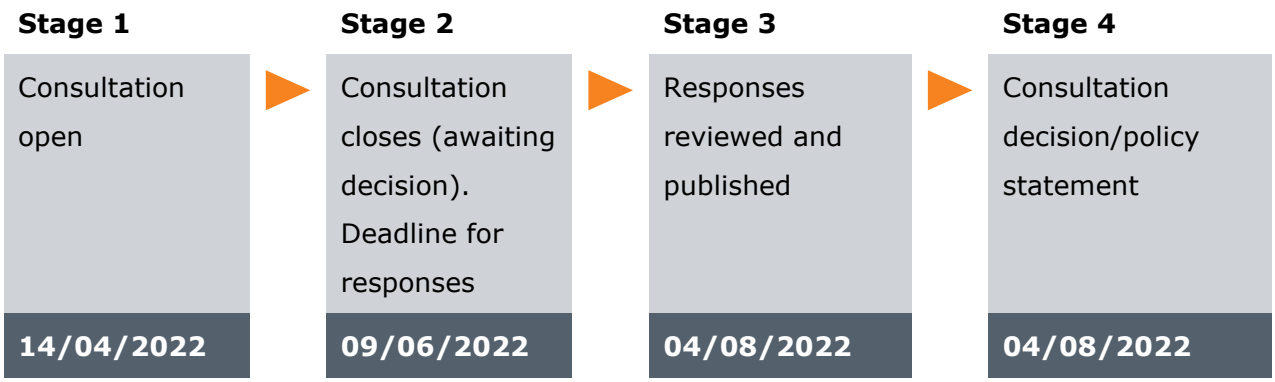
1.16. In August 2020, the Department for Business, Energy & Industrial Strategy (BEIS) and Ofgem issued a joint Open Letter in which we called for stakeholder views to support the OTNR. In December 2020, we published a joint response to the Open Letter engagement.

1.17. We published a consultation in July 2021 on three of the four OTNR workstreams: Early Opportunities, Pathway to 2030, and Multi-Purpose Interconnectors. We provided a summary of responses and an update on policy development in January 2022.

1.18. BEIS published a consultation in September 2021 on the Enduring Regime and Multi-Purpose Interconnectors workstreams of the OTNR.

1.19. OTNR newsletters and material from previous events are published by BEIS.

Consultation stages



How to respond

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

1.21. We've asked for your feedback in each of the questions throughout. Please respond to each one as fully as you can.

1.22. We will publish non-confidential responses on our website at www.ofgem.gov.uk/consultations.

Your response, data and confidentiality

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

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

1.25. If the information you give in your response contains personal data under the General Data Protection Regulation (Regulation (EU) 2016/679) as retained in domestic law following the UK's withdrawal from the European Union ("UK GDPR"), the Gas and Electricity Markets Authority will be the data controller for the purposes of GDPR. Ofgem uses the information in responses in performing its statutory functions and in accordance with section 105 of the Utilities Act 2000. Please refer to our Privacy Notice on consultations, see Appendix 4.

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

General feedback

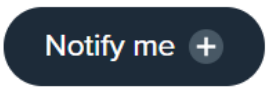
1.27. We believe that consultation is at the heart of good policy development. We welcome any comments about how we've run this consultation. We'd also like to get your answers to these questions:

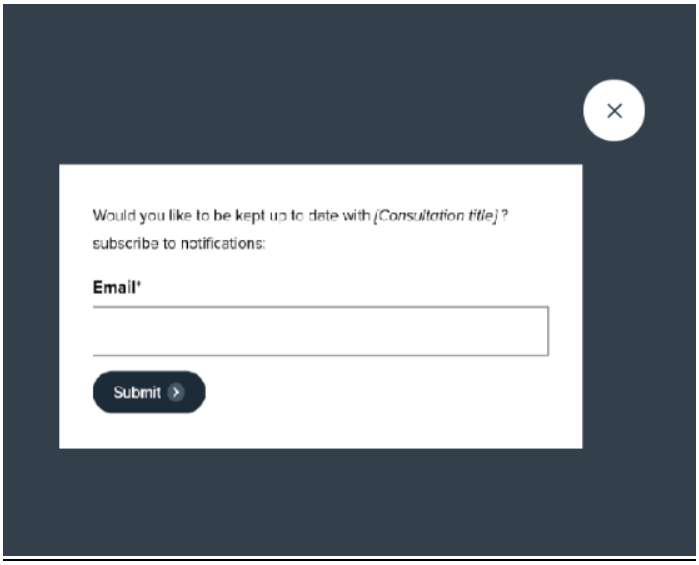
1. Do you have any comments about the overall process of this consultation?
2. Do you have any comments about its tone and content?
3. Was it easy to read and understand? Or could it have been better written?
4. Were its conclusions balanced?
5. Did it make reasoned recommendations for improvement?
6.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

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

How to track the progress of the consultation

You can track the progress of a consultation from upcoming to decision status using the 'notify me' function on a consultation page when published on our website. Ofgem.gov.uk/consultations.





Once subscribed to the notifications for a particular consultation, you will receive an email to notify you when it has changed status. Our consultation stages are:

Upcoming	Open	Closed (awaiting decision)	Closed (with decision)

2. Minded-to decisions

Section summary

This section sets out our minded-to decisions to make a series of changes to the current regulatory framework with the aim of facilitating near-term MPI projects. We welcome feedback from stakeholders on the content in this section ahead of the closing date.

Minded-to decisions are set out across a series of policy areas upon which we consulted in July 2021. These are: MPI models under consideration, asset classification and primary use, primary use reporting, licencing additional activities on multi-use assets, and the evolution of pre-existing assets to MPIs.

Question 1: Do you have any concerns with the minded-to decisions set out in Section 2?

MPI models under consideration

2.1. We are considering two MPI models, as shown below in Figure 2: the OFTO-led model and interconnector-led (IC-led) model. In each case, the combination of assets does the same thing. The key difference is how the assets are classified and licenced. We intend to set out a simple threshold to determine the primary use of the asset and thus the correct licence to grant. We recognise that configurations of models may vary from project to project and we intend to accommodate those variations in practice.

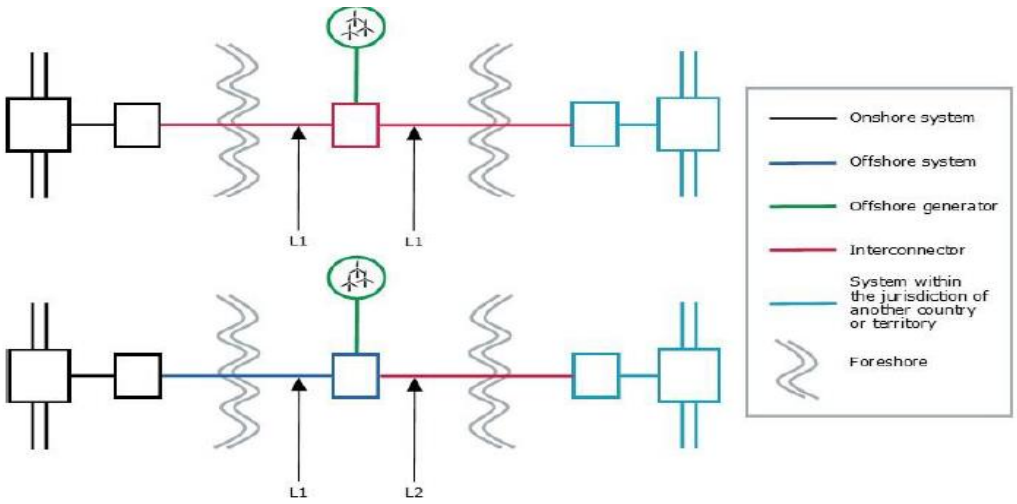


Figure 2: Illustration of MPI models under consideration

2.2. The IC-led model (top):

- The interconnector (L1) is a single continuous asset with one licence
- It conveys electricity from the offshore windfarm (OWF) to the GB National Electricity Transmission System (left) (offshore transmission)
- It conveys electricity from the OWF to connecting country (cross-border trade)
- It conveys electricity between the GB National Electricity Transmission System and connecting country (cross-border trade)

2.3. The OFTO-led model (bottom):

- The GB offshore system (L1) conveys electricity from the OWF to the GB onshore system (offshore transmission) and it conveys electricity between the onshore GB National Electricity Transmission System and the substation interfacing with L2 (in support of cross-border trade)
- The interconnector (L2) conveys electricity from OWF to connecting country (cross-border trade)
- L2 conveys electricity between the GB National electricity System (from the end of the OFTO) and the other jurisdiction (cross-border trade)

2.4. We asked stakeholders whether we should limit the interim MPI framework to just one model or consider applications for MPI projects using either model (or other configurations not yet known to or considered by us). The majority view from stakeholders was that we should be open to all models and configurations at this stage.

2.5. We have considered this issue from a variety of angles. We have considered whether regulatory flexibility is useful – or burdensome – at this early stage in the OTNR, and whether it is possible from a regulatory perspective to adapt the existing licenses for either model. We have also considered the range of projects proposed to us from developers since the launch of the OTNR, including those being considered through the Early Opportunities workstream.

Minded-to decision: We will not limit the interim framework to one MPI model. We will be open to applications for both the IC-led model and the OFTO-led model, as well as others that might be in development.

2.6. **Rationale:** We agree with stakeholder views shared in response to the July consultation (and published in our January 2022 update) that the concepts, commercial application and the regulatory landscape surrounding hybrid assets and MPIs – in GB and beyond – are still evolving and so we should avoid imposing limitations on project scope at this stage. Such limitations would conflict with our objective to facilitate early coordination ahead of 2030. Further, we want to avoid discouraging innovation at this early stage and are keen to build an evidence base to inform engagement with BEIS on any potential enduring MPI framework.

Asset classification and primary use

Key themes from consultation responses and internal analysis

2.7. The question of asset classification is important for a number of reasons. Assets, such as interconnectors or offshore transmission (commonly referred to as 'OFTOs'), are classified based on their primary function. We then regulate assets based on this function, primarily by way of a licence. Different licence types have different requirements depending on the asset being regulated.

2.8. The type of asset and prohibited activity undertaken by that asset determines what type of licence(s) will be needed, and by extension the regulatory framework to which the asset would normally be subject. We therefore sought views from stakeholders on the expected primary function, or use, of assets that make up an MPI to ascertain whether it met the definition of interconnection or offshore transmission. Please see paragraph 2.20 for a discussion on the definitions within the Act.

2.9. Several key themes emerged both from stakeholder responses to our July 2021 consultation[6] and from internal analysis. These have informed our minded-to decisions.

2.10. Firstly, the asset undertaking multiple activities (L1 in Figure 2 above) has the same function in both models. None of the responses we received stated that L1 in either model would fundamentally be used differently as a function of the MPI model adopted.

[6] Consultation on changes intended to bring about greater coordination in the development of offshore energy networks | Ofgem

2.11. Secondly, important feedback was that the offshore wind farm (OWF) connected to L1 should have priority access to the onshore GB system (or at least the option). This would ensure it has the same access rights as if it were connected via a radial OFTO link. This is also essential in enabling the OWF to comply with requirements under the Contracts for Difference (CfD) scheme. Appropriate access rights for the OWF must therefore be in place.

2.12. Thirdly, the primary use of the asset undertaking multiple activities (L1) will depend on its capacity in relation to the load factors of the connected OWF e.g. whether the cable is oversized compared to OWF. The view of stakeholders – and the outcome of our own analysis - is that the exact usage of L1 would depend on how L1 had been sized in comparison to the OWF load factor. For example, it could be configured to carry excess capacity beyond the output produced by the connecting wind farm and thus allow cross-border flows to be available at maximum wind output.

2.13. On this point, some stakeholders proposed that wind farm load factors are typically up to 50%. Thus, for load factors of up to 50% L1 would be available for cross-border trade more than 50% of the time and could comfortably fall within the 'wholly or mainly' threshold within the interconnector definition.[7] We explore this further below.

Typical offshore wind farm load factors

2.14. Given the importance of load factors in the assessment of primary use of assets, we have reviewed published available data. In 2019, BEIS published the outcome of a study into UK offshore wind farm load factors.[8] It included a review of current offshore wind technologies, and identification of future technologies. Based on an analysis of current operational offshore wind farms and on publicly available information, the report identified load factors ranging from 39% to 47% across a sample of windfarms selected for the study (five in total). The average of these is 42%.

2.15. The study notes that variations in load factors are expected due to the differing turbine technology deployed on individual projects. It is also expected that going forward, load

[7] Electricity Act 1989 Section 4 clause (3E)(b): Prohibition on unlicenced supply etc.
[8] Potential to improve Load Factor of offshore wind farms in the UK to 2035; 15 October 2019. L2C156060-UKBR-R-05-D - potential to improve Load Factors of UK offshore wind to 2035.pdf (publishing.service.gov.uk)

factors will show a positive trend via increases in turbine size and project availability arising from improved operations and maintenance performance, driven by improved accessibility to turbines for technicians to undertake maintenance.

2.16. Historic data, averages, and expected improvements are useful in assessing what we might expect for an OWF that forms part of an MPI, and therefore how this might impact primary use of the cable that is used for both offshore transmission and the conveyance of electricity for cross-border trade. However, rather than rely on industry averages it will be important for Ofgem to specifically consider the expected and – once reporting is available – actual load factors of the windfarm projects that form part of any MPI projects considered in the near-term under our interim regime.

Typical offshore transmission link cable capacities

2.17. From our experience running the OFTO tender process, we know that OFTO transmission assets are typically sized to match the capacity of the OWF. For example, this means that a 1.1GW OWF would have transmission assets sized to convey 1.1GW of electricity at any one time. Our website has more information on a recent Tender Round 9 OWF project (1.1GW Phase 1 OWF load factor with 1.1GW transmission assets) taken forward through Ofgem's OFTO regime[9]. Given typical OWF load factors, in practice (following the logic described above, which is illustrated below) this would mean that in an MPI scenario the cable would be available for cross-border trade more than 50% of the time, noting that flows would need to be managed via commercial arrangements between the connected OWF and interconnector.

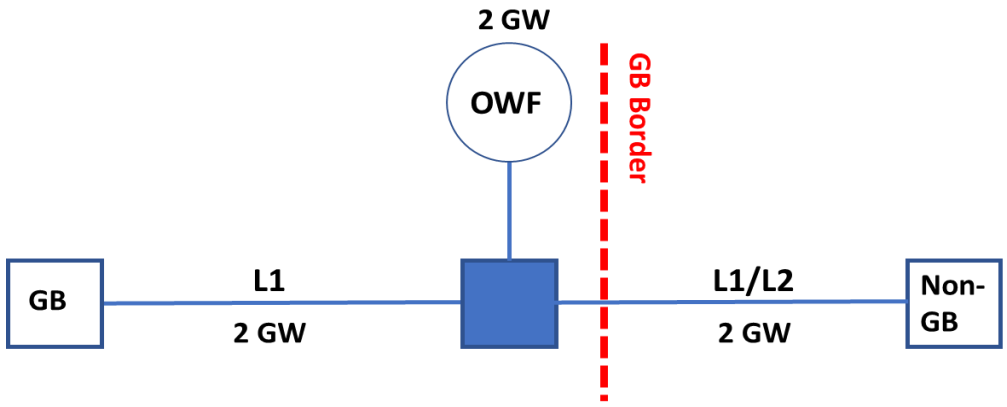
2.18. For illustration, we have used simplistic scenarios below to demonstrate how cable capacity and OWF load factors might impact cable primary use.

Scenarios to illustrate impact of cable sizing and OWF load factors on primary use

2.19. The scenarios are explained below. Load factors in reality will span the full range from 0% to 100% and will be mostly determined by wind speeds and maintenance schedules, but for illustration we have used average annual load factors of 45%.

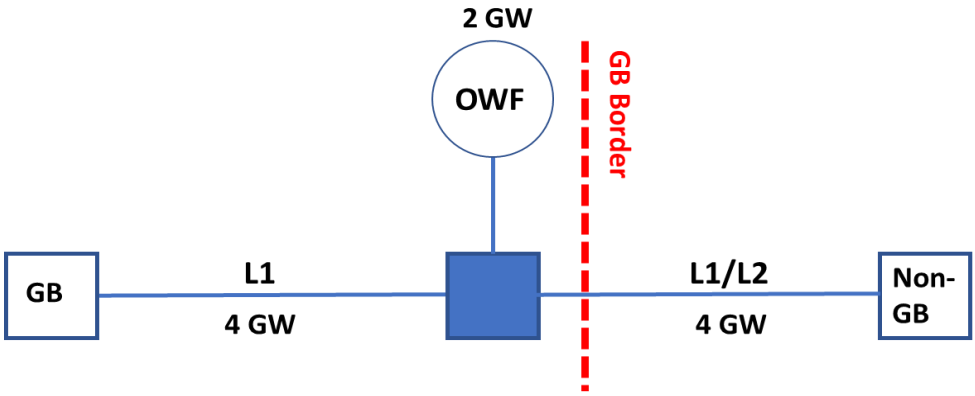
[9] Microsoft PowerPoint - FINAL TR9 Launch slides (ofgem.gov.uk)

Scenario 1 – L1 cable capacity <u>same</u> as OWF installed capacity



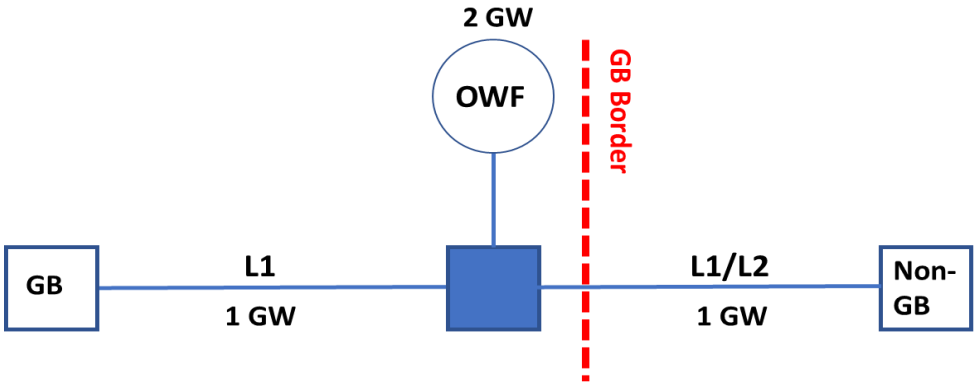
- Both OWF and cable sized at 2GW.
- **Minimum and maximum capacity available for cross-border trade**: If the OWF is at full output, 0GW of cable capacity is available for cross-border trade. If the OWF is at zero output, 2GW of cable capacity is available for cross-border trade.
- **Average capacity available for cross-border trade**: At an annual average OWF load factor of 45%, then average available cable capacity for cross-border trade is 1.1MW or 55% of cable capacity.
- Strong argument for interconnection being the 'primary' use.

Scenario 2 – L1 cable capacity <u>larger</u> than OWF installed capacity



- The OWF sized at 2GW and the cable is sized at 4GW.
- **Minimum and maximum capacity available for cross-border trade**: If the OWF is at full output, 2GW of cable capacity is available for cross-border trade. If the OWF is at zero output, 4GW of cable capacity is available for cross-border trade.
- **Average capacity available for cross-border trade**: At an annual average OWF load factor of 45%, then average available cable capacity for cross-border trade is 3.1GW or 77.5% of cable capacity.
- Strong argument for interconnection being the 'primary' use.

Scenario 3 - L1 cable capacity <u>lower</u> than OWF installed capacity



- The OWF sized at 2GW and cable sized at 1GW.
- **Minimum and maximum capacity available for cross-border trade**: If the OWF is at full output, 0GW of cable capacity is available for cross-border trade. If the OWF is at zero output, 1GW of cable capacity is available for cross-border trade.
- **Average capacity available for cross-border trade**: At an annual average OWF load factor of 45%, then average available cable capacity for cross-border trade is 0.1GW or 10% of cable capacity.
- In this scenario, there is not a strong argument for interconnection being the 'primary' use.

The Electricity Act 1989 (the Act)

2.20. We need to consider the language of the Act to ascertain asset classification (and licensable activity). We need to determine whether the asset should be classified as:

- an "**electricity interconnector**" because it "*means so much of an electric line or other electrical plant as—*
  - i. *is situated at a place within the jurisdiction of Great Britain; and*
  - ii. *subsists wholly or primarily for the purposes of the conveyance of electricity (whether in both directions or in only one) between Great Britain and a place within the jurisdiction of another country or territory*.[10]

or

- a "**transmission system**" carrying out "**offshore transmission**" because:
  - i. it "*is used for conveying electricity from a generating station to a substation, from one generating station to another or from one substation to another*"[11]*; and*
  - ii. *it carries out "the transmission within an area of offshore waters of electricity generated by a generating station in such an area"*[12] *;and*

[10] Section 4(3E) of the Electricity Act 1989: Prohibition on unlicensed supply etc.

[11] Section 4(4) of the Electricity Act 1989: Prohibition on unlicensed supply etc.
[12] Section 6C(6) of the Electricity Act 1989: Licences authorising supply, etc.

iii. *, the offshore line[13] forming the part of this "transmission system" is "constructed wholly or mainly for the purpose of conveying, to any other place, electricity generated by a generating station situated in [...] an area of GB internal waters, an area of the territorial sea adjacent to the United Kingdom or an area designated under section 1(7) of the Continental Shelf Act 1964."*

2.21. It is important to note the implications of the usage of either of the assets. If the asset "subsists wholly or primarily for the purposes of the conveyance of electricity […] between Great Britain and a place within the jurisdiction of another country or territory"[14], then its operator requires an interconnector licence.

2.22. However, the operator will require an offshore transmission licence if the asset's offshore line is "constructed wholly or mainly" for "transmission within an area of offshore waters of electricity generated by a generating station in such an area". [15] In addition, the same person may not be the holder of an interconnector licence and a transmission licence[16] (including the offshore transmission licence).

Minded-to decision: Ofgem will require licence applications for multi-use assets to demonstrate the expected primary or main use of the asset. We recommend, as a minimum, that this includes a simple calculation using the estimated load factor of the connecting OWF and the L1 cable capacity to show how often the asset is expected to be available for cross-border flows compared with OWF output transmission over the lifetime of the asset, which would be monitored by developers and Ofgem on a regular basis.

2.23. **Rationale:** In complying with our duties under the Act it is important that we have the necessary information to inform a decision about granting a licence in relation to an asset that will be used for multiple purposes. For this reason, we will put in place process and will require the developers to submit sufficient and robust evidence to assist us in making that decision.

2.24. Based on engagement and analysis thus far, the only factor that has been proposed to distinguish the asset from requiring either an interconnector or offshore transmission

[13] Section 64(1A)(a) and (b)(ii) of Electricity Act 1989: Interpretation etc. of Part 1
[14] Section 4(3E) of the Electricity Act 1989: Prohibition on unlicensed supply etc.
[15] Section 6C(6) of the Electricity Act 1989: Licences authorising supply, etc.
[16] Section 6(2A) of the Electricity Act 1989: Licences authorising supply, etc.

license (based on definitions in the Act) is the primary use of the asset. Based on information gathered thus far, our view is that the most reliable factor to enable us to determine primary use is the OWF load factor in combination with the cable capacity.

2.25. We recognise that near-term MPI projects are all at different stages of development and while they can generally be categorised into OFTO-led or IC-led models, the precise configuration of each project varies. Further, given that the regulatory and commercial landscape surrounding MPIs is still in flux, and that multiple parties are typically involved in MPIs, we would expect that the configurations presented to us may be subject to change ahead of any firm licence applications.

2.26. It is also important for Ofgem to design an interim MPI framework that is broad in scope to cater for concepts, not specific projects. For this reason, and at this stage of the OTNR, we prefer to reduce the administrative burden on Ofgem and developers. We therefore intend our guidance to be broad enough to allow projects of all configurations to apply, while still providing a useful framework to inform applications.

Primary use reporting

2.27. Pursuant to Section 6 of the Act, Ofgem may grant a licence where an operator's activities fall within the licensable activities set out in Section 4 of the Act. An operator is prohibited from carrying out a licensable activity without a licence; it is a criminal offence. Naturally, if an operator's activities encompass more than one licensable activity, then it is incumbent on Ofgem to assess the most appropriate licence to grant.

2.28. Our July consultation sought views from stakeholders on the practicality of introducing a reporting regime to monitor primary usage, which would ensure Ofgem could determine the correct licence to grant and from then on gain the necessary assurance that the granted licence accurately reflected the activity being undertaken on or through the asset.

Stakeholder views

2.29. Stakeholders suggested Ofgem should exercise regulatory flexibility to accommodate variations that are likely to be seen in MPI configurations at a project level. Three respondents stated there should be consistency with traditional asset regulation, ie a level playing field in regulatory reporting with non-MPI regulated and licensed entities.

2.30. Another factor raised by stakeholders was the need to avoid creating new risks for early MPI projects. Stakeholders stated that any new reporting or administrative requirements must be practical, non-burdensome and add value. A potential concern raised was that an MPI with long-term interconnector capacity contracts might restrict wind generation at peak wind times.

2.31. As we set out in our July consultation we are not aware of any existing formula for calculating the primary function of either an OFTO or interconnector; however, there are regimes from which we could borrow, which would allow us to remain consistent with existing asset regulation.

The cap and floor minimum availability reporting regime

2.32. The Cap and Floor regime requires applicants to achieve a minimum availability level of 80%, which is reported on annually by licensees and then monitored every five years by Ofgem. Developers must submit regular performance reports to Ofgem. If a developer were to fall below the required levels, any necessary floor revenue would be removed for the period of non-compliance.

OFTO Performance Availability Revenue Adjustment Term

2.33. Similarly, there is mechanism in the OFTO framework called The Performance Availability Revenue Adjustment Term (PA_t). The PA_t is used to inform adjustments to the OFTO's revenue depending on performance and places obligations on the OFTO to maintain the assets in line with good industry practice. It is the summation of the Transmission System Availability Incentive, AI_t and Incremental Capacity Incentive Adjustment, ICA_t[17].

2.34. The AI_t rewards OFTOs up to 5 per cent of annual revenue (base revenue plus revenue from incremental capacity) if the annual availability target (set at 98%) is exceeded and penalises up to 10 per cent of annual revenue if availability falls below target. OFTOs are required to submit the monthly capacity weighted unavailability (RWUi,y) every three months and explain when availability falls below target availability in a

[17] Generic Offshore Transmission Owner (OFTO) Licence

month. All data throughout the previous year is required by 1 January, the data is then used to calculate the AI_t.[18]

Other options

2.35. Another option could be to rely on documentation such as long-term capacity contracts for the generators, or the MPI design, where relevant capacities could demonstrate primary use of assets based on cable usage.

The importance of a reporting mechanism for an interim MPI regime

2.36. Undertaking a licensable activity without the appropriate licence is a criminal office. The burden is on the licensee to make sure it does not commit this offence and that it holds the relevant licence, covering its licensable activities.

2.37. Taking account of stakeholder views, internal assessment, and the reporting regimes in existence today, we believe an appropriate approach would be to require an upfront submission/declaration based on a self-assessment by the licensee; then after five years of these annual submissions, we would undertake an in-depth review.

2.38. Table 1 below sets out the type of information we consider would be useful in support of such a process. This information should help enable Ofgem to verify primary use, regulatory classification of assets and make a regulatory decision on licensable activity. We welcome stakeholder views and note that this (among other areas of implementation policy) would be subject to industry consultation in due course.

Table 1: Information being considered for an interim MPI reporting mechanism to verify primary use

Feature	Provisional details	Ongoing considerations
Physical flows (details)	• For each [half-hour] within the most recent completed operational year, reporting of: • direction of physical flow (to GB or from GB)	• Need to agree appropriate within-year temporal granularity for reporting (i.e. half-hourly or other) • Need to determine most practicable way to interpret 'wholly or primarily' definitions within the Act.

[18] Guidance on the offshore transmission owner licence for Tender Round 9 (TR9) Version 2

	• volume of physical flow (MWh) • breakdown of physical flow volume by source i.e. volume from connected windfarm, volume from GB shore, volume from other shore (MWh) • breakdown of physical flow by source as a proportion of [overall flows or availability] (%)	• Need to consider whether MPI operator has access to necessary meter data required to deliver this information (e.g. does it have access to metered generation from the windfarm) • Need to be clear how cable losses are to be reported and considered in review
Physical flows (summary)	• Aggregated summary information to present the operational nature of the MPI annual physical flows across MPI by source (GWh) annual breakdown of physical flow by source as a proportion of [overall flows or availability] (%)	• Need to consider level of detail required for purpose of annual reporting
Timescale	• Annual reporting	• To be tied into other annual reporting processes (related to either OFTO or interconnector reporting) within operational timescales
Format	• Excel (with supporting commentary)	• To be included in overall reporting template

Use of reporting framework

2.39. Given the above, the key requirements of a reporting framework could be:

i. for the licensee to conduct ongoing monitoring and submit annual declarations of the primary or main usage of the asset; and
ii. for Ofgem to undertake an in-depth assessment to understand the given asset usage (based on licensee's annual submission and other data) after a five-year period.

2.40. The objectives for Ofgem seeking this information are as follows:

i. to inform up front decisions concerning the regulatory classification of project assets;
ii. to retain and evaluate evidence on compatibility of observed operational flows with this up-front classification once an MPI has been commissioned; and
iii. to inform an in-depth five-year review of information submitted to assess whether the licensee has complied with the declaration made up front.

Managing risk of asset re-classification post-operation

2.41. It is important to note that putting in place a reporting mechanism is not intended to create uncertainty concerning potential re-classification of a project asset after a

period of time if operational flows are not out-turning as had been expected. However, it is it vital that Ofgem is able to monitor adherence to classification declarations.

2.42. Our current regimes are not designed to capture circumstances of mixed usage or a change in usage. We expect that an enduring regime for MPIs would intend to create the flexibility required to effectively regulate multi-use assets; however, until such a regime is taken forward (if BEIS decide to do so) we need to rely on existing tools, using these as flexibly and effectively as possible.

2.43. We are still developing our understanding of how these assets will function in practice, so naturally we are unable to confirm exactly how we would manage the situation whereby the activity undertaken on an asset switches from the activity against which its licence is granted, into the threshold of another Section 4 licensable activity. Doing so without the required licence would be a breach of the Act.

2.44. If such a situation were to arise, we would consider the factors at play and decide on the most appropriate action on a case-by-case basis. While this is an important consideration for Ofgem, our thinking is ongoing. We will share developments on this when available.

Minded-to decision: We will introduce a reporting mechanism to monitor the asset use over time to ensure that the asset licence granted remains fit for purpose. We would expect to be a measurement based on the method the applicant has used to demonstrate asset usage in the first place eg OWF load factors and cable capacity.

Should asset usage fall out of the parameters agreed at the point of Ofgem granting the licence, we will deal with this on a case-by-case basis to avoid penalising early adopter projects while remaining compliant with our duties under the Act.

2.45. **Rationale:** We recognise the need to be accommodating towards early adopter projects that are demonstrating technologies and projects that will contribute towards the OTNR objectives and wider GB Net Zero goals. In addition, we recognise the need to factor in the variations in wind conditions that might change the actual asset usage from what is intended at the point of application for a licence.

2.46. We believe it is important to minimise granularity in reporting at this stage and instead work collaboratively with industry. We believe a more flexible approach should help support the success of early projects that come forward, while safeguarding consumer interests, and help build an evidence base for any enduring regime.

2.47. We also believe that to ensure industry confidence, to reduce complexity and to avoid excessive administrative costs, it is important to integrate the conclusions of the Integrated Transmission Planning and Regulation project (ITPR)[19] in respect of maintaining regulatory continuity in the approach applied to assets of MPIs. In other words, we do not believe it is appropriate, practical, or feasible to create an interim framework that requires licenced entities to switch licences.

2.48. While we recognise the need to be flexible at this early stage, it is it vital that we are able to monitor adherence to classification declarations and that we are able to take appropriate action informed by evidence. We believe the approach outlined above should achieve this and welcome views from stakeholders.

Licencing additional activities on multi-use assets

2.49. Stakeholders largely supported the notion of transposing relevant obligations across licences in order to regulate MPI activity ahead of any enduring regime. Taking account of stakeholder views and our own analysis, we have identified a number of licence provisions that would need to be amended to allow us to facilitate the additional activities being undertaken by licensees operating assets that are part of MPI projects. Table 2 below includes some of these key licence provisions and focuses on the electricity interconnector standard license conditions.

2.50. We are mindful that some provisions of the electricity interconnector licence reflect the retained European Union (EU) law and / or that some of them need to remain compatible with the relevant provisions of the Trade and Cooperation Agreement between the UK and the EU. Therefore, where appropriate, we will also consider the

[19] Integrated Transmission Planning and Regulation (ITPR) project: final conclusions | Ofgem: In this document we set out our decision on a number of proposals to provide for a more integrated approach to electricity transmission planning and delivery. This follows our draft conclusions consultation in September 2014, and our decisions have been informed by consultation with stakeholders.

relevance of exemptions that can be granted under Standard Licence Condition 12 and pursuant to Article 63 of the retained EU Electricity Regulation.

2.51. The below Table 2 provides a fairly high-level overview of the potential changes that may be required to the Standard Licence Conditions. Once we conceptualise further the specific changes that would have to be implemented to facilitate the operation of the specific pilot phase MPI projects, we should be clearer on exactly what licence changes are appropriate or necessary – across both OFTO and interconnector licences – as well as whether the existing exemption route could be used instead.

Table 2: Identification of key provisions in the interconnector standard licence conditions that will likely require amendment to accommodate MPI activity

Additional activity	Affected section of SLCs	Nature of change potentially required
Granting access/long-term contract to generator	Condition 10 (Charging methodology); Condition 11 (Requirement to offer terms); Condition 11A (Approval of terms)	Granting access to use an interconnector's capacity is not a new activity. It is provided for under C10 and associated Access Rules. It is the nature of access which is changing ie entering into a long-term contract with a connected windfarm is a deviation from this. Condition 10 requires Authority approval of the charging methodology for access to and use of an interconnector, unless otherwise determined by the Authority. The charging methodology is required to be objective, transparent and non-discriminatory. Applying different access and charging arrangements for a connected windfarm will require differential treatment of different user classes. This may require amendment to the principles that the methodology needs to adhere to (or possibly argumentation that differential treatment is a form of due discrimination).
Giving priority access for capacity to the wind farm rather than cross-border trade	Condition 10 (Charging methodology)	If the windfarm is provided with long-term rights, some form of primacy for its usage may be expected. This would need to be reflected in the access rules, with residual capacity being offered to others. Condition 10 provides a route for the Authority to define the access rules and associated charging.

The interconnector would need to factor in this additional electricity (from the OFTO) into its Access Rules	Condition 10 (Charging methodology)	Any 'secure' rights for connected windfarm use will likely need to be reflected in the access rules and effectively reduce the quantity of access available to other parties. Condition 10 provides a route for the Authority to define the access rules and associated charging.
The interconnector would likely require payment arrangements with the generator	Condition 10 (Charging methodology)	We may wish to develop a methodology for determining the interconnector charge to the connected windfarm. C10 provides a route for the Authority to define the access rules and associated charging.
Potential requirement to alter operational patterns of connected windfarm	Condition 19 (Operation and development of the interconnector)	Controlling flows with a connected windfarm also in the picture may require the interconnector operator to have additional control functionalities to adjust flows from the windfarm onto the interconnector as part of control measures for overall flows to onshore connection points. Alternatively, the interconnector operator may need to provide a means of enabling the ESO to adjust the OWF operation.
Potential requirement to accommodate OWF testing and commissioning	Consider accommodating via Access Rules	Interconnector operation may need to be flexible during OWF commissioning to allow for required testing. We will need to consider whether a duty or obligation is required on the interconnector to cooperate.
Potential requirement to align on outage planning	Consider accommodating via Condition 3 (compliance with codes); Additions to C19 (operation and development of the interconnector)	Interconnector maintenance currently scheduled for times that suit the interconnector business. Under the MPI model, there may need to be provisions for coordination of outage planning.

There are other areas of the interconnector license under consideration, including:

- Condition 3: Compliance with codes
- Condition 4: Provision of information to the Authority
- Condition 5: Information regarding technical rules, operation and co-ordinated development
- Condition 6: separation of accounts

- Condition 9: Use of Revenues
- Condition 10: Charging methodology to apply to third party access to the licensee's interconnector
- Condition 11: Requirement to offer terms for access to the licensee's interconnector
- Condition 11A: Approval of terms for access to the licensee's interconnector initial approval of access rules
- Condition 12: Application of licence conditions 9, 10 and 11: Exemption orders
- Condition 19: Operation and development of the interconnector
- Condition 20: Prohibition of discrimination and cross-subsidies
- Condition 22: Eligibility for certification
- Condition 25: Cap & Floor Regulatory Instructions and Guidance Introduction
- Condition 27: Determination of Interconnector Payments term with respect to costs related to the Capacity Allocation and Congestion Management Regulation
- Condition 28: Provision of payments information to the GB System Operator

2.52. We recognise that in addition to amendments to standard conditions (eg amendments to charging methodologies and access rules), we will also need to consider potential project-specific license changes. For example, those related to the cap and floor regime granted to an interconnector licensee that forms part of an MPI. We will consider this in due course where needed in response to specific projects.

2.53. For now, and in this publication, we would like to provide as much confidence as possible to industry as early as possible. Thus, today we are confirming that we will be making the necessary amendments to licence conditions in due course.

Minded-to decision: We will introduce changes to the interconnector standard licence conditions so that interconnectors that form part of an MPI are bound by the appropriate obligations in relation to their additional activities. We will introduce changes to the OFTO standard licence conditions so that OFTOs that form part of an MPI are bound by the appropriate obligations in relation to their additional activities. We note that before an OFTO licence is granted, there is a need for the competitive tender process to be undertaken first. We have not considered that in scope of this document.

2.54. **Rationale:** Having considered input from stakeholders and our own early analysis, our view is that the existing licenses for interconnectors and OFTOs can be adapted to facilitate MPIs in an interim regime. While not an ideal solution for the long term, it does provide a valuable route through which industry can progress MPI projects, increasing coordination of transmission infrastructure in the short term, while building an evidence base to inform any enduring regime BEIS may take forward.

2.55. We would expect those conditions to be designed in conjunction with relevant projects (as they are now for interconnector projects) and that this would take place later in the project development process.

Evolution of pre-existing assets to MPIs

2.56. We sought views in our July consultation on whether we should seek to accommodate the evolution of assets that exist today into MPIs. Based on stakeholder feedback (as set out in our January 2022 document), our understanding is that while MPI projects could in theory evolve from assets that are in existence today, the process would be technically complex and costly. Stakeholders pointed out that this should be a consideration for a future enduring regime so that flexibility and coordination are built into network design, rather than restricted to being designed from the outset.

Minded-to decision: We will not be inviting licence applications for pre-existing assets to evolve into MPIs. While we will not be setting out a process for these, in the interests of being open to early innovation at this stage in the OTNR, we will consider such situations on a case-by-case basis.

We will bear in mind our 2015 ITPR conclusions to maintain continuity of regulatory approach for assets that evolve into multi-purpose projects (which include MPIs).

2.57. **Rationale:** Based on stakeholder feedback as described above, we do not expect any such applications in the near-term and therefore consider our resources are better spent on an interim framework for MPIs that are designed as multi-purpose at the outset. Further, should BEIS decide to take forward an enduring MPI regime, we would expect the evolution of pre-existing assets into MPIs to be considered further when developing that framework.

3. Wider policy considerations

Section summary

This section provides commentary on some of the wider issues raised by stakeholders that are relevant to policy and regulatory decisions but upon which we are not making decisions. This is either because decisions are not required or appropriate by Ofgem, eg where we are clarifying existing requirements, or where the remit for policy development and decision sits with another body, notably BEIS.

We welcome comments from stakeholders on the policy issues discussed and are keen to understand whether there is anything further we should take into consideration as these issues are progressed.

Question 2: Do you have any comments or concerns with the updates provided on wider policy considerations, as set out in Section 3?

MPI ownership structure

3.1. As we set out in our January update publication[20], the question of asset classification is important for a number of reasons. Assets, such as interconnectors or offshore transmission, are classified based on their primary function. We then regulate the activity undertaken on these assets, primarily by way of a licence. Different licence types have different requirements depending on the asset activity being regulated.

3.2. Section 4 of the Act[21] prescribes that certain activities cannot be undertaken unless authorised by licence, which under the current framework would be granted by Ofgem following an application. The Act currently has no provision for a specific MPI activity, and as such, to be able to licence an MPI within the current legal framework we need

[20] Update following our consultation on changes intended to bring about greater coordination in the development of offshore energy networks | Ofgem
[21] Section 4(1) and (2) of Electricity Act 29189: Prohibition on unlicensed supply etc.

to consider how to classify the individual components of an MPI. This would enable us to grant a licence and regulate the activity appropriately.

3.3. A key perceived barrier within the Act is set out under Section 6(2A)[22] which stipulates that it is not possible for the same person to hold an interconnector licence and a transmission (including an offshore transmission) licence or generation licence. While the Act does not prohibit a transmission licence holder also holding a generation licence, the ownership unbundling requirements (Section 10 A-O[23] of the Act) are drafted to prevent common ownership of connected transmission and generation assets. In addition, there are conditions in the transmission licence held by OFTOs that prohibit an OFTO from conducting any business or carrying out any activity other than the offshore transmission business.

Implications for interim MPI ownership structures

3.4. As set out in our July consultation[24], we consider that the overall effect of the relevant Act's provisions is that, under the current legal framework, an MPI would need to operate such that the different components of the MPI are owned and operated by different legal entities, each with its own licence – i.e. separate ownership of the OFTO, interconnector and generation assets.

3.5. Most stakeholders agreed with Ofgem's position set out in the consultation on ownership structure of MPIs within the current framework, while also highlighting the importance of legislative change to better facilitate MPIs in future, particular around ownership of assets. We did not receive any responses from stakeholders that would

[22] Section 6(2A) of Electricity Act 1989: Licences authorising supply, etc: 'The same person may not be the holder of an interconnector licence and the holder of a licence falling within any of paragraphs (a) to (d) of subsection 1' ie … an electricity generation licence, transmission licence, distribution licence, or supply licence.

[23] Section 10A-O of Electricity Act 1989: Electricity transmission and the operation of electricity interconnectors: independence: Under ownership unbundling, the same person or persons are generally not entitled to control a producer or supplier and, at the same time, control or exercise any right over a transmission system operator or transmission system.

[24] Consultation - Changes intended to bring about greater coordination in the development of offshore energy networks (ofgem.gov.uk)

challenge this view. We can therefore confirm that under an interim MPI regime, there will be no exceptions or adaptions to this requirement and the status quo remains.

Migration from Interim to Enduring framework

3.6. Another point we must consider in due course is whether it is appropriate for early opportunity MPIs that come forward in the interim regime to migrate to a future enduring regime (if this is taken forward by BEIS). There will be many factors to consider from a practical perspective but also from a consumer protection perspective. BEIS and Ofgem will need to consider a suitable approach that delivers for industry and consumers, without penalising early opportunity MPI projects that have come forward under the interim framework. This will be considered in due course as policy surrounding any enduring regime is shared by BEIS.

Interaction with Ofgem's Interconnector Policy Review Pilot MPI Cap & Floor Framework

3.7. We published our Interconnector Policy Review (ICPR) decision[25] in December 2021, which confirmed that Ofgem will run a pilot MPI cap and floor application framework to run in parallel to cap and floor Window 3 in mid-2022.

3.8. This will allow eligible MPI projects to apply for a cap and floor to be applied to the interconnector asset of an MPI. Project development will then progress through the interim regime and follow a bespoke process, which will be separate to the usual assessment route for point-to-point interconnectors.

3.9. We anticipate that the development, consultation, and publication of special licence conditions (containing detailed provisions on the cap and floor regime), applicable to these early opportunity MPI projects, will take place in conjunction with project development as this process normally would for interconnectors.

3.10. In respect of standard licence conditions, we anticipate that the granting of an interconnector licence will take place slightly later than is normally the case for electricity interconnectors making an application to the cap and floor regime. This is to

[25] Interconnector Policy Review: Decision (ofgem.gov.uk)

allow us to develop amendments – in consultation with industry – to accommodate the new activities being undertaken on interconnectors that form part of MPIs.

3.11. Similarly, we anticipate there will also be project-specific conditions that will need to be developed to accommodate MPI projects. Again, we will consult industry on these conditions in due course but expect such conditions to sit outside the standard licence conditions and fall rather under the special conditions. Please refer to Section 2.4 for more information on licensing.

3.12. We hope that by running a 2022 pilot cap and floor framework for MPIs we will help inform policy development for any enduring MPI regime, should this be taken forward by BEIS.

Commercial and regulatory barriers – Contracts for Difference

3.13. Responses to the July consultation highlighted the commercial importance of ensuring that Contracts for Difference (CfDs) can still be granted to OWFs connecting to the GB National Electricity Transmission System (NETS) via an interconnector (if using the IC-led model) rather than a transmission licensee.

3.14. This issue has been noted and is being considered by policy teams at BEIS. We will continue to work with government as needed to consider this issue further.

Commercial and regulatory barriers – Charging in IC-led model

3.15. Another area of feedback from the July consultation was around how transmission charging would be considered in the IC-led model. In the IC-led model, the OWF would use the interconnector to convey its electricity to the GB onshore system but as interconnectors are not regarded as part of the GB NETS, there is currently no regulatory mechanism for the OWF to pay Transmission Network Use of System (TNUoS) charges for use of the interconnector and its wider impact on the GB network. We welcome stakeholder views on this topic and have set out below our current thinking.

Ongoing concerns with IC-led model charging arrangements

3.16. While we would expect that, as a minimum, an appropriate and cost-reflective charge would be paid by the OWF to the interconnector for the types of costs that local TNUoS charges would cover e.g. asset maintenance, there are some wider concerns from a regulatory perspective that we are still considering.

3.17. For example, we need to further consider how we ensure transparency and fairness in the charges levied on users of the interconnector, and how we ensure that there are no unforeseen impacts on wider users of the onshore network system. However, we must also be mindful that any interim regime is intended to be a relatively short-term solution and it is likely to apply only to a small number of MPI projects. Therefore, our regulatory approach must be proportionate. Further, we note that as we develop policy underpinning any enduring regime, we will have the opportunity to consider these issues from a longer-term, more holistic perspective.

3.18. Our assessment of these issues and potential mitigations and solutions for the interim regime is ongoing. We will engage stakeholders in due course. We also note that there is an ongoing Ofgem TNUoS review that will be considering transmission charging, for which a draft Terms of Reference is currently being developed. Ofgem recently published an update to stakeholders, which contains more information.[26]

Potential interim arrangement under consideration

3.19. One option we are considering in the interim is whether the cap and floor reporting mechanism (which would be adapted in due course for interconnectors that form part of an MPI) could provide us with sufficient comfort that charges paid to the interconnector by the connected OWF for use of the asset are cost-reflective and not excessively high or low to the extent that parties are penalised by the set-up or unfair market distortions are created.

[26] Microsoft Word - TNUoS Next Steps 250222 (ofgem.gov.uk)

Market Arrangements

3.20. In the consultation we sought views on market arrangements, and how these may influence the choice of MPI models. The majority of responses raised some considerations around different types of market arrangements, i.e. the Home Market (HM) and Offshore Biding Zone (OBZ) models, and linked those with concerns related to capacity calculation and compliance with Article 16(8)[27] of the EU's Electricity Regulation. Below, we explore these concerns, together with other feedback, and present updates on our thinking and next steps. We welcome feedback from stakeholders on the content presented here.

3.21. As highlighted in the consultation, the cross-border nature of MPIs means that we need to understand how the rules which apply in the EU to EU Member States will apply to projects connecting to GB. This is also applicable for non-EU countries we may connect. Cross-border electricity trading between GB and the EU has changed following the UK's exit from the EU and the end of the transition period.[28] Today cross-border electricity trading between GB and the EU is subject to the provisions of the Trade and Cooperation Agreement (the TCA), between the UK and the EU, and new detailed arrangements are being developed together as required by the TCA.[29]

Cross-border market arrangements – market design

[27] Article 16(8) of Regulation (EU) 2019/943 on the internal market for electricity states that the volume of interconnection capacity made available to market participants shall not be limited, with a minimum level of 70% of capacity available for cross-zonal trade. Regulation (EU) 2019/943 is available here: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32019R0943&rid=1

[28] Currently, the trading arrangements on GB's interconnectors to the continental Europe are explicit across all timeframes, while Moyle and EWIC both utilise implicit intraday trading arrangements for the allocation of their capacity (these intraday arrangements have not changed post-Brexit, but day-ahead trade has ceased) and NSL has a bespoke implicit day-ahead trading solution (without other timeframes).

[29] The UK left the European Union on 31 January 2020 at 11:00pm GMT when the UK-EU withdrawal agreement entered into force, and the UK and EU entered into a transition period. During the transition period the UK and all relevant parties in the energy sector were still bound by EU law. Since the end of that transition period on 31 December 2021, cross-border electricity trading is no longer governed by the EU law and the UK has domesticated and amended direct EU legislations via the European Union (Withdrawal) Act 2018. Further, on the 24 December 2020, the UK and the EU agreed the Trade and Cooperation Agreement (the TCA), which took effect provisionally from 1 January 2021 and then entered into force on 1 May 2021. The TCA governs the new relationship between the UK and the EU and contains provisions regarding cooperation on both offshore renewable energy and efficient electricity trade. To achieve the latter, the TCA is especially imposing a duty, delegated to the UK and EU TSOs, to deliver new day-ahead electricity trading model based on the implicit concept of multi-region loose volume coupling (MRLVC).

3.22. The Home Market (HM) model is whereby the OWF forms part of its "home" bidding zone, while the Offshore Bidding Zone (OBZ) approach is whereby a separate bidding zone exists which contains one or more OWFs. We did not receive much feedback following the consultation on the benefits and challenges of the different market models. Instead, respondents focused on the relationship between the market model choice and compliance with Article 16(8) of EU's Electricity Regulation. Feedback suggested that using the OBZ approach might help in solving the issue of providing at least 70% of capacity for the purpose of cross-border trade that arises from the requirements of this Article, as generation capacity sent to either connecting market would be considered cross-zonal capacity. Moreover, a couple of respondents highlighted that market arrangements utilising OBZ might be more efficient overall.

3.23. We noted in the consultation paper that the HM model, such as the model implemented by the Kriegers-Flak CGS, may present challenges in terms of satisfying the requirements regarding priority dispatch, third-party access or capacity availability. We understand that the European Commission's (EC's) guidance[30] accompanying the EU Offshore Renewable Energy Strategy[31] highlights the benefits of the OBZ approach in terms of compatibility with current EU electricity market rules and suggests that OBZ is a relatively more efficient solution. The EC's guidance also indicates that the OBZ approach is the EC's preferred solution.[32] However, that report does also suggest that under this model OWFs are likely to receive reduced revenues with proportionately higher congestion income to be earned by transmission owners. Similar observations are also highlighted in ENTSO-E's position paper on offshore development[33] where it is outlined that the OBZ concept realises a market-efficient solution that better reflects physical congestion and physical flows but will provide less market revenue to OWFs compared to the HM concept which may discourage investment from OWFs. We

[30] EC's *"Guidance on electricity market arrangements: A future-proof market design for offshore renewable hybrid projects"* is available here: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52020SC0273&from=EN

[31] Available here: https://ec.europa.eu/energy/sites/ener/files/offshore_renewable_energy_strategy.pdf

[32] The EC's guidance notes the following: "*To achieve cost-effective decarbonisation and to provide a level playing field for all forms of energy generation and demand response, it is the Commission's view that establishing offshore bidding zones provides a good approach to ensure compliance with the cross-border trading rules. Modelling results and a detailed assessment of the available options show that, from the models under discussion, offshore bidding zones achieve a higher degree of overall efficiency than the 'home zone' approach."*

[33] The ENTOS-E's position paper is available here: https://eepublicdownloads.azureedge.net/clean-documents/Publications/Position%20papers%20and%20reports/entso-e_pp_Offshore_Development_Market_Reg_Issues_201014.pdf

understand that this will happen as the OBZ will take the price of the next-highest bidding zone to which it is connected where transmission capacity is still available as there will be no capacity left for transmission to the highest-priced bidding zone, while the HM model will imply the price always being the same as in the "home" bidding zone. For example, in a scenario with a single connection where "home" bidding zone is importing electricity, an OWF will receive the price of that zone under the HM model, but the price of the exporting zone under the OBZ model, which is lower and thus impacts the revenues.[34]

3.24. The EC's report and ENTSO-E's position paper also recognise the point raised by stakeholders that the OBZ model will satisfy the requirements of Article 16(8) of the Electricity Regulation. The EC's guidance states that OBZ model "*provides a good approach to ensure compliance with the cross-border trading rules*". ENTSO-E's paper notes that "*the HM concept comes with a political dilemma, as it is not compatible with the 70 % requirement* [and] *there is no such dilemma with the OBZ concep*t". In terms of efficiency of market arrangements under the OBZ model, ENTSO-E notes that "*with an OBZ there will always be sufficient transmission capacity available to allow generation, which has an economic value*". Moreover, THEMA report provided to the EC[35] notes that "(…) *because the flows between the offshore generator and the home market are classed as internal under the home market setup and such flows are subordinate to cross-zonal flows under the current* [EU's] *regulatory setup, the system will function inefficiently, likely reducing the welfare* (…)" and states that only prioritising these internal flows (which will not be allowed under the current EU's regulatory setup) might solve potential inefficiencies. To add to that, we are aware of suggestions that to comply with the requirements of Article 16(8), oversizing the cable might be a solution – sources, however, point out that this might make hybrid projects more expensive than needed and would diminish social welfare.[36]

3.25. The Agency for the Cooperation of Energy Regulators (ACER) and the Council of European Energy Regulators (CEER) recently published a joint reflection document[37] on

[34] Please see the following report for further information: https://op.europa.eu/en/publication-detail/-/publication/28ff740c-25aa-11eb-9d7e-01aa75ed71a1/language-en
[35] Available here: https://op.europa.eu/en/publication-detail/-/publication/28ff740c-25aa-11eb-9d7e-01aa75ed71a1/language-en
[36] Please see, for example, the following academic paper for further information: https://www.tandfonline.com/doi/full/10.1080/02646811.2021.2011034
[37] Available here: https://www.ceer.eu/documents/104400/-/-/0ee9681b-fbc9-d367-9099-ad9b258088a7

the EC's offshore strategy and related guidance. These documents broadly support the EC's proposals on integrating offshore renewable energy by using OBZs. ACER and CEER note that the EC's guidance correctly identifies the challenges which will need to be considered when implementing an OBZ model, whilst acknowledging that further analysis is needed to overcome these and identify appropriate solutions.

Next steps

3.26. We note, based on the above observations, that the OBZ solution has some clear benefits in market design and efficiency. However, hybrid offshore projects have not yet been widely established in Europe, so it is difficult to determine best models of trading arrangements based on operational examples. We are aware of concerns suggesting that implementation of an OBZ model may not be ready quickly enough for investment decisions on pre-2030 MPIs, and that legal and technical questions on establishing and governance of OBZ must be answered. We will further explore the potential implementation process and governance arrangements for the two solutions (i.e. HM and OBZ models), as well as looking to understand any potential interactions between the two models. We recognise that there is a need to have certainty on the market arrangements to support investment, thus we would like to understand if there may be any routes through which a step-wise (or another form of) transition from one model to another may be possible. We subsequently want to highlight the dependency on wider cross-border trading arrangements, which was also mentioned by one respondent, and the need for cooperation as well as further discussions on the subject. This is especially relevant when considering trade-offs between explicit and implicit arrangements and noting that cross-border arrangements cannot be agreed or defined unilaterally.

3.27. Therefore, in the next phases of MPI development in the UK we will look to work closely and openly with future project developers, wider industry, other regulatory authorities, and EU institutions. We will look to engage with industry and project parties to better understand the benefits and challenges of different market solutions (i.e. HM and OBZ models) to further inform our thinking of what may be the most appropriate market arrangements for early opportunity projects. We would also like to commit to hold this wider engagement over the coming months.

Development of new procedures for cross-border trade – the TCA & explicit and implicit arrangements

3.28. In response to the consultation one respondent identified that a key factor in the efficient use of MPIs is the use of implicit capacity allocation. Implicit trading is where the capacity on the interconnector and the energy product are bought together, and explicit trading is where the capacity and the energy need to be secured by market participants separately at distinct auctions.

3.29. The TCA requires Transmission System Operators (TSOs) to develop new procedures for the allocation of cross-border capacity on electricity interconnectors at the day-ahead timeframe, based on the concept of multi-region loose volume coupling (MRLVC). The overall objective of the new procedures is to maximise the benefits of trade. The UK and EU TSOs conducted a cost-benefit analysis (CBA)[38] which touches upon the possible impacts of the new trading arrangements on assets such as MPIs.

3.30. The CBA recognises that the development of MPIs will require trading arrangements which support efficient energy pricing and capacity utilisation. The CBA also notes that, from a purely technical perspective, both implicit and explicit trading would be possible under both HM and OBZ solutions. Under an explicit HM design, cross-zonal capacity forecasts might be somewhat easier as there are fewer borders involved. Whereas due to the number of bidding zones under an explicit OBZ model it may become very difficult to forecast cross-zonal flows. Despite being technically possible, explicit trading arrangements under both a HM or an OBZ solution are deemed to be less efficient than implicit and may lead to underutilisation of the asset and adverse flows. As to implicit trade, the CBA notes that implementing efficient trading arrangements under both a HM or an OBZ model would be possible and interactions between MRLVC and Single Day Ahead Coupling (SDAC) must be considered carefully.

3.31. Our view is that explicit trading is less efficient than implicit and, especially under OBZ model, explicit auctions will most likely lead to suboptimal results as it might be difficult to optimise socio-economic efficiency in a complex system with multiple OBZs.[39] It is also understood that under explicit arrangements traders would need to forecast capacity prices and direction of flow across multiple interconnectors as well as anticipate the volume of capacity available across MPIs, which will be a function of the

[38] Both analytical results and summary report are available here: https://consultations.entsoe.eu/markets/cost-benefit-analysis-of-multi-region-loose-volume/
[39] We base our understanding on, among other sources, the following academic paper: https://www.tandfonline.com/doi/full/10.1080/02646811.2021.2011034

wind output that will have to be forecasted by the traders. This will not be the case under implicit allocation where the actual bids of the OWF are envisaged to be used as an input to the allocation algorithm. In addition, the development and implementation of implicit MRLVC will have its own challenges, namely the forecast accuracy of the bordering bidding zone flows as well as wider interactions with SDAC, which need to be taken into account.

Next steps

3.32. Throughout the development and implementation of the new cross-border trading arrangements required by the TCA, or with other jurisdictions outside of the EU, we encourage the continued consideration of future offshore assets such as MPIs. To support the wider development of these projects in the North Sea region, it is important to ensure their complexities are feeding into discussions on market arrangements at an early stage. We will continue to engage and closely cooperate with the relevant regulatory authorities and other relevant international bodies, such as ACER and CEER, to support further discussions and developments in this space.

Margin Available for Cross-Zonal Trade

3.33. Article 16(8) of the EU's Electricity Regulation states that the volume of interconnection capacity made available to market participants shall not be limited, with a minimum level of 70% of capacity available for cross-zonal trade. MPI projects linked to EU Member States have to consider how Article 16(8) is applied in the EU and how its provisions could be satisfied. On this topic, five respondents suggested that the requirements of this Article would influence the best choice of MPI model. Three suggested that derogations from this requirement should be applied to MPIs where necessary, and that these would likely be needed for the HM model. In turn, three respondents suggested that the OBZ model would eliminate the issue that arises from the requirements of this Article.

3.34. We agree with the respondents that the choice of the future MPI model linked with the EU Member States is likely to be influenced by EU legislation and in particular the requirements of Article 16(8). We also agree that the HM model would most likely require derogations from that Article, while the OBZ model has the potential to eliminate the issue that arises from these requirements. It must be noted that, following UK's exit from the EU, Article 16(8) has now been removed from domestic retained EU law, so it is no longer part of domestic legal framework in GB. It is also

worth highlighting that there are new provisions in place, namely Article 311(1) of the TCA which requires that the maximum level of capacity of electricity interconnectors is made available, respecting the (i) need to ensure secure system operation; and (ii) most efficient use of systems. We believe it is essential to determine how these new provisions are satisfied.

Next steps

3.35. These considerations are not exclusive to the discussions around MPI projects alone but are very much linked with the future cross-border trading arrangements being developed under the TCA. We consider this as an area where further work is required, and we look forward to continuing to work with parties involved in the development of these trading arrangements to identify the best way forward.

Priority dispatch and curtailment

3.36. In GB, under Article 12 of the retained Electricity Regulation 2019/943, which formed part of the EU's "Clean Energy Package", new renewable generators cannot benefit from priority dispatch (subject to a *de minimis* exemption). Article 13 of the domestic retained Electricity Regulation also requires renewable generators to be curtailed only as a last resort.

3.37. On the topic of Article 12, three respondents said that new offshore wind farms would no longer benefit from priority dispatch. One went on to say that priority dispatch would be incompatible with an OBZ model as non-discriminatory access should be granted on interconnection assets. Building on this point, it was raised by two respondents that priority dispatch would not be necessary in a future where a large share of the electricity system is made up of renewable energy sources.

3.38. In respect of Article 13, two stakeholders raised the point that it requires renewable generators to be curtailed only as a last resort, which will have an impact on the MPI model chosen. It was also noted by another that this article obligates TSOs to limit redispatch for renewable generators to 5%, unless electricity from power-generating facilities using renewable energy sources or high-efficiency cogeneration represents more than 50% of the annual gross final consumption of electricity and that this will need to be monitored on an ongoing basis to ensure the Clean Energy Package thresholds are met.

3.39. We note that one respondent suggested that priority dispatch and curtailment under the HM model will work differently depending on the choice between OFTO-led and IC-led model. The respondent said that under the OFTO-led model an OWF would have the same firm access to the GB bidding zone as an onshore generator and would be curtailed by direct Balancing Mechanism actions. The interconnector capacity allocation process would then have to take into account the forecast of unused capacity on the OFTO assets, thereby prioritising the OWF's home market access over cross border flows. On the other hand, according to the received feedback, under the IC-led model, an OWF would have to secure the required capacity from the interconnector auctions to access markets. The OWF would not be directly curtailed but market actions/trading tools would be applied via the interconnector. The OWF and third-party users would compete for the limited capacity, likely to aim to maximise cross border flows.

3.40. The respondent also highlighted the relationship between curtailment of interconnectors and the future cross-border trading arrangements developed under the TCA as the TCA requires development of cross-border capacity calculation methodologies in all timescales. It was noted that currently National Grid ESO uses a combination of cross-border trading and Intraday Trading Limits to manage existing interconnector capacity to ensure safe system operation.

Next steps

3.41. We acknowledge the above feedback, and the interactions between the requirements of Articles 12 and 13 and the different options for market models. Therefore, we will continue to consider these concerns further as we look to develop potential options for market arrangements. We also recognise that some of the challenges highlighted by the respondents' feedback again identify links between MPI market arrangements and the future cross-border trading arrangements being developed under the TCA. We will continue to encourage parties to continue to consider how the requirements of MPIs can be factored into the broader discussions on capacity calculation (including discussions on market-based tools such as redispatch and countertrade) under the TCA. We will also commit to engagement with all relevant parties to identify the best approach going forward.

4. Appendices

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Appendix 1: Glossary

A

ACER
Agency for the Cooperation of Energy Regulators

(The) Authority
The Gas and Electricity Markets Authority established by section 1(1) of the Utilities Act 2000. The Authority governs Ofgem.

B

BEIS
Department for Business, Energy & Industrial Strategy

C

Cap and Floor
Regulates how much money a developer can earn once in operation, providing developers with a minimum return (floor) and a limit on the potential upside (cap) for a 25-year period.

CEER
Council of European Energy Regulators

CfD
Contract for Difference

D

Developer
The Tender Regulations define a 'developer' as 'any person within section 6D(2)(a) of the Electricity Act 1989'. Section 6D(2)(a) of the Electricity Act defines such person as 'the person who made the connection request for the purposes of which the tender exercise has been, is being or is to be, held'. In practice, such person is also the entity responsible for the construction of the generation assets and, under Generator Build, the Transmission Assets. In this document, 'Developer' is also used to refer to developers of electricity interconnectors.

E

Electricity Act or the Act

The Electricity Act 1989 as amended from time to time.

ENTSO-E

European Network of Transmission System Operators for Electricity

ESO

Electricity System Operator

H

HM

Home market

I

Interconnector Licence

A licence authorising a person to participate in the operation of an electricity interconnector.

ICPR

Interconnector Policy Review

ITPR

Integrated Transmission Planning and Regulation

M

MRLVC

Multi-region loose volume coupling

MPI

Multi-purpose interconnector

N

NETS

National Electricity Transmission System

O

OBZ

Offshore bidding zone

Ofgem

Office of Gas and Electricity Markets. Ofgem, "the Authority" and "we" are used interchangeably in this document.

OFTO
Offshore transmission owner

OFTO Licence
The licence awarded under section 6(1)(b) of the Electricity Act following a tender exercise authorising an OFTO to participate in the transmission of electricity in respect of the relevant Transmission Assets. The licence sets out an OFTO's rights and obligations as the offshore transmission asset owner and operator.

OTNR
Offshore transmission network review

OWF
Offshore windfarm

S

SDAC
Single Day Ahead Coupling

T

TCA
The EU-UK Trade and Cooperation Agreement

TNUoS
Transmission network use of system. TNUoS charging arrangements reflect the cost of building, operating and maintaining the transmission system.

TSO
Transmission system operator

Appendix 2 – Privacy notice on consultations

Personal data

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

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

1. The identity of the controller and contact details of our Data Protection Officer

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

2. Why we are collecting your personal data

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

3. Our legal basis for processing your personal data

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

3. With whom we will be sharing your personal data

(Include here all organisations outside Ofgem who will be given all or some of the data. There is no need to include organisations that will only receive anonymised data. If different organisations see different set of data then make this clear. Be a specific as possible.)

4. For how long we will keep your personal data, or criteria used to determine the retention period.

Your personal data will be held for ***(be as clear as possible but allow room for changes to programmes or policy. It is acceptable to give a relative time e.g. 'six months after the project is closed')***

5. Your rights

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

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

6. Your personal data will not be sent overseas (Note that this cannot be claimed if using Survey Monkey for the consultation as their servers are in the US. In that case use "the Data you provide directly will be stored by Survey Monkey on their servers in the United States. We have taken all necessary precautions to ensure that your rights in term of data protection will not be compromised by this".

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

8. Your personal data will be stored in a secure government IT system. (If using a third party system such as Survey Monkey to gather the data, you will need to state clearly at which point the data will be moved from there to our internal systems.)

9. More information For more information on how Ofgem processes your data, click on the link to our "Ofgem privacy promise".