
Summary of Responses on Market Arrangements for Multi-Purpose Interconnectors

Publication date:	14 December 2023
Contacts:	Michael Brown (Office of Gas and Electricity Markets) & Nicholas Evans (Department for Energy Security and Net Zero)
Teams:	Cross Border Market Arrangements (Office of Gas and Electricity Markets) & Electricity Trading (Department for Energy Security and Net Zero)
Email:	CBMA@ofgem.gov.uk

In June 2023 we consulted on market arrangements for Multi-Purpose Interconnectors (MPIs), in particular our views on the relative merits of both Home Market (HM) and Offshore Bidding Zone (OBZ) market configurations for these infrastructure projects. We welcomed views from organisations and individuals with an interest in market arrangements for MPIs, as well as in cross-border trading arrangements and MPI development in general.

This publication summarises responses to the consultation to support ongoing design discussions with stakeholders. It also provides updates on how key issues raised in the consultation are currently being taken forward, to enable us to be able to publish reasoned decisions in this space in the near future.

© Crown copyright 2023

The text of this document may be reproduced (excluding logos) under and in accordance with the terms of the [Open Government Licence](#).

Without prejudice to the generality of the terms of the Open Government Licence the material that is reproduced must be acknowledged as Crown copyright and the document title of this document must be specified in that acknowledgement.

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

10 South Colonnade, Canary Wharf, London, E14 4PU.

This publication is available at www.ofgem.gov.uk. Any enquiries regarding the use and re-use of this information resource should be sent to: psi@nationalarchives.gsi.gov.uk.

Contents

Summary of Responses on Market Arrangements for Multi-Purpose Interconnectors	1
1. Introduction	5
Background – OHA pilot and market arrangements for MPIs	5
Policy development processes	5
Responses to the June 2023 Consultation	6
Context and related publications	6
Related publications	6
General feedback for consultation	7
2. Trading arrangements and bidding zone configuration	8
Preference of trading arrangements and bidding zone configurations	8
Consultation questions	9
Consultation responses	9
Commentary	10
Transition between configurations	10
Consultation questions	11
Consultation responses	11
Commentary	12
Trading timeframes	12
Consultation questions	13
Consultation responses	13
Commentary	14
3. Support schemes under an OBZ model	15
Offshore wind farm compensation	15
Consultation questions	15
Consultation responses	15
Commentary	17
4. Operability and other issues	18
Operability	18
Consultation questions	18
Consultation responses	18
Commentary	19
Other issues	19
Issues raised and commentary	20
5. Conclusions and next steps	21
Outstanding issues	21
Trading arrangement certainty	21
Contracts for difference development	21
Operability workstream	21
Next steps in MPI development	22
MPI regime design and licensing	22
Timing and application windows	22

Appendix 1 – Non-confidential stakeholder responses.....	23
List of published responses	23

1. Introduction

Background – OHA pilot and market arrangements for MPIs

- 1.1 In June 2023 we consulted on market arrangements for Multi-Purpose Interconnectors (MPIs).¹ We set out our considerations on the relative merits of both Home Market (HM) and Offshore Bidding Zone (OBZ) market configurations for this future class of infrastructure projects. We welcomed views from organisations and individuals with an interest in market arrangements for MPIs, as well as in cross-border trading arrangements and MPI development in general.
- 1.2 The consultation ran in parallel to an Ofgem consultation on the regulatory framework for Offshore Hybrid Assets (OHAs)² which covered two types of asset: MPIs and Non-Standard Interconnectors (NSIs). Unlike the OHA consultation, we have made no consideration of NSIs as they do not feature offshore generating activity in GB and therefore behave similarly to regular point-to-point interconnectors for market arrangement purposes.
- 1.3 There are currently no MPIs applicants progressing through the OHA Pilot Scheme so the work furthered by this summary of responses is to support MPIs that may apply to future application windows. We recognise the importance of providing developers with as much certainty as possible, as early as possible.
- 1.4 As with the drafting of the consultation document, this summary of responses has been prepared jointly between Ofgem and the Department of Energy Security and Net Zero (DESNZ) market arrangements teams. Both organisations have had the opportunity to review all material received.

Policy development processes

- 1.5 The consultation was preceded by engagement with the industry via responses to previous publications (listed below) and targeted stakeholder engagement, including via the MPI Framework Discussion Group (MFDG). This engagement has continued post-consultation and we have had the opportunity to further test some of the feedback received.
- 1.6 Our aim through this publication has been to summarise the first stage of this work as well as the insights we have received from stakeholders. Making this

¹ [Consultation on Market Arrangements for Multi-Purpose Interconnectors](#)

² [Consultation on the Regulatory Framework for Offshore Hybrid Assets](#)

available will support the next stage of MPI Market Arrangements development as we work towards achieving more certainty for stakeholders as set out in the next steps section.

- 1.7 We will provide stakeholders with further updates in 2024 once there is greater clarity in related policy areas and following further joint policy development work.

Responses to the June 2023 Consultation

- 1.8 Twenty-two responses were received to the June 2023 Consultation on market arrangements for MPIs, of which seventeen were non-confidential and have been listed at Appendix 1. Five confidential responses were received which have been considered and reflected fully in this publication but without attribution.
- 1.9 We were pleased to receive responses from 11 offshore wind / transmission adjacent developers as these stakeholders were under-represented in our earlier in-person engagement via the MFDG. We also received responses from three developers, five trading parties and three system operators.
- 1.10 The consultation was open to written responses for six weeks and, in certain cases, was followed up with direct engagement. We express our thanks to all the respondents.

Context and related publications

- 1.11 Sections to this document should be read in conjunction with corresponding sections of the June consultation. These provided in-depth explanations of the matters being considered which have been omitted here for brevity. If you require further detail, please see the related publications section.

Related publications

- 1.12 Development of MPI policy can be tracked chronologically through the publications listed.
- [Interconnector policy review: Working paper for Workstream 4 - multiple purpose interconnectors | Ofgem](#), June 2021
 - [Consultation on changes intended to bring about greater coordination in the development of offshore energy networks | Ofgem](#), July 2021
 - [Offshore Transmission Network Review: Enduring Regime and Multi-Purpose Interconnectors \(publishing.service.gov.uk\)](#), September 2021
 - [Interconnector Policy Review - Decision | Ofgem](#), December 2021

- [Update following our consultation on changes intended to bring about greater coordination in the development of offshore energy networks | Ofgem](#), January 2022
- [Offshore Transmission Network Review: Multi-Purpose Interconnectors: government response \(publishing.service.gov.uk\)](#), April 2022
- [Offshore Transmission Network Review – Multi-Purpose Interconnectors: Minded-to Decision on interim framework | Ofgem](#), April 2022
- [Update following our consultation on the Multi-Purpose Interconnector interim framework | Ofgem](#), December 2022
- [Open letter on market arrangements for Multi-Purpose Interconnectors | Ofgem](#), January 2023
- [Consultation on the Regulatory Framework for Offshore Hybrid Assets: Multi-Purpose Interconnectors and Non-Standard Interconnectors](#), June 2023
- [Consultation on Market Arrangements for Multi-Purpose Interconnectors](#), June 2023

General feedback for consultation

We believe that consultation is at the heart of good policy development. We welcome any comments about how we have run this consultation. We would 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.

2. Trading arrangements and bidding zone configuration

Preference of trading arrangements and bidding zone configurations

- 2.1 This section is concerned with potential models for future cross-border trade across MPIs. Our consultation focused on two key components / concepts:
- Trading arrangements: specifically, whether an implicit or explicit trading model will be available to GB and which model is preferable in the context of MPIs; and
 - Bidding Zone configuration: specifically, whether generating assets connected to MPIs should be deemed part of the domestic bidding zone ('home market (HM)'), and get priority access over cable capacity, or whether they form their own, separate bidding zone ('offshore bidding zone (OBZ)') and compete for access to the cable.
- 2.2 Based on preliminary engagement, we presented consultees with a table setting out an order of preference and rationale for such order, with implicit trading arrangements deemed better optimised to delivering efficient markets and proposing OBZ as being the configuration more optimised to trading under such arrangements.

Figure 1: Table with bidding zone configurations and trading arrangements.

1. Implicit trading & OBZ	<ul style="list-style-type: none"> • Combines the benefits of implicit trading (selling capacity on the interconnector and electricity together) and OBZ configuration (separate bidding zone created for the MPI and OWF(s)).
2. Implicit trading & HM	<ul style="list-style-type: none"> • Captures the benefits of implicit trading, but inefficiencies and challenges of HM configuration (trade as part of domestic market zone) remain, influencing the overall design.
3. Explicit trading & HM	<ul style="list-style-type: none"> • A 'fallback arrangement' in the 'status quo' scenario where there is no implicit trading available. (post- EU-exit: capacity and electricity sold separately)
4. Explicit trading & OBZ	<ul style="list-style-type: none"> • Operational complexities and inefficiencies of explicit trading are potentially exacerbated under the OBZ configuration.

Consultation questions

2.3 The consultation asked stakeholders the following questions:

Q1. Do you agree with the ranking of options (OBZ-implicit, HM-implicit, HM-explicit, OBZ-explicit) presented in the table?

Q2. Do you believe that some of the permutations are not workable and should be ruled out? Why?

Q3. Which of the four options is your preferred one, and why?

Q4. Under implicit trading (loose volume coupling), which bidding zone configuration (HM or OBZ) best supports: a) market efficiency? b) consumer benefits? c) integration of renewables?

Consultation responses

2.4 Responses were split between those supporting our order of preference for bidding zone configurations and trading arrangements, those questioning some aspect of the ordering, such as whether HM is preferable under explicit arrangements, and those arguing that we should hold off on committing to specific arrangements at this time.

Preference for implicit trading

2.5 There was unanimous preference for implicit trading arrangements amongst respondents, supporting our assertion that it is the better option. Respondents cited a reduction in adverse flows and greater asset utilisation amongst their justifications for preferring the implicit model.

Limited support for explicit trading

2.6 There were limited arguments made in support of explicit trading, although these were insufficient to sway respondents to change their order of preference. For example, the ESO noted that an explicit model would give them more scope to take mitigating actions when interconnector flows exacerbate network constraints. As such, implicit arrangements might result in higher balancing costs.

Support for implicit trading and OBZ combination

2.7 There was majority support for our most preferred option, that of implicit trading combined with an OBZ. Reasons cited were similar to those given for implicit trading more generally. Implicit-OBZ was also the preferred option across each of the dimensions of market efficiencies, consumer benefits and integration of renewables.

Acknowledged drawbacks with the implicit-OBZ model

2.8 Several of the respondents acknowledged that, while implicit-OBZ might be the most efficient configuration for trade across MPIs, its implementation presents challenges that require mitigation: particularly that there is a need to compensate offshore wind farms (OWF) for volume risk in this scenario.

OBZ preference even under explicit trading

2.9 Some respondents felt that the explicit-OBZ combination might be unworkable or may lead to low prices or redundant markets as consumption in the OBZ would likely to be low or non-existent. However, more felt that OBZ was the preferable configuration in either trading arrangements because of better asset utilisation and lower cost to consumers. This opinion was popular with MPI developers – some suggesting that the HM approach was not investible.

Deferring decisions on preferred arrangements

2.10 A small number of respondents suggested we are too early in the process to consider eliminating options. Some indicated that we lacked an adequate quantitative basis for making the decision and that more in-depth analysis of each of the configurations would be advantageous.

2.11 Others suggested that because this is a novel asset type, there is value in maximising flexibility and being able to select trading arrangements and bidding zone configuration on a case-by-case basis depending on the project being proposed.

Commentary

2.12 We recognise that of the options presented, the broadest support amongst respondents was for the implicit-OBZ arrangement. We feel there is a strong rationale for this remaining our lead option.

2.13 Respondents did raise several concerns with this model, including the need for more certainty around future trading arrangements and the need to compensate connected OWF. Some respondents also asked us to not take options off the table this early in the process.

Transition between configurations

2.14 This section is concerned with stakeholder views on transitioning from one configuration to another (HM to OBZ) and one set of trading arrangements to another (explicit to implicit) ahead of or during the life of an MPI. This may be

necessary as a fallback option if the preferred trading arrangements are not available at the point of implementation: creating a scenario in which there would be transition from a HM-explicit to an OBZ-implicit arrangement.

- 2.15 Respondents highlighted concerns that had also been raised during our early-stage engagement regarding the impact of transition on regulatory certainty and potential difficulties in amending Contracts for Difference (CfD) contracts. In the case of day-ahead trade, the consultation set out that under OBZ-implicit, capacity would be calculated and allocated in a similar way to any other market participant under an implicit model (eg, allocated by a coupling operator via algorithm). Under HM-explicit, however, the capacity calculation process would need to account for OWF reserved capacity. This results in uncertainties around the reservation basis and whether the OWF would need to bid into auctions.

Consultation questions

- 2.16 The consultation asked stakeholders the following questions:

Q6. Do you think that a transition from HM to OBZ is possible and/or desirable?

Q7. What conditions must be met so that a transition from explicit-HM to implicit-OBZ configuration would be viable for developers?

Q8. How does this relate to other areas such as regulatory regime design or charging arrangements?

Consultation responses

- 2.17 Respondents to these questions generally took a negative view to transitioning between bidding zone types. There was also little consensus on what projects would transition to and from: whether it would be driven by a change in bidding zone configuration, trading arrangements or both. Most respondents concluded it was possible but not desirable.

Increased uncertainty

- 2.18 The majority of respondents noted that transitioning between trading arrangements would add considerable development uncertainty, with asset owners wishing to minimise exposure to congestion revenue risk. The lack of certainty would also bring into question compatibility with the CfD scheme, the objective of which is to maintain investor confidence over fixed periods of time.
- 2.19 Many stakeholders noted it might be possible to mitigate uncertainty risks, but not remove them entirely. This might be achieved by providing a long run-up

period ahead of any change, extensive modelling of impacts and embedding regulatory protection against negative outcomes.

Transition as an enabler for reaching a preferred trading arrangement

2.20 Several respondents made a case for transitioning arrangements if it was the only way of reaching an implicit-OBZ arrangement end state.

2.21 Some respondents indicated that transitioning between arrangements may be necessary to build a meshed grid in the North Sea or to facilitate multi-phased development whereby the build-out changes over time.

Commentary

2.22 We recognise the unattractiveness, in terms of uncertainty and added complexity, of transitional arrangements to developers, particularly OWF developers, and will seek to minimise the impact should such arrangements be required. We also recognise that a transition in arrangements during the development stage may be easier to manage than transitioning once assets have become operational.

2.23 Being positioned to commit to a confirmed set of trading arrangements by the time that projects apply into schemes seems the best way of reducing the need for transitional arrangements. However, potential developments in this space may necessitate changes that cannot be anticipated ahead of time, in which case any support we offer to mitigate risk will prove important.

Trading timeframes

2.24 This section is concerned with the compatibility of MPI models with the three trading timeframes across which cross-border trade operates: long-term, day-ahead and intraday.

2.25 In the case of day-ahead trade, the consultation asserted that under OBZ-implicit, capacity would be calculated and allocated in a similar way to any other market participant under an implicit model (e.g. allocated by a coupling operator via algorithm). Under an HM-explicit model, however, we suggested that the capacity calculation process would need to account for OWF reserved capacity and there were uncertainties around the reservation basis and whether the OWF would need to bid into auctions.

2.26 In the intraday and long-term timescales, the consultation recognised that available trading options may be limited by focus being given to implementing implicit volume coupling for day-ahead trade in the first instance, with other

timeframes to be considered later. As such, preferred trading arrangements may not be available across these timeframes at the point at which MPIs are implemented.

Consultation questions

2.27 The consultation asked stakeholders the following questions:

Q9. How do you envisage long-term, day-ahead and intraday trading arrangements working for MPIs under both HM-explicit and OBZ-implicit scenarios? Can explicit capacity allocation work with OBZ configuration, if yes how?

Q10. What are your views on using either Physical Transmission Rights (PTRs) or Financial Transmission Rights (FTR)s in the long-term timeframe? Will OWFs have an active role in long-term capacity allocation?

Q11. Which timeframe is the most vital/relevant for MPIs and why?

Q12. Are there any improvements to commonly understood trading models (explicit trading or implicit price or volume coupling) that can be made to better facilitate efficient market arrangements for MPIs?

Consultation responses

2.28 Respondents noted that the intra-day timeframe will be of growing significance to future MPIs (with day-ahead remaining important). Stakeholders also flagged that MPIs, and especially the OBZ bidding configuration, will present significant challenges to trading in the long-term timeframe.

Intra-day trading and volume coupling

2.29 As in earlier sections, preference for implicit trading was consistent amongst respondents. It was noted that, at point of implementation, implicit trading enabled by volume coupling may only be available in the day-ahead timeframe as this is the initial objective of the Trade and Cooperation Agreement (TCA) workstream. Stakeholders agreed that day-ahead should be prioritised but the absence of a short-term solution for implicit intra-day trading led several respondents to make the case for single day-ahead price coupling again. Other respondents, including ESO, noted some benefits to explicit trading in the intraday timescale: simplicity and avoiding the need to dovetail with EU mechanisms.

Challenges with long-term trading

- 2.30 Many respondents noted the challenge of implementing long-term trading under the OBZ configuration. Some argued that some form of long-term hedge is required. Financial Transmission Rights (FTRs) were supported as the simpler, more efficient solution offering secondary trading options while Physical Transmission Rights (PTRs) were seen as having advantages in allowing OWF to procure access on a longer term basis without having to rely on day-ahead auctions. However, stakeholders also indicated that PTRs would be harder to establish and possibly less efficient overall. Respondents noted that these will be important risk-management tools to mitigate congestion-losses. They also noted that FTRs seemed to be the preferred model in the EU at present. Overall, there was a small preference for FTRs over PTRs.
- 2.31 Respondents also noted a preference for long-term sale of capacity by OWF developers which, although less efficient than implicit trading, would achieve greater certainty in revenue flows. However, some respondents indicated that neither FTRs or PTRs would be appropriate for OWF because of the reliance on weather forecasting.

Case for modelling scenarios

- 2.32 Respondents agreed to the need for trade across all three timeframes to enable MPI development. They called for further modelling to understand the specific implications of the OBZ configuration across individual timeframes and geographies.

Commentary

- 2.33 We will continue to consider the interactions between future trading arrangements for all timeframes and the development of MPIs.

3. Support schemes under an OBZ model

Offshore wind farm compensation

- 3.1 This section is concerned with ways of compensating OWFs for projected lower revenues earned under an OBZ configuration. The consultation focused on two approaches in particular: the redistribution of congestion revenues from an MPI line owner to the connected OWF or the amending of support mechanisms such as the CfD scheme.
- 3.2 In the case of the former, the consultation noted that there were several approaches that could be taken to redistribute congestion revenues. It was noted that the use of preferential FTRs to effect ex-ante redistribution would be complicated and detrimental of market participants. Options for ex-post redistribution also suffer from shortcomings including incompatibility with Article 19 of the Retained Electricity Regulation, which restricts use of congestion revenue from interconnectors to specific purposes.
- 3.3 In the case of CfDs, two key issues were flagged to respondents: the eligibility of participants under current scheme rules and the loss of revenue for OWF in the OBZ scenario when importing.

Consultation questions

- 3.4 The consultation asked stakeholders the following questions:

Q13. Do you agree that OWFs should be compensated for a loss of revenue in OBZ compared to HM? Where should this come from? Should it come from the congestion revenue from the MPI cable derived from cross-border trade?

Q14. How could the existing CfD scheme be changed to support OWFs connected to MPIs, especially considering OBZ market model? How would you envisage this scheme to work?

Q15. Are there any other alternative approaches that we have not considered that would better incentivise an OWF to connect to an MPI?

Q16. How do charging arrangements relate to the considerations on support schemes for MPIs, especially under the OBZ scenario?

Consultation responses

- 3.5 Nearly all respondents were of the opinion that in an OBZ scenario, OWFs should be compensated for a loss of revenue. There was less consensus over where it

should come from, but the majority of stakeholders believed CfDs were the optimal mechanism. The majority of system operators felt that schemes that result in distortive effects should be disincentivised. Responses from OWFs challenged whether there was adequate incentive for MPI-OWF builds compared to conventional OWF builds, with over half arguing it was not, even after CfD price risk is adjusted for.

Sharing congestion revenue

- 3.6 While support for some compensation was almost unanimous, congestion revenue sharing was only supported by a minority of respondents – and generally those respondents still preferred compensation by some other means. Some respondents felt that revenue sharing was a distortive subsidy ultimately paid by consumers. Cross-subsidisation between transmission and other activities was viewed negatively, with respondents referencing the explicit prohibitions within EU regulations.
- 3.7 Stakeholders were also critical of congestion revenue and CfDs being used together, noting that incorporating payments from another source might be difficult and require a long lead time.

Contracts for Difference (CfD) Scheme

- 3.8 The majority of respondents were supportive of the use of CfDs to compensate OWF. Some had different views on how this would operate in practice. Some stakeholders envisaged payments coming from the same pool as other CfD payments. Others suggested that this would needlessly complicate matters, especially if transitional arrangements were to open MPI-OWF, and potentially all scheme participants, to disputed Principles Reviews. Some respondents favour implementing a standalone CfD category to eliminate such risks. Stakeholders believed CfDs, or any alternative/adapted support model, should be paid by the same entity that would usually pay renewable subsidies to prevent discrepancies.
- 3.9 Some respondents were critical of the design of the existing CfD scheme, noting it disincentivises assets from delivering added system value distorting wider markets. Key considerations noted in applying CfDs to MPIs include establishing what reference price would be used and avoiding subsidisation of electricity in the connecting country. Respondents also agreed that a solution will need to be found to the duration misalignment between the project life of an MPI (25-30 years) and the 15-year CfD duration.

- 3.10 Respondents were also keen to suggest broader amendments to the CfD scheme that may be better suited to the MPI arrangements. These include possibly allowing a portion of generation to market outside of the CfD strike price. Another suggestion, raised by multiple respondents, is remuneration based on deemed generation of an OWF rather than physical generation with so called 'capability based' CfDs, which are in use in a number of European contexts.

Alternative suggestions

- 3.11 Some respondents suggested that integrated ownership might address the issue of projected lower revenues for OWF if it were permitted. One respondent also suggested that alternative routes to market could be used to bridge the revenue shortfall such as connection to hydrogen / carbon capture, utilisation and storage (CCUS). Other benefits were also cited as adding value from the perspective of the OWF, particularly network charges, reduced cost of shared infrastructure, ease of building further from land and additional redundancy. Finally, some respondents wondered whether priority access could be provided even in the OBZ scenario.

Incentive adequacy

- 3.12 Several respondents remarked that the incentives for OWFs to develop products under an MPI model were weak, even with CfD compensation. Conversely, other respondents suggested that limited available OWF opportunities might actually make MPIs more attractive.

Commentary

- 3.13 There is a clear preference for using CfDs over other mechanisms to compensate OWF in an OBZ scenario. Further work will be needed to determine how CfDs would operate for MPIs, what reference prices would be used and how the durational differences between OWF and MPI support may be bridged.
- 3.14 As for concerns over incentives to participate in MPIs, we note there are significant advantages to building MPIs as part of a hybrid scheme compare with stand-alone projects and would expect that these would at least partially offset the higher risk profile. We will keep this under review and will take account of these concerns in broader work on MPI implementation.

4. Operability and other issues

Operability

- 4.1 This section is concerned with challenges that MPIs present to system operability and the changes the ESO will need to consider and implement to support such projects. The consultation noted a few specific challenges, including priority access, balancing and ancillary services. Central to these challenges is whether the ESO should have a relationship with both the MPI line and the connected OWF or just manage interactions via the MPI: having both contractual and practical (metering etc) implications.

Consultation questions

- 4.2 The consultation asked stakeholders the following questions:

Q17. Does the chapter on operability capture the key topics that should be included when considering the impact of market arrangement models on system operability? Are there other important implications that need to be considered?

Q18. Do you have any views on how curtailment and compensation might work under both HM and OBZ configurations?

Q19. Do you have any comments on how balancing might work under both HM and OBZ models?

Q20. What are your views on contractual agreements that will need to be established between the system operator, MPI operator and an OWF? Do they differ depending on HM or OBZ configuration?

Consultation responses

- 4.3 Respondents thought that the consultation chapter broadly captured the operability questions that will need to be addressed through future work. They were keen to be involved in future discussions and to ensure that operators in connected jurisdictions were also involved. There were a range of conflicting opinions about how curtailment and compensation should work and how balancing might work, set out below. In terms of contractual relationships, of those who opined there was a general preference for OWFs having a direct relationship with the ESO as opposed to an indirect relationship via the MPI.

Curtailment and compensation

- 4.4 Respondents set out a number of principles they believe should be followed in applying curtailment/compensation: it should be market-based, make the prejudiced party whole, no party should profit unfairly and arrangements should be as symmetrical as possible with connected jurisdictions.
- 4.5 It was noted that OWFs are normally compensated through the balancing market if curtailed by the system operator. Interconnector flows are managed through Net Transfer Capacity (NTC) with compensation paid, with ESO noting that one of the questions to address will be how such compensation would be split.

Balancing and contractual relationships

- 4.6 Those respondents who commented on balancing requirements suggested that it might work as with existing assets, but with options around balancing units and contractual arrangements dependent on the relationship desired and bidding zone model chosen. The ESO suggested that under OBZ, the MPI may be responsible for actions to be carried out by the OWF connected to it. Other respondents were less keen on this option – seeing the direct relationship and individual balancing units and metering as being preferable.
- 4.7 Generally, OWF developers felt that having a contractual relationship with the MPI rather than direct with the ESO would result in value being lost in terms of balancing services or ancillary services being provided. Such arrangements might also prove challenging should assets later evolve into meshed grids. Additionally, contractual relationships would likely become very complicated, with the OWF having to sign up to codes and the MPI having to be party to the CfD agreements etc.

Commentary

- 4.8 Responses to this section have highlighted the significant further thinking that will be required to implement MPI market arrangements at a practical level. As these are of an operational or technical nature, ESO has been tasked with exploring these matters in more detail. Further information is included in the next steps section.

Other issues

- 4.9 In their responses to our consultation, stakeholders also raised a number of additional points of relevance to the setting of market arrangements for MPIs. These are outlined below for completeness.

Issues raised and commentary

Externalities

4.10 Throughout the consultation respondents were keen to flag the interaction with the emerging developments of the TCA Energy Title (especially the development of efficient cross-border electricity trading arrangements), Review of Electricity Market Arrangements (REMA), CfD reform and Carbon Border Adjustment Mechanism (CBAM). We are aware of these interactions and are engaging with the relevant stakeholders as part of MPI development.

Cross-border collaboration

4.11 Respondents have stressed the importance of collaborating (or at least consulting) with connected jurisdictions and with European level organisations such as ENTSO-E and NSEC in developing MPI market arrangements. We have engaged with such organisations on both a formal and informal basis and intend to continue to do so in the future.

Future technologies

4.12 One respondent noted that arrangements should accommodate alternative routes to market such as hydrogen, CCUS or storage. Several respondents noted the imminent development of meshed grids and how current arrangements may be optimised for easy transition. It may be possible to address some of these matters as part of the broader MPI regime design workstream.

Interconnector focus

4.13 Some respondents suggested that our consultation was too transmission system operator (TSO) -led, believing that MPI's led by OWF might be a better model. This ties in somewhat with comments made about the attractiveness of proposed market arrangements to OWF compared to their existing radial options. OWFs also found the IC/MPI pilot application windows for regulatory approval restrictive. Again, these points have been fed back to the MPI regime design workstream.

5. Conclusions and next steps

Outstanding issues

Trading arrangement certainty

- 5.1 Our position remains that implicit-OBZ is our lead option for cross-border trade across MPIs. As noted in earlier sections, optimal trading arrangements and, in turn, optimal bidding zone configurations will depend on the optimal future EU-UK cross-border trading arrangements. The UK continues to engage with the EU regarding the development of efficient EU-UK cross-border electricity trading arrangements. We will continue to consider the implications of these arrangements for MPI projects.

Contracts for difference development

- 5.2 We conclude that CfDs provide the preferred way of compensating OWFs for loss of revenue under a OBZ scenario, with work currently underway to better understand cost impacts. The upcoming CfD AR7 consultation will, following our consultation on MPI market arrangements, provide suggested solutions for OWF compensation. Each solution will be accompanied by a high-level assessment. Colleagues will consider how the proposals outlined in the AR7 consultation are received and we expect they may follow-up with further, more detailed consultation on these matters in late 2024.

Operability workstream

- 5.3 Significant work on system operability is required to enable us to implement the market arrangements discussed in this summary. Following the closure of the consultation, ESO established a new MPI workstream (WS4), as part of the aforementioned MFDG, to start to map out the operational and contractual relationships and requirements that will be necessary to implement OHAs, with an initial focus on NSIs. This work is ongoing and is being taken forward by specific focus groups tackling key issues and priorities agreed with the MFDG members. Further to this, the ESO has been carrying out extensive bilateral stakeholder engagement of their own with many of the stakeholders who responded to this consultation, as well as our European TSO partners.

Next steps in MPI development

MPI regime design and licensing

- 5.4 The Market Arrangements for MPIs consultation was published alongside another Ofgem consultation ('Policy Consultation on the Regulatory Framework for Offshore Hybrid Assets: Multi-Purpose Interconnectors and Non-Standard Interconnectors'), on regulatory regime design for Offshore Hybrid Assets.
- 5.5 Projects that have been progressing through the OHA pilot scheme have been prioritised for follow up to that consultation and decisions on regime design is being provided first for the NSIs in the OHA pilot scheme only. It is anticipated that a further decision on regime design for MPIs will follow in 2024.
- 5.6 Additionally, Ofgem and the Department of Energy Security and Net Zero have legislated for MPIs to be a new licensable activity through the Energy Act 2023. These provisions will come into force after DESNZ and Ofgem have undertaken a joint consultation in 2024 on the proposed MPI licence.

Timing and application windows

- 5.7 Following this response to our consultation on MPI market arrangements, both Ofgem and the Department of Energy Security and Net Zero will continue to progress the remaining issues outlined above and will consult further where necessary.
- 5.8 Although we expect there to be future IC/OHA application windows into which MPIs will be able to bid, the exact form and timing of these windows is yet to be determined. Mindful of the importance of regime certainty for developers, we intend to maintain our current pace in clarifying the remaining uncertainties around market arrangements so that much more of the scheme is clearly defined by the time that next window opens.

Appendix 1 – Non-confidential stakeholder responses

Twenty-two responses were received to the June 2023 Consultation on market arrangements for MPIs, of which seventeen were non-confidential and have been made available with this summary of responses.

List of published responses

1. EirGrid
2. Elia
3. EFET
4. EPEX SPOT
5. Equinor
6. ESB
7. Fred. Olsen Seawind
8. FrontierPower
9. Mainstream Renewable Power
10. MaresConnect
11. ESO
12. NGV
13. RWE
14. Scottish Renewables
15. Shell
16. SSE
17. Uniper