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Consultation

Interconnector policy review: Working Paper 4 – Multiple-purpose Interconnectors

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We are consulting on the analysis, proposed conclusions, and initial proposals from workstream 4 of the interconnector policy review. This workstream looks at whether the final conclusions of our ITPR project on Multiple-purpose Interconnectors (MPIs) remain fit for purpose and whether our regulatory approach for point-to-point interconnectors, the cap and floor regime, could potentially be used for the regulation of MPIs. We would welcome views from a range of stakeholders.

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.

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Executive summary

In August 2020, Ofgem launched a review of its regulatory policy and approach to new electricity interconnectors. The objectives of the review are two-fold: firstly, to establish whether there is a need for further GB interconnection capacity beyond those projects currently with regulatory approval; and secondly to consider Ofgem's approach to the regulation of future GB interconnection. The review has been broken down into four workstream s considering specific aspects of our regulatory policy and decision-making.

This working paper summarises our analysis, findings, and provisional recommendations from workstream 4 – Multiple-purpose Interconnectors. In this workstream we have looked at whether the final conclusions of our Integrated Transmission Planning and Regulation (ITPR) project on MPIs remain fit for purpose. We also considered whether our regulatory approach for point-to-point (P2P) interconnectors, the cap and floor regime, could potentially be used for the regulation of MPIs. We have considered this alongside our ongoing work on offshore coordination with government, National Grid ESO (NGESO) and others through the Offshore Transmission Network Review (OTNR).

Based on the results of engagement with stakeholders and our internal analysis, we are proposing the following conclusions and initial proposals:

- We acknowledge the benefit in the development of MPIs, in particular in combining cross-border interconnection with offshore wind developments. MPIs can potentially reduce the total investment and number of landing points required for interconnectors and offshore renewables, and can help to facilitate the development of energy systems in a more coordinated way.

- The conclusions of ITPR are no longer likely to provide sufficient regulatory certainty and clarity to support the consistent development of new MPI projects. We believe that providing that certainty for developers and investors is becoming increasingly important as the energy landscape in the North Sea is changing.

- The cap and floor regime could be, in principle, a suitable mechanism to support the development of the interconnector part of early MPI projects under consideration through the OTNR, and potentially future MPIs too. Therefore, we propose to further explore the applicability of this regime, any potential changes needed, and its interactions with other potential regulatory options, as well as with the existing cap and floor for P2P

interconnectors. However, we also recognise that as new MPI models are developed, exploring alternative mechanisms might be required.

- We believe that a shift towards a more system-wide and coordinated approach to identify new MPI projects may be preferable in the future. Such approach could envisage a more prominent role for National Grid Electricity System Operator (NGESO) to help identify the location, capacity and timing of new projects. In this respect, we consider that the ITPR conclusions regarding enhancing the role of the system operator do remain fit for purpose.

- We should further explore key topics such as impacts of different market arrangements, charging regime, the legal definitions of an MPI and another topics to remove key barriers to the development of these projects, noting that the OTNR will address some of these in more detail.

We are now seeking stakeholder feedback on our analysis, conclusions and initial proposals through this public consultation. We will then consolidate the findings across each work streams in a single decision paper, which will provide our final recommendations for the future regulation of MPIs in GB.

1. Introduction

Context

1.1. Electricity interconnectors are the physical links that allow the transfer of electricity across borders. The cap and floor regime is the regulated route for electricity interconnector developers in Great Britain. We decided to roll out the cap and floor regulatory regime to new near-term electricity interconnectors in August 2014 to incentivise the delivery of further cross-border infrastructure.

1.2. Before the cap and floor regime was introduced, a limited number of electricity interconnectors had been either built or proposed: IFA (2GW) to France, Moyle (0.5GW) to Northern Ireland, BritNed (1GW) to the Netherlands, and the East West interconnector (0.5GW) to the Republic of Ireland. These interconnectors were mostly developed as standalone projects on a merchant basis.

1.3. We recognised that there was benefit in further interconnection and therefore a need to develop a regulated regime for electricity interconnectors to incentivise further development. We proposed a cap and floor regime initially for the Nemo Link interconnector (1GW) to Belgium in 2013[1], and more broadly as an enduring regime in 2014[2].

1.4. We have subsequently held two cap and floor application windows in 2014 and 2016, and have awarded a cap and floor regime in principle to nine interconnectors totalling 10.9GW in cross-border capacity. If all of these projects go ahead, alongside existing interconnectors and approved projects under development on a merchant basis, GB interconnection capacity could increase to 15.9GW.

1.5. We have committed to reviewing our regulatory policy and approach through the interconnector policy review ahead of any further cap and floor application windows. This is to ensure that both further interconnection, and the regulatory framework for delivery, remain in

[1] Cap and Floor Regime for Regulated Electricity Interconnector Investment for application to project NEMO (2013): https://www.ofgem.gov.uk/publications-and-updates/cap-and-floor-regime-regulated-electricityinterconnector-investment-application-project-nemo

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

consumers' best interests. We consider that now is the right time for this review for a number of reasons as set out in our August 2020 open letter to interested stakeholders[3].

1.6. We are also undertaking our review in the context of Government's net-zero target for carbon emissions by 2050. In December 2020, the Department for Business, Energy, & Industrial Strategy (BEIS) published its Energy White Paper[4] setting out how the UK will clean up its energy system to reach net-zero. In the Energy White Paper BEIS committed to working with Ofgem, developers and European partners to realise at least 18GW of interconnector capacity by 2030.

Scope of the review

1.7. The first objective of the interconnector policy review is to establish whether there is a need for further GB interconnection capacity beyond those projects currently with regulatory approval. If so, the second objective of this review is to consider Ofgem's approach to the regulation of future GB interconnection.

1.8. We decided to deliver this review through four workstreams:

- WS1 – Review of the cap and floor regime to date
- WS2 – Socio-economic modelling
- WS3 – Review of the wider impacts of interconnection
- WS4 – Multiple Purpose Interconnectors

1.9. We decided to use a targeted engagement approach in order to maximise value from stakeholder input and invited interested stakeholders to notify us of their interest in the interconnector policy review in our August 2020 open letter. We have subsequently engaged with stakeholders through workstream groups and stakeholder forums.

[3] Open letter: Notification to interested stakeholders of our interconnector policy review (2020): https://www.ofgem.gov.uk/system/files/docs/2020/08/open_letter_-_interconnector_policy_review.pdf
[4] Energy white paper: Powering our net-zero future: https://www.gov.uk/government/publications/energy-white-paper-powering-our-net-zero-future

Scope of workstream 4

1.10. The objective of workstream 4 is to review whether the final conclusions of our ITPR project on MPIs remain fit for purpose, to consider options for the regulation of MPIs and how this might interact with our regulatory approaches to P2P interconnectors.

1.11. To inform this workstream we issued a call for evidence to those stakeholders that noted an interest in workstream 4 of the interconnector policy review in response to our August 2020 open letter. In addition to our call for evidence, we also sought external stakeholders' input by attending relevant industry forums. When requested, we organised individual follow up sessions with individual stakeholders.

1.12. Through our stakeholder engagement we received a substantial amount of information. In this working paper we have tried to distil feedback into common themes and present those that we consider most relevant. In response to this consultation stakeholders are welcome to raise points that we might have missed or should be considered further. We have reviewed feedback received to date and formed our own conclusions with respect to the objectives of workstream 4 and presented some initial proposals for our next steps on MPIs.

1.13. Throughout this document we present a number of initial proposals; these are summarised in Section 4. Following consultation, we will build on these in response to stakeholders' feedback and confirm our proposals in our final decision on the interconnector policy review. In addition, any proposals or recommendations for change that are discussed in our working paper consultations will not be retrospectively applied, and will not affect or change aspects of the existing cap and floor regime that applies to projects that we have already approved.

1.14. This workstream is complementary to the work being undertaken on MPIs in the ONTR. We are working carefully across relevant teams within Ofgem and BEIS to ensure that our engagement with stakeholders and consideration of policy issues is coherent and complementary to each programme of work. The outcomes of workstream 4 should therefore be considered alongside our ongoing work on offshore coordination with government, NGESO and others.

What are we consulting on?

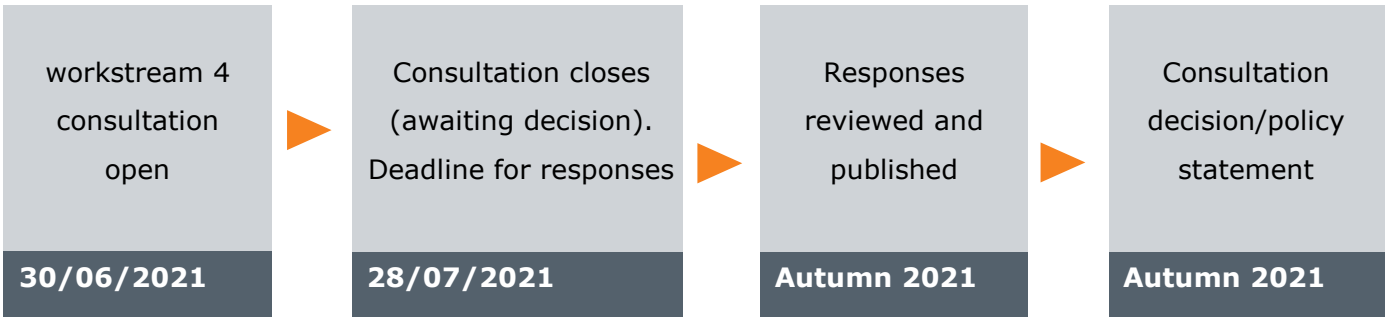
1.15. The purpose of this working paper is to gather views from stakeholders on our preliminary conclusions and initial proposals for workstream 4 of the interconnector policy review. Consultation questions are summarised in Section 5.

Consultation stages and next steps

1.16. This consultation is one of four working papers covering each of the workstreams. Based on the responses received and drawing upon each working papers, we will publish our decision paper presenting our final recommendations in relation to the regulation of MPIs.

1.17. Subject to the responses received and our further analysis, we aim to publish our decision paper in Autumn 2021.

Figure 1: Consultation stages



How to respond

1.18. 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.

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

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

Your response, data and confidentiality

1.21. 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.

1.22. 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.

1.23. If the information you give in your response contains personal data under the General Data Protection Regulation (GDPR) and domestic legislation on data protection, the Gas and Electricity Markets Authority will be the data controller for the purposes of GDPR. Ofgem uses the information in responses in performing its statutory functions and in accordance with section 105 of the Utilities Act 2000. Please refer to our Privacy Notice on consultations, see Appendix 2.

1.24. 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

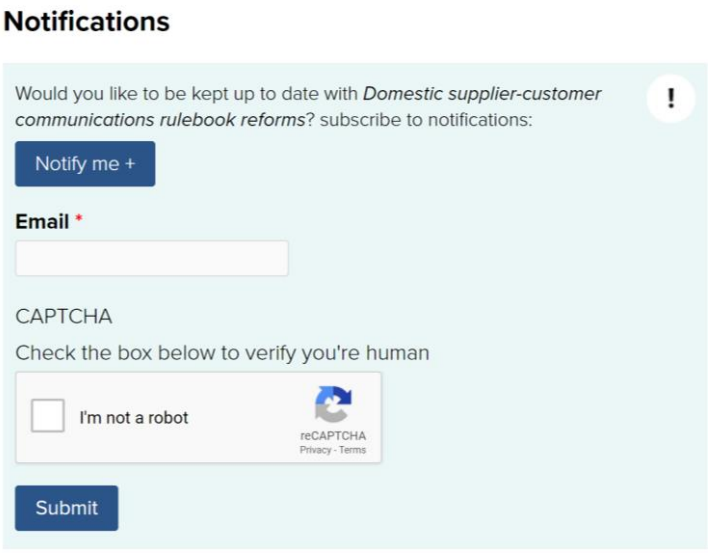
1.25. We believe that consultation is at the heart of good policy development. We welcome any comments about how we've run this consultation. We'd also like to get your answers to these questions:

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?

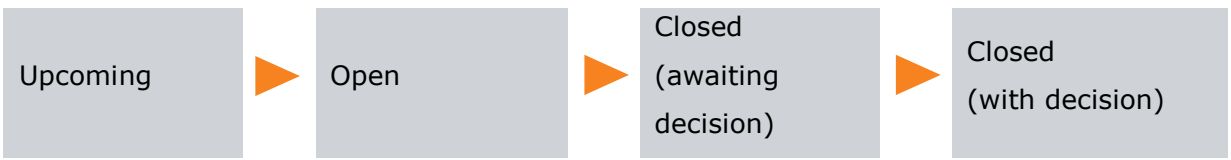
1.26. Please send any general feedback comments to stakeholders@ofgem.gov.uk

How to track the progress of the consultation

1.27. 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.



1.28. 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:



2. Specific context for our work on MPIs

Section summary

This section summarises the specific context of MPIs and the work Ofgem has undertaken to date on this topic.

2.1. An MPI is a project that serves an additional purpose alongside cross-border interconnection, such as to combine interconnection with the transmission of offshore wind. MPIs could play an important role in enabling the buildout of offshore renewables to meet our decarbonisation policy ambition and targets. As our seas become more crowded, ongoing efforts to better coordinate the development and delivery of offshore infrastructure become more important.[5] The potential for MPIs to reduce the number of transmission assets required to connect future offshore renewables, and consequently reduce investment costs and environmental impacts, is becoming increasingly relevant.

2.2. There are currently no operational MPI projects which connect to the GB market, although there are various projects in the development stage; some of these projects have come forward with the aim of being operational by late 2020s. Since an MPI would combine onshore or offshore transmission with interconnection assets, it is currently unclear which regulatory approach would apply to which part(s) of an MPI.

Integrated Transmission Planning and Regulation (ITPR) project

2.3. The concept of an MPI is not a new one. We considered the regulatory aspects of multiple-purpose projects (MPPs) in our ITPR project, which concluded in March 2015.[6] In our ITPR conclusions, we signalled the importance of clarifying the regulatory approach for Multiple Purpose Projects (MPPs) to encourage and enable investment in flexible, coordinated network solutions. We also discussed the merits of increasing flexibility in how we regulate different

[5] For more detailed information on the potential benefits from coordination of offshore transmission infrastructure, please see: https://www.nationalgrideso.com/future-energy/projects/offshore-coordination-project

[6] ITPR: https://www.ofgem.gov.uk/publications/integrated-transmission-planning-and-regulation-itpr-project-final-conclusions

asset types to bring about benefits for consumers. The MPI concept falls within that of an MPP discussed in the ITPR project, hence are captured by its conclusions.

2.4. The ITPR project concluded that we should maintain continuity in the regulatory treatment of an existing transmission asset if it evolves into an MPP. In such cases, we stated that we would look to ensure the GB regulatory arrangements don't require a change in ownership, and that owners of an existing asset are at least as well off from forming an MPP, providing the MPP is economic and efficient. For any project which would be an MPP from the outset, we noted that we would work with the relevant parties to determine the most appropriate treatment. We highlighted that treatment of MPPs would also need to consider European Union (EU) requirements, for example requirements relating to unbundling and third-party access. Our current work builds upon the ITPR conclusions rather than replacing or duplicating them.

2.5. Since the ITPR conclusions were published we have had ongoing bilateral discussions with potential MPI project developers. These discussions have focussed on identifying potential regulatory pathways and commercial models for their development. As the role that MPIs could potentially play in supporting government ambitions has become increasingly clear, for example through the OTNR, interest in MPIs has notably increased.

Offshore Transmission Network Review (OTNR)

2.6. The OTNR was launched in July 2020 to support the Government's ambition of delivering net-zero emissions by 2050, in which offshore wind is expected to play a key role. [7] The current approach to offshore transmission was developed when the offshore wind target was 10GW by 2030. The increased target of 40GW by 2030, as set out in Prime Minister's Ten Point Plan in November 2020, is likely to require an alternative approach to offshore transmission[8].

2.7. The aim of the OTNR is to ensure that the transmission connections for offshore wind generation are delivered in the most appropriate way, considering the increased ambition for

[7] For more information, please visit: https://www.gov.uk/government/groups/offshore-transmission-network-review
[8] For more information, please visit: https://www.gov.uk/government/publications/the-ten-point-plan-for-a-green-industrial-revolution

offshore wind to achieve net-zero. This will be done with a view to finding the appropriate balance between environmental, social and economic costs.

2.8. It is recognised that MPIs could have an important role to play in supporting the OTNR objectives and a dedicated workstream within the OTNR has been set up to explore MPIs in detail. Ofgem is supporting this workstream and will be publishing a consultation on this through the OTNR programme in due course. This will be followed by policy proposals in late 2021, which will allow the OTNR to consider the final recommendations and stakeholder feedback provided through this workstream 4 of our interconnector policy review.

2.9. The MPIs workstream within the OTNR aims to explore amendments to the current regulatory and legal framework to facilitate MPIs. It will do this in two ways: incremental changes to the existing framework for the short-term mobilisation of MPIs; and through legislative change with a view to potentially changing the regulatory framework and regimes via amendments to the Electricity Act 1989.

2.10. The former is largely captured by the changes being explored by Ofgem through the Early Opportunities workstream. The Early Opportunities workstream seeks to identify amendments to the current regulatory framework that would facilitate new concepts that bring coordination and support the development of 'Pathfinder Projects', which could potentially include MPIs. We will continue to work closely across the two programmes to align our thinking, share stakeholder input, and ensure coherent proposals across this policy review and the OTNR.

European offshore energy workstreams

2.11. The focus on offshore coordination concepts, such as MPIs, has increased not only domestically but also in neighbouring countries. It is widely expected that the significant abundance of offshore renewable energy resources in the North Sea region will be key to achieve the energy objectives of numerous European countries. Longstanding engagement amongst EU member states at various forums on the potential of greater coordination has similarly increased in recent years.

2.12. In 2016, a joint political declaration established the North Seas Energy Cooperation (NSEC)[9] forum, aimed at facilitating the cost-effective deployment of offshore renewable energy, in particular wind, and promoting interconnection between the countries in the region. The UK, including Ofgem, have previously contributed to NSEC working closely with relevant ministries and National Regulatory Authorities (NRAs) from neighbouring countries. Following the UK's departure from the EU, the UK is no longer a member of NSEC. However, the Trade and Cooperation Agreement (TCA) between the EU and the UK commits the UK and the EU to cooperate in the development of offshore renewable energy, including building on NSEC to create a specific forum for technical discussions in relation to offshore grid development and large renewable energy potential of the North Seas region.

2.13. In 2019 the European Commission announced the European Green Deal[10], a set of policy initiatives with the goal to make Europe climate neutral by 2050. Subsequently in November 2019 they published an EU Strategy to harness the potential of offshore renewable energy for a climate neutral future. This strategy sets out an ambitious offshore renewable energy target of 300GW of offshore wind and 40GW of ocean energy by 2050, a significant ramp-up from current levels. It sets out a number of areas for policy and regulatory change in order to deliver this, including clearer regulatory frameworks for offshore renewables and offshore grid development. These initiatives add material weight to the importance of work being undertaken in forums such as NSEC.

[9] For more information, please visit: https://ec.europa.eu/energy/topics/infrastructure/high-level-groups/north-seas-energy-cooperation_en
[10] For more information, please visit: https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal_en

3. Workstream 4 analysis

Section summary

This section summarise the responses received to our call for evidence, our analysis and our initial proposals.

Questions

Question 1: Do you agree with the approach we have taken to workstream 4?

Question 2: Do you think we have missed any important benefit that MPIs could deliver?

Question 3: Do you agree with our views on the conclusions of the ITPR?

Question 4: Do you agree with our proposal to further explore the applicability of the cap and floor regime for the MPI projects currently under consideration? Please provide supporting information if available.

Question 5: Do you agree with our proposal to also consider alternative regulatory models for MPI projects in the long term? What models should we consider? Please provide supporting information if available.

Question 6: What other wider policy issues or aspects related to MPIs should we be aware of?

Methodology

3.1. To inform the content and outcomes of workstream 4, we used a targeted engagement approach. Our August 2020 open letter invited interested external stakeholders to notify us of their interest in the review and each workstream. A total of 65 stakeholders indicated their interest in the policy review as whole, of which 51 expressed interest in workstream 4 specifically. Interested stakeholders included interconnector project developers, generators, investors, industry and TSOs.

3.2. In February 2020 we issued a call for evidence to the workstream 4 external stakeholder group seeking views on a number of questions relating to MPIs. A total of 12 stakeholders responded to our call for evidence for workstream 4. We also sought wider external stakeholder input by attending relevant industry forums. When requested, we organised individual follow up sessions with individual stakeholders.

3.3. The remainder of this section summarises stakeholder responses to each of the questions we asked in the workstream 4 call for evidence, which we have reported in this document. For clarity, we have clustered the responses into five main groups: (i) the benefits of MPIs, (ii) our ITPR conclusions, (iii) potential application of a cap and floor regime to MPIs; (iv) MPI models and alternative regulatory approaches; and (v) other policy issues.

3.4. **We welcome further stakeholder views or responses on the same questions we have already asked through our workstream 4 call for evidence.** A summary list of the questions of our call for evidence can be found in Appendix 1.

The benefits of MPIs

3.5. Below we summarise the respondents views on the following question:

In assessing an MPI project seeking a regulated regime, what are the benefits delivered to consumers, and how should we quantify them?

3.6. Respondents believe that MPIs can deliver significant benefits to consumers compared to individual offshore wind connections and P2P interconnectors, by combining the advantageous elements of both assets in one project.

3.7. Stakeholders suggested that MPIs can strengthen UK's security of supply by creating new routes for importing electricity when needed whilst supporting the development of domestic renewable energy generation at the same time. Additionally, similarly to P2P interconnectors, MPIs can provide enhanced system flexibility and stability services to the ESO.

3.8. From an economic perspective, respondents suggested that MPIs can deliver substantial infrastructure cost savings by sharing the costs of developing, building and maintaining transmission assets across multiple parties, reducing the need for multiple cables and onshore connections and increasing the asset utilisation rate. MPIs are also believed to reduce overall system and constraint costs that the substantial increase of renewable energy generation in the North Sea region might generate in the future.

3.9. MPIs can also play an important role in reaching UK's climate and energy targets by unlocking additional zones or areas to develop offshore generation along the route of the interconnector parts of an MPI. Additionally, by saving costs and processes associated with the separate and uncoordinated construction of offshore wind and interconnection, MPIs can accelerate the deployment of low carbon offshore generation by reducing development timelines.

3.10. Finally, MPIs could have positive social and environmental impacts on coastal communities and areas by significantly reducing landfall points from offshore energy infrastructure. This is particularly pertinent when considering government offshore renewable energy ambitions. Another result of this may be a reductions in planning and consenting delays and therefore project uncertainties, with a resulting positive impact on costs and delivery timelines.

3.11. We received limited and mixed feedback on how the benefits of MPIs could be assessed. Some respondents noted that projects could be centrally determined by NGESO or through an equivalent to the Strategic Wider Works framework used in the RIIO-1 price controls for onshore networks. Others noted that projects should be assessed under similar frameworks to the cap and floor regime or ENTSO-E cost-benefit analysis (CBA) guidelines. Overall, it was acknowledged that there would be added complexity in modelling MPIs relative to single asset types. This is due to the need to understand how and when the asset would be used (i.e. for cross border trade or transmission activities) over its lifetime, as well the need to integrate complex long term wind projections to understand the potential output of the offshore wind farms (OWFs) connected to the MPI.

3.12. There was general alignment that this depended on the MPI model being progressed and the regulatory solution considered. There was also some alignment that the assessment of an MPI should cover as far as possible the full range of potential benefits it could realise, including decarbonisation, security of supply and system wide benefits. MPIs should also be assessed against alternative transmission projects (e.g. OFTOs and interconnectors) to understand which would be the most beneficial overall.

3.13. Stakeholders indicated that the review of benefits should be done over the life of the regulatory regime, and under both a 'home market' approach and offshore bidding zones approach. Different wind years and future market assumptions should also be tested, under both an UK and EU perspective, to properly estimate the utilisation of the MPI, and therefore the potential costs to consumers through the relevant support mechanisms (e.g. CfD, floor payments).

Initial views

3.14. Based upon stakeholder feedback and our own analysis we consider that MPIs are likely beneficial to GB overall, and are likely to be in GB consumers' interests. In implementing any potential regulatory regime for MPIs, we will consider further how best to assess individual projects, although we agree with stakeholders that the most appropriate options for assessment might depend on the regulatory solution being implemented.

3.15. With respect to the impacts of MPIs, we see strong parallels with the impacts of P2P interconnectors, as well as some additional separate benefits that might be MPI-specific. We consider that the principles discussed in our workstream 2 and workstream 3 policy review working papers with respect to the need for additional interconnectors and potential assessment frameworks also apply to MPIs. At a high level, this means we see value in potential future needs case assessments drawing on both socio-economic modelling and assessment of wider impacts.

ITPR conclusions

3.16. Below we summarise respondents' views to the following question from our call for evidence:

Are the conclusions of the Integrated Transmission Planning and Regulation project for the development of regulatory arrangements for MPI projects still fit for purpose? Is a more centralised approach preferable? Why?

3.17. All respondents still support maintaining continuity in the regulatory treatment of an existing transmission asset if it evolves into an MPI. However, it was noted that this does not provide a strong enough incentive for asset owners to consider upgrading existing their projects in MPIs.

3.18. On the contrary, the vast majority of stakeholders believe that the ITPR conclusion supporting a developer-led approach to determine the regulatory treatment and promotion of MPIs by design should be reviewed, although to various degrees.

3.19. Whilst it was recognised that this was a pragmatic way to support the development of early MPI projects, this approach falls short of providing the regulatory certainty and clarity required to deliver MPIs in the medium to long term, especially if these are considered as part of a wider offshore grid, rather than stand-alone projects.

3.20. Nine respondents favoured a shift towards a more centralised, system-wide approach to support the development of MPIs by design, with the ESO becoming a key factor in the needs identification process. However, there were mixed views on the specific roles it should cover.

3.21. Some respondents indicated that the ESO should play a more prominent role only in planning and assessing the need case for new MPIs, going beyond the work currently undergone through the NOA. One TSO highlighted that this new approach should include an assessment of the transmission and generation system needs both offshore and onshore. Other respondents suggested that the ESO should also be responsible for the design and operation of future MPIs, auctioning the development, construction and maintenance of the projects through a competitive process.

3.22. Only three respondents fully supported the main conclusions of the ITPR for MPI projects, although they recognised that some of its aspect should be strengthened. In particular, they would prefer following a developer-led approach to identify location, capacity and timing of new projects based on price signals. However, they recognised these should not be considered in isolation, suggesting that a closer collaboration and coordination between developers, the ESO and Ofgem would be beneficial to identify and assess other factors (e.g. system and locational cost/benefits, wider system planning) when considering new projects.

Initial views

3.23. In order to get new asset types off the ground developers and their investors require regulatory clarity and certainty. We agree with stakeholders that the specific conclusions of the ITPR with respect to our regulatory approach to MPIs do not necessarily provide sufficient certainty and clarity. We believe that providing that certainty for developers and investors is becoming increasingly important as the energy landscape in the North Sea is changing.

3.24. We believe that a shift towards a more system-wide and coordinated approach to identifying new MPI projects may be preferable in the future. Such an approach would envisage a more prominent role for NGESO to help identifying the location, capacity and timing of new projects. In this respect we consider that the ITPR conclusions regarding enhancing the role of the system operator do remain fit for purpose.

3.25. This is consistent with the conclusions of our workstream 1 and workstream 3 policy review working papers that propose enhanced and more proactive network development planning to inform interconnector investment rounds and assessments.

Application of a cap and floor regime to MPIs

3.26. This cluster of questions from our call for evidence focussed on whether a cap and floor regime could, in principle, be applied to an MPI, and if so what changes would be required in order to facilitate it.

3.27. Ofgem created the cap and floor regime in 2014 to encourage investment in electricity interconnectors. It strikes a balance between commercial incentives and appropriate risk mitigation for project developers. The regime was designed to deliver a new generation of interconnectors that would benefit GB energy consumers.

3.28. Electricity interconnectors developed under the cap and floor regime earn revenue from the allocation of capacity to users who want to flow electricity between GB and our neighbours. Interconnectors may also earn additional revenue streams, such as from participating in the GB capacity market or providing services to system operators. The floor provides a minimum return that an electricity interconnector can earn, subject to meeting a minimum availability threshold, whilst the cap determines the maximum return an interconnector can earn.

3.29. This means that, if an interconnector does not receive enough revenue from its operations, its revenue will be 'topped up' to the floor level. The funds will be transferred from the GB system operator (NGESO), which will in turn recover the sum from transmission charges applied to all users of the national electricity transmission system. On the contrary, if revenues exceed the cap, these additional revenues are redistributed by NGESO to network users by lowering the system charges.

Do you think the C&F regime can be used to support the development of the interconnector part of MPIs?

3.30. Whilst it was widely recognised that the cap and floor regime benefits from a significant degree of flexibility, only two project developers believed that the regime can be directly applied to support the IC part on an MPI, although some of its aspects would need to be adapted.

3.31. On the contrary, only one stakeholder said the cap and floor regime cannot be adapted sufficiently to support the interconnector part of an MPI. In particular, it was noted that the regime may not be able to ring-fence the different revenues streams generated by operating the interconnector from those obtained from connecting an OWF.

3.32. The remaining respondents indicated that without a clear definition of what constitutes an MPI, it is difficult to assess whether the cap and floor regime is effectively applicable, and what changes would be required to do so. In fact, it was recognised that the applicability of the cap and floor regime would depend on the specific configuration and model of each MPI proposed, and that other regulatory solutions should also be considered.

What changes to licence condition and C&F assessment process are required?

3.33. Only four stakeholders replied to this question. Overall, it was noted that the applicability of the interconnector licence conditions in the context of MPIs would need to be reviewed once the MPIs model being applied is confirmed.

3.34. Nonetheless, two respondents believed that it is possible to use the existing interconnector standard licence conditions and amended special conditions on a project-specific basis. However, they both noted that Ofgem should consider carefully the interactions between key aspects of the interconnector and other licences, especially the OFTO licence, in relation to charging arrangements, third party access (TPA) regulations and the provision of data.

3.35. One project developer highlighted that it is difficult to answer this question directly as the interconnector part of the MPI under some MPI models may not be easily identified. Generally, considering that the connection of a generation facility would impact the availability of interconnector capacity for cross border trade, this would affect all aspects of an interconnector licence related to revenues, capacity availability and relationship with other parties (such as connection agreements).

3.36. Another respondent flagged that if the cap and floor regime is to be used to support MPIs, Ofgem must ensure as little variance as possible from the existing arrangements to ensure regulatory stability and clarity for this new asset class.

What aspects of the project assessment under the cap and floor regime should be changed and why?

3.37. Two stakeholders believed that the assessment framework of the cap and floor regime can be broadly applied also to MPIs. However, they noted that the timing of the different assessment stages under the regime would need to be aligned with those of the other regulatory regimes that might apply to such projects.

3.38. One respondent also suggested that an additional cost assessment stage between IPA and FPA to better capture cost definition and specification of major works of an MPI in order to limit the uncertainty around which project costs will be recovered.

3.39. Another stakeholder also highlighted that the assessment process needs to consider and take into account also the high risk stemming from the interdependence of the different elements (i.e. transmission, generation, OFTO, etc.) of an MPI.

Initial views

3.40. We think that the principles of the cap and floor regime for interconnectors are also relevant to MPIs. Therefore, we believe that a cap and floor regime could, in principle, be a suitable regulatory mechanism to support the development of either the interconnector part of an MPI, or potentially the project as a whole. We recognise however that there are a number of challenges that would need to be addressed as set out by stakeholders in response to our call for evidence.

3.41. Therefore, we propose to further explore the applicability of this regime for early MPI projects, the changes required to it, and its interactions with other potential regulatory options (e.g. OFTO regime). We invite stakeholders to provide their detailed views on which areas of the cap and floor regime would require revision in order to be applicable to the MPI models currently under consideration, which are described in the following section.

3.42. We are also interested in understanding stakeholders' views on the interactions between a potential cap and floor regime for MPI with that of P2P interconnectors, specifically on (i) whether MPIs could operate under the same application windows as P2P interconnectors; (ii) whether the cross border transmission capacity of an MPI should be considered as a P2P interconnector, therefore contributing towards UK interconnection targets and having to be considered when assessing new interconnector projects; and (iii) how the needs case assessments for MPI projects and interconnectors would compare.

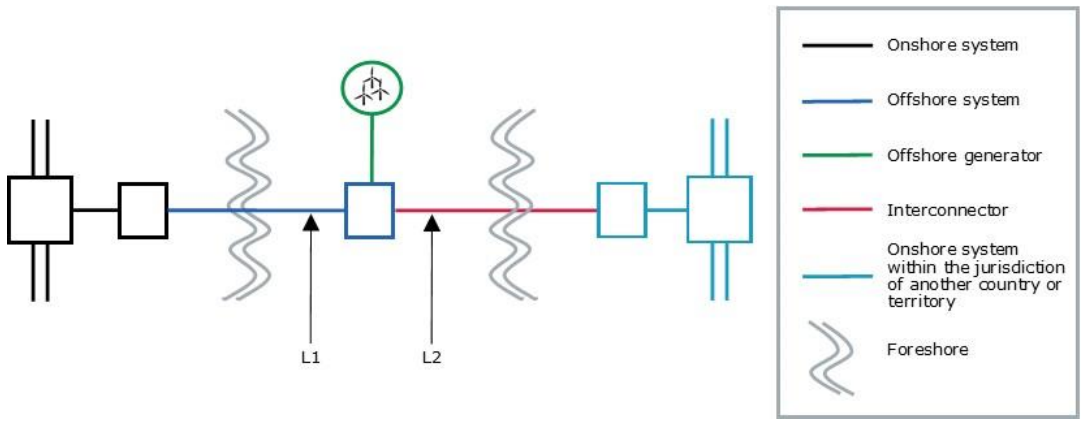
MPI models and alternative regulatory approaches

3.43. This cluster of questions from our call for evidence sought interested stakeholder input on the different models of MPIs[11] that are currently under development and alternative regulatory approaches to a cap and floor regime.

3.44. Through the Early Opportunities workstream of the OTNR, we are also currently engaging with developers that are proposing two main concepts for the development of MPI by design[12]. These are:

- **the OFTO-led model**, where a radial connection to shore from a GB OWF is combined with a further direct connection between the GB OWF and the electricity network or OWF of a neighbouring country or territory. The further direct connection forms an interconnector and therefore provides for cross-border electricity flows in addition to the OWF connection.

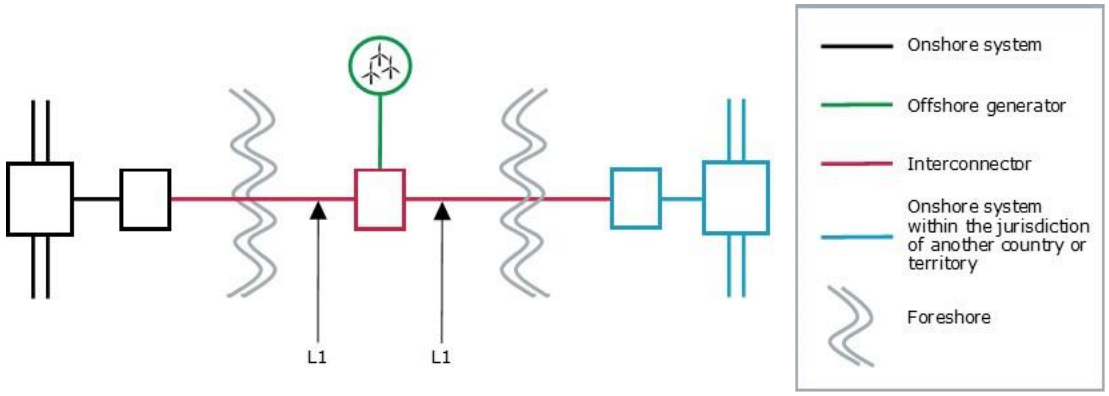
Figure 2: OFTO-led MPI model



[11] We acknowledge that some respondents indicated that a publicly available list of MPI models was not available at the time of our call for evidence for workstream 4, which limited their ability to fully address the questions asked. We hope that the information provided in this chapter, as well as the information shared through the OTNR work, will help stakeholders to better formulate their responses.
[12] By 'MPI by design', we refer to those MPI projects that are proposed and designed as such from the outset. This is to differentiate them from existing transmission infrastructure projects that evolve in MPIs.

- **the interconnector-led (IC-led) model**, where the P2P interconnector cable also includes direct connections with GB OWFs which use the interconnector as their connection to both markets.

Figure 3: IC-led MPI model



3.45. OFTO assets link offshore generation to the onshore network. Whilst there may be some variance from project to project, in terms of physical assets an OFTO will normally have ownership of offshore electricity transmission infrastructure, an onshore substation, and the electrical equipment relating to the operation thereof.

3.46. In many countries, responsibility for constructing and operating offshore electricity transmission assets falls to either the windfarm developer or to the onshore transmission operator (TO). In the UK, separate Offshore Transmission Owners (OFTOs), which are neither the windfarm developers nor the onshore TOs, take responsibility for the assets under long term licences. The licence, awarded through a competitive tender process, guarantees revenues over a 25-year period subject to certain conditions (such as satisfying performance obligations).

3.47. We recognise that alternative MPI models to the OFTO-led and IC-led ones could be developed in the future. As such, different regulatory frameworks could be considered to support their development[13]. We have summarised below some potentially relevant comparator models:

[13] We note that the OTNR programme is also considering similar topics in more detail.

- **RIIO:** this is our price control framework used to regulate the onshore transmission and distribution network. The RIIO model, which stands for Revenues = Incentives + Innovation + Outputs, ensures network companies can, through efficient operation, earn a fair return on their activities while controlling the end cost to consumers. This framework envisages different performance targets that give the opportunity (or risk) to higher (or lower) returns than the allowed ones if the targets are met (or missed). RIIO also sets out transparent conditions under which the price control might change during the price control period to reflect embedded uncertainty mechanisms.

- **LOTI**[14]**:** under RIIO-2, the Large Onshore Transmission Investment (LOTI) mechanism allows TOs to bring forward large investment projects where funding had not been awarded as part of the price control settlement because of their uncertainty or because not sufficiently developed at the time we set costs and outputs for the RIIO-2 price control period. In order to qualify for the LOTI mechanism, TO proposals must meet the following criteria: a) are expected to cost £100m or more of capital expenditure; and b) are, in whole or in part, either; (i) load-related; or (ii) related to a shared-use or sole-use generator connection project.

- **CATO**[15]**:** CATO stands for Competitively Appointed Transmission Owner. Under the CATO model a competitive tender would be run for the financing, construction, and operation of a proposed project (provided that project meets our criteria for competition models), with a transmission licence provided to the winning bidder setting out the outputs, obligations and incentives associated with delivering the project. The CATO model requires legislative changes to allow for new parties to be able to be awarded a transmission licence following a competition.

From a regulatory perspective, how would you treat the different models of MPI currently under development? Why?

[14] The LOTI replaces the Strategic Wider Works (SWW) framework under RIIO-2. For more information, please visit: https://www.ofgem.gov.uk/energy-policy-and-regulation/policy-and-regulatory-programmes/onshore-transmission-project-delivery?sort=publication_date

[15] We note that this regime is still under development and further clarity on the timings of the necessary legislative changes is required before it can be fully established. For more information, please visit: https://www.ofgem.gov.uk/energy-policy-and-regulation/policy-and-regulatory-programmes/onshore-transmission-project-delivery?sort=publication_date

3.48. Half of the stakeholders who responded to our call for evidence addressed this question. Overall, the majority of these recognised that different MPI design will require different regulatory solutions. Importantly, it was noted that at the moment there is not a clear legal definition of what an MPI is. Hence, it is not possible to determine which regulatory framework is better suited to match that definition.

3.49. Three project developers believe that the existing regulatory framework for offshore infrastructure and renewable energy generation, namely the cap and floor, OFTO and CfD regimes, can be adapted in order to support the development of the different elements of an MPI.

3.50. The cap and floor regime in particular is considered flexible enough to capture different revenue streams under an MPI, these potentially being (i) congestion revenues, (ii) payments from offshore wind users connected to the MPI (equivalent to the OFTO Tender Revenue Stream (TRS)) (iii) payments for Ancillary Services and (iv) for participation in the Capacity Market.

3.51. One stakeholder noted that without a revenue stream equivalent to the OFTO TRS, assuming a principle of priority access to the MPI for the offshore wind, a business investment model for MPI based on revenue from market arbitrage alone – with associated revenue uncertainties – would not be tenable for any investor.

3.52. One project developer highlighted that the cap and floor regime is not necessarily the only regulatory solution that can be applied to all MPI models. In fact, under certain circumstances[16], prices signals may not be adequate to support investments in MPIs, hence requiring additional consumer funding to unlock the benefits of this new asset class.

3.53. One respondent indicated that applying existing regimes would also mitigate the risk of stranded assets within the same MPI project if one element of the MPI does not go ahead.

3.54. One generator flagged that irrespectively of the regulatory framework proposed, ultimately it will have to facilitate commercial attractiveness for windfarm developers to consider MPI connection whilst ensuring efficient trading markets. It was in fact highlighted

[16] These are: (1) where the offshore wind is close to shore and can alternatively be connected by AC transmission rather than DC; (2) where the countries and associated wind farms being connected are geographically closer together; (3) where the market fundamentals of the connected market are very similar to GB.

how some of the operational models that have been proposed already could leave windfarm developers facing a worse commercial operating environment than if they were to connect via a traditional radial connection, or other coordinated connection solutions.

3.55. In general, stakeholders highlighted the importance of correctly considering the interactions among different regimes for what concerns fundamental areas that can affect the business case for the different participants of an MPI, including market access, wind capture prices, financial firmness of connection, fair allocation of risk, interaction with price support mechanisms, and cost/revenue volatility.

What other regulatory models should be considered for MPIs?

3.56. It was noted that it is difficult to consider what regulatory models might be appropriate for MPIs – and the advantages and disadvantages – without first having a clear understanding of how MPIs will be defined.

3.57. However, there was broad consensus across the majority of respondents that in principle a potential alternative regulatory regimes to support MPIs could be based on a traditional price control based RAB model.

3.58. It was noted that given the level of risk and complexity attached to MPI projects, as well as arbitrage revenue uncertainty in a highly interconnected system, a developer led regime such as the cap and floor may be insufficient to bring forward the necessary investments.

3.59. Stakeholders also stated that another advantage of such a model lies in the fact that it is well understood and already widely used for the regulation of transmission infrastructure, including in potential connecting countries. Using a RAB-based price control model would then mitigate the risk of regulatory misalignments across the same MPI project.

3.60. Respondents had different opinions on the specific features of a potential RAB model. Whilst some stakeholders see merits in having a model as close as possible to existing price control regimes such as RIIO, others envisage a model where:

- The GB ESO, together with target country TSO and ENTSO-E, determine the need case and high-level design (capacity, number of offshore connections) for additional connection facilities (offshore platforms);

- Developers lead the development and the financing of the project, including the detailed design through construction, operations and decommissioning – demonstrating efficiency primarily through competition in procurement and competition in debt financing;

- GB and target country regulators undertake the cost assessment and determine project specific WACC, efficiency and performance incentives to define project annual revenue allowance.

3.61. On the contrary, one respondent stated that it is unlikely that a RIIO type approach would be suitable for MPIs if they are considered as 'single asset solutions', meaning delivered for a single purpose (rather than a single asset in a literal sense).

3.62. Finally, one respondent proposed a new hybrid model, led by generators, through which the costs are recovered based on the usage of the capacity of the cable system of an MPI. In other words, the capacity of the connection cable between a generation site and GB attributable to the generator use should be funded through a CfD mechanism. Additional capacity headroom on that connection cable, as well as that of the cross border cable, would then be treated as an interconnector and supported through the cap and floor regime.

3.63. Other regimes by respondents are the OFTO regime, the SWW frameworks, and onshore competition models described earlier in this document.

Initial views

3.64. Based on the MPI models currently under consideration, the cap and floor regime appears to be a suitable regulatory regime to consider for the development of the interconnector part of early MPI projects, and potentially future MPIs too. We will continue to explore this potential suitability as noted above. Nonetheless, we acknowledge that as new MPI models are developed, other regulatory models might be required. Therefore, we think it is important to also explore the suitability of other regimes in order to accommodate different MPI models.

3.65. We note that the majority of stakeholders are supportive of a regulatory mechanism based on a RAB model similar to a typical price control. This may be included in any analysis of potential enduring regulatory options explored under the OTNR.

Other policy issues

3.66. This cluster of questions from our call for evidence sought interested stakeholder input on the interaction of MPIs with a number of wider energy policy topics.

Would commercial arrangements be enough to unbundling requirements, or more central intervention is required? Why?

3.67. Overall, stakeholders did not perceive unbundling requirements between generation, transmission and supply to represent a major barrier for the development of MPIs.

3.68. The majority of respondents to this question believed that the current requirements are appropriate, as an MPI is a transmission asset which should be licenced and operated separately from the generation assets it connects. Nonetheless, it was noted that the delivery of an MPI could be entrusted to incorporated joint venture (IJV) structures between the prospective offshore wind generator owner and MPI owner in order to best manage the risks during the development and construction phases of the MPI and offshore wind projects.

3.69. One respondent specifically flagged that removing these requirements could lead to potential conflicts of interest and create a risk not only to the delivery of transmission assets but also to the generators dependant on the delivery of those assets.

3.70. On the other hand, two stakeholders acknowledged the complexities of first-of-a-kind projects such as MPIs. They highlighted the fact that exemptions from unbundling requirements should be considered to reduce the need for coordination between multiple parties and ensure the efficient and timely delivery of early MPI projects. One respondent also noted that the current requirements could limit the number of parties allowed to invest in these projects, which in turn would be detrimental to competition and limit the financing available.

3.71. It was also suggested that Ofgem should consider a more relaxed approach to unbundling, coupled with effective licence and contractual conditions and supported by enhanced market monitoring through control system and operational data gathering.

3.72. Finally, one respondent believe that unbundling requirements should be considered on a project by project basis rather than through a 'one size fits all' approach.

Can existing licences be modified to suit an MPI, or should a new licence be developed? Why?

3.73. Only four stakeholders replied to this question, the majority of which believe that the current licences for IC, OFTO and transmission assets can be used to suit an MPI with due modifications reflecting the specific MPI model considered.

3.74. One respondent added that in the short term, this is the most appropriate approach to develop early MPI projects as developing a new dedicated licence would require time. It was also noted that this approach would also be best suited to regulate existing transmission infrastructure evolving into an MPI.

3.75. In the longer term, it was suggested that Ofgem should consider alternative licencing approaches allowing multiple assets, e.g. OFTOs and interconnectors, to be included in the same operating licence. Alternatively, it was suggested that Ofgem should consider developing a dedicated licence for MPIs able to capture also MPI models beyond those currently under development.

How can we best address the interactions between different regulated revenue streams of an MPI?

3.76. Few stakeholders addressed this question, recognising that an MPI can potentially access a variety of revenues sources, as described in paragraph 3.50. Respondents believe that revenues have to be shared on a fair basis between the parties involved in an MPI (i.e. interconnector, OFTO and OWF). Therefore, these revenues streams need to be clearly identified and kept distinct to maintain an unambiguous separation of what regulatory support is underpinning each element of the MPI (such as the cap and floor regime, the TRS and the CfD mechanism).

3.77. One respondent noted that if the revenue allowances of an MPI were based on a RAB style regulatory price control solution, the need to identify and separate the different revenue streams would fall away. The respondent proposed a mechanism similar to the cap and floor regime, whereby the MPI operator could collect the revenue and remit to the ESO any revenue in excess of the regulated revenue allowance from ESO or receive a top up from the ESO if the revenue collected is below the regulated revenue allowance.

How can Anticipatory Investments (AI) for MPIs be addressed?

3.78. Overall, respondents indicated that AI will be required for the development of MPIs to a certain degree. This might vary depending on the specific configuration of an MPI project and

would need to be effectively allocated the parties generating them through the correct regulatory framework.

3.79. For instance, AI could be necessary to build additional connection stations along an interconnector (i.e. beyond those required to connect the OWF part of the initial design of an MPI) to allow future OWFs to be linked up to the interconnector. It was also noted that if we move towards a more strategically planned and coordinated approach for the deployment of transmission assets, AI covering landfall works will be required to ensure that enough connection capacity is built to accommodate multiple transmission projects in the same area.

3.80. Some respondents suggested that the ESO should be the party responsible for identifying the need for AI, which could be assessed through a dedicated CBA. Ofgem would then decide whether consumers should ultimately underwrite the ESO's decisions on such AI.

3.81. Alternatively, two respondents indicated that AI could be addressed in a similar way to how strategic works are considered onshore, where a need case for AI is established by the ESO and then the works are taken forward through a competitively appointed independent transmission company.

3.82. One respondent believed that designing and developing a transmission project (e.g. either an OFTO or an interconnector) that includes additional infrastructure to accommodate a future but unconfirmed evolution in an MPI should not be considered an appropriate AI. In its opinion, a 'build it and they will come' approach to AI would not be suitable unless the transmission and generation assets of an MPI are co-developed closely together, and the two hosting countries collaborate effectively. This would limit the risk of stranded assets and the need for AI overall.

What changes to current network charging arrangements should be considered for MPIs? Why?

3.83. Respondents indicated that defining charging arrangements correctly will be key to the delivery of MPIs, and recognised the complexity of the topic compared to traditional transmission assets.

3.84. Overall, respondents highlighted that these arrangements should not disadvantage either the OWFs or the interconnector part of an MPI compared to radial connections or P2P interconnectors. One respondent suggested that the charges and maintenance costs associated

with connection to the onshore network via the MPI should be shared among all parties using the MPI, thus reducing the burdens for all parties involved.

3.85. It was noted that changes to current arrangements would vary depending on the model of MPI considered. For IC-led models, one respondent believes that the existing provisions within the standard conditions of the interconnector licence (in particular the requirement to offer terms and the requirement for a charging methodology statement) can be used to facilitate the charging arrangements for MPIs. These would allow the inclusion to additional revenue streams from offshore wind users (i.e. the equivalent of the OFTO TRS), preserving the level playing fields compared to other OWFs using radial connections.

3.86. The same respondent also noted that one potential solution for an IC-led MPI model could be for offshore wind generation that connects to an interconnector to have an agreement with the Electricity System Operator (ESO) for firm access rights to the GB transmission system using an equivalent of the Bilateral Embedded Generation Agreement (BEGA). This would ensure that the offshore wind generator has rights to Transmission Entry Capacity (TEC), and pays wider onshore use of system charges accordingly for those rights. This enables the offshore wind generator to be a party to the CUSC and BSC, equivalent to any other directly connected generator.

How could the current and potential future market arrangements for cross border trade function best for an MPI? What are the key technical elements and potential risks which should be considered further?

3.87. As MPI projects are brought forward, there is an increasing interest in developing new market arrangements to deliver efficiently the potential benefits attached to them. Most notably, in November 2020 the European Commission published its Offshore Renewable Energy Strategy[17], which seeks to assess alternative options that better harness the potential of offshore renewable energy. One of these options is the creation of dedicated offshore bidding zones (OBZ) which would allow OWFs to bid independently in energy markets of the countries hosting an MPI.

[17] More details can be found at:
https://ec.europa.eu/energy/sites/ener/files/offshore_renewable_energy_strategy.pdf

3.88. Few respondents addressed this question, given that relatively little analysis on how different market arrangements would impact MPIs have been conducted so far. However, two stakeholders believed that maintaining the current 'home market' arrangements is required to support the development of early MPI projects. A third stakeholder stated the current arrangements should not be changed at all.

3.89. In fact, they noted that whilst the OBZ concept can be a feasible and efficient market solutions, the timescales and levels of regulatory change needed to implement a bidding zone would not be possible within the timelines of the MPI projects currently under development. Additionally, there is still general uncertainty associated with long term market coupling arrangements between GB and other markets and the interface of this new concept with CfD regulation.

3.90. Some stakeholders believe that under a home market solution, all the volume produced by an OWF would be bid into the UK market, and the OWFs would be eligible to CfD support. On the contrary, under an OBZ concept, such support is not guaranteed, adding risk to the development of OWFs.

3.91. Another key risk commonly perceived was the current exclusion of the GB wholesale market from the European price coupling process, which would impact the efficient delivery of electricity across an MPI. It was noted that in the future there should be as much alignment as possible with EU arrangements for regulation and cross border trade to avoid delays and detriment to UK consumer benefits that should be achieved from early implementation of MPIs.

3.92. One respondent noted that alignments between EU and GB arrangements will also be required to coordinate and manage electricity flows, system faults and system services between markets as an offshore meshed HVDC grid develops.

Is there any other aspect related to MPIs that we should consider?

3.93. Stakeholders provided the following list of additional aspects related to MPIs that should be given consideration. We note that some of these are currently being addressed through the OTNR project.

- The definition of an electricity interconnector requires careful consideration with respect to MPIs and the activities they will be allowed to carry out.

- Aspects of the CfD Regulations, specifically the Generic CfD Agreement, Allocation Regulations and Standard Terms & Conditions, will require revision to ensure that the relevant definition and terminology provide the necessary clarity for OWF developers willing to connect to an MPI and ensure eligibility to the mechanism.

- Article 16(8) of the Electricity Regulation[18] requiring that at least 70% of the total interconnector transmission capacity must be made available for cross border trades is considering a key obstacle to the realisation of MPIs. In fact, stakeholders believe it is important that OWFs have physical priority over the transmission connections to their respective host countries to support the business case for developers[19]. Similarly, exemption from TPA requirements could be necessary to ensure that the required transmission capacity of an MPI is reserved to the OWFs that connect to it.

- Any regulatory framework for MPIs must be sufficiently "futureproofed" so the relevant parties are able to be fully integrated with any future development of a meshed offshore grid without any worsening of commercial arrangements already in place.

- Ofgem should consider the relationship between any connecting parties to an MPI (e.g. access rights or obligations in relation to the facilitation of new connections). At present, the arrangements for interconnectors are different to those related to both onshore and offshore TOs.

- For any enduring regulatory model for MPIs, industry code and standard classification clarity is required on whether MPIs (from a code and standards perspective) continue to be connected to and use the Transmission System like an interconnector, or whether they fully or partly become the Transmission System like an OFTO. Any decision in this regards will interact with other fundamental topics such provision of Balancing Services as well as connection right and obligations.

- Several industry codes (e.g. ENTSO-e HVDC code, Emergency and Restoration codes and Requirements for Generation codes) relevant to MPI projects present differences at

[18] Regulation (EU) 2019/943: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32019R0943
[19] It is worth noting that this article was not included in the retained form of the Electricity Regulation and therefore does not apply in GB, although may still do on the EU side.

national level. Harmonising these codes will further de-risk investments in these projects.

Initial views

3.94. We provisionally agree with stakeholders' views that unbundling requirements, the potential need for multiple operating licences, and the interaction of multiple revenue streams of an MPI may not represent a substantial obstacle to the development of these projects.

3.95. On the other hand, topics such as AI, market arrangements and charging regimes are perceived as more complex topics which require further consideration. Other potential barriers stakeholders flagged as key are the relevant legal definitions of the assets forming an MPI and how they interface with existing support mechanism such as CfD.

3.96. Given the above, we believe that further work is necessary to address these barriers, some of which are already under consideration through the OTNR. We will continue to engage with stakeholders across both programmes, and with BEIS and our OTNR partner organisations, to continue to explore the issues flagged by stakeholders in more detail.

4. Conclusions and initial proposals

Section summary

In this section we summarise the conclusions and initial proposals that have been set out and discussed throughout this document.

Questions

Question 7: Do you agree with our initial conclusions? If not, please concisely explain why and provide supporting information if available.

Question 8: Do you agree with our initial proposals? If not, please concisely explain why and provide supporting information if available.

Conclusions

4.1. As a result of the analysis performed under workstream 4 of the interconnector policy review, as described in this working paper, we have concluded the following:

- We acknowledge the benefit in the development of MPIs, in particular in combining cross-border interconnection with offshore wind developments. MPIs can potentially reduce the total investment and number of landing points required for interconnectors and offshore renewables, and can help to facilitate the development of energy systems in a more coordinated way.

- We agree with stakeholders that the specific conclusions of the ITPR project with respect to our regulatory approach to MPPs, including MPIs, are not sufficient to provide the necessary regulatory certainty and clarity for the development of these projects. We believe that providing that certainty for developers and investors is becoming increasingly important as the energy landscape in the North Sea is changing.

- We believe that, in principle, the cap and floor regime could be adapted to support the development of the interconnector part of an MPI, or potentially the project as a whole. However, further analysis is required to fully understand potential barriers to its applicability and how it interacts with other frameworks. In the longer term, alternative

regulatory solutions should also be considered as new models of MPI projects are developed and we understand better the advantages and disadvantages of applying a cap and floor regime to MPI projects.

- We believe that a shift towards a more system-wide and coordinated approach to identify new MPI projects may be preferable in the future. Such approach would envisage a more prominent role for NGESO to help identifying the location, capacity and timing of new projects. In this respect, we consider that the ITPR conclusions regarding enhancing the role of the system operator do remain fit for purpose.

- Overall, unbundling requirements, the interaction of multiple licences and of multiple revenue streams related to operating an MPI are not considered as insurmountable barriers to the development of these projects. Charging and market arrangements are recognised as more complex and fundamental topics that will determine the successful delivery of MPI projects.

4.2. In response to the conclusions drawn from workstream 4 we are seeking views on the following initial proposals:

- We should explore ways to provide regulatory certainty to developers of MPI projects. This could potentially be delivered through the cap and floor regime.

- We should further consider its applicability to support the interconnector part of the early MPI projects considered under the OTNR, or potentially the project as a whole. In principle, the regime (or aspects of it) may also be suitable for future MPI projects too. We should also consider the interface with other regimes, and the interactions between a cap and floor regime for MPIs and the existing and/or potential future regime for P2P interconnectors.

- We should further explore wider energy policy issues described in this paper to remove key barriers to the development of MPIs, noting that the OTNR will address some of these in more detail in due course.

4.3. Following this consultation, and our review of stakeholder responses, we will confirm our final proposals in our interconnector policy review decision. Our proposed detailed steps to implement our final proposals will also be set out in our decision.

5. Consultation questions

Section summary

In this section we will set out the specific questions on which we would like feedback

Questions

Where possible, we would welcome feedback on the individual questions per section. However, we recognise this may be detailed and time-consuming, so would also appreciate feedback on the broad themes or overarching questions if preferred. In responding please be as specific and concise as possible – for example, if providing feedback on specific conclusions or recommendations, please clearly explain.

In addition to the specific questions we would also welcome any additional views on the questions presented in this document that were issued in our call for evidence to interested stakeholders. These can be found in Appendix 1.

Section 3

Question 1: Do you agree with the approach we have taken to workstream 4?

Question 2: Do you think we have missed any important benefit that MPIs could deliver?

Question 3: Do you agree with our views on the conclusions of the ITPR?

Question 4: Do you agree with our proposal to further explore the applicability of the cap and floor regime for the MPI projects currently under consideration? Please provide supporting information if available.

Question 5: Do you agree with our proposal to also consider alternative regulatory models for MPI projects in the long term? What models should we consider? Please provide supporting information if available.

Question 6: What other wider policy issues or aspects related to MPIs should we be aware of?

Section 4

Question 7: Do you agree with our initial conclusions? If not, please concisely explain why and provide supporting information if available.

Question 8: Do you agree with our initial proposals? If not, please concisely explain why and provide supporting information if available.

Other

Question 9: Do you have any further feedback on our analysis, conclusions or proposals presented in this consultation document?

Appendix 1 – Call for evidence questions

1) Are the conclusions of the Integrated Transmission Planning and Regulation project for the development of regulatory arrangements for MPI projects still fit for purpose? Is a more centralised approach preferable? Why?

2) From a regulatory perspective, how would you treat the different models of MPI currently under development? Why?

3) In assessing an MPI project seeking a regulated regime, what are the benefits delivered to consumers, and how should we quantify them?

4) Do you think the C&F regime can be used to support the development of the interconnector part of MPIs? If so, what changes in the regime do you think are required in relation to:

    a. IC licence conditions: what are the conditions currently preventing the C&F to be applied to MPIs and why? How these should be changed?

    b. C&F assessment process: what aspects of the project assessment under the regime should be changed and why (e.g. timings and phases of the assessment, cost items)?

5) What other regulatory models should be considered in the development of a framework for MPIs instead of the C&F? What are the advantages and disadvantages of each?

6) How would you address the following policy issues:

    a. Unbundling requirements: would commercial arrangements be enough to unbundling requirements, or more central intervention is required? Why?

    b. Multiple licences: can existing licences being modified to suit an MPI, or should a new licence be developed? Why?

    c. Regulated revenues: how can we best address the interactions between different regulated revenue streams of an MPI?

    d. Anticipatory investments (AI): how can AI for MPIs can be addressed?

    e. Charging arrangements: what changes to current network charging arrangements should be considered for MPIs? Why?

    f. Market arrangements: how could the current and potential future market arrangements for cross border trade function best for an MPI? What are the key technical elements and potential risks which should be considered further?

7) Is there any other aspect related to MPIs that we should consider?

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.

4. With whom we will be sharing your personal data

Your personal data will not be shared outside of Ofgem.

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

Your personal data will be held in line with our processes.

6. 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.

7. 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".

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

9. 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.)

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