

# ESO Offshore Coordination Quarterly Update

Holistic Network Design and Follow Up Exercise, Codes, Connections and Offshore Hybrid Assets

December 2023

## 1. Introduction

In July 2022 we published *A Holistic Network Design for Offshore Wind*<sup>1</sup>, a first of its kind, integrated approach for connecting 23GW of offshore wind to Great Britain. Since then, we have been progressing work on the Holistic Network Design Follow Up Exercise (HNDFUE). The scope of the HNDFUE has been agreed through Terms of Reference, which can be found on the Department for Energy and Net Zero's (DESNZ) Offshore Transmission Network Review (OTNR) website<sup>2</sup>. In November 2022, we published *the Holistic Network Design Follow Up Exercise Methodology*<sup>3</sup>, which provides an overview of our approach to developing HNDFUE network designs.

In June 2023, we published our first update<sup>4</sup> to provide an overview of our ongoing Offshore Coordination work as the Electricity System Operator (ESO). Since then, we have provided quarterly updates, and this is our third.

The topics outlined in this document include updates on:

- **HNDFUE ScotWind** – the final recommended design for ScotWind projects in scope of the HNDFUE.
- **Innovation and Targeted Oil and Gas (INTOG)** – the INTOG process documents such as; Methodology, Unit Costs and Design Rules.
- **HNDFUE Celtic Sea** – the close collaboration with The Crown Estate (TCE) and the Celtic Sea HNDFUE process progress following TCE's market update.
- **Infrastructure Delivery Groups** – the progress of our HND Infrastructure Delivery Groups and the Impact Assessment submissions.
- **Offshore Hybrid Assets (OHAs)** – the Office of Gas and Electricity Markets (Ofgem) and DESNZ collaborating with the industry to determine how OHAs could be operated.
- **Code Modifications** – the progress of the Connections and Use of System Code (CUSC) modification proposals and inflight commercial code modifications.
- **Connections Reform** – the *Final Recommendations* published following our recent consultation.
- **TSCNP Publication** – the second Transitional Centralised Network Plan (TSCNP).
- **CSNP** – the methodology in Ofgem's consultation on the CSNP framework.
- **Autumn Statement and Nick Winser Recommendations** – our role as the ESO, in the recommendations made by Nick Winser on network planning and connections.

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<sup>1</sup> <https://www.nationalgrideso.com/future-energy/pathway-2030-holistic-network-design/holistic-network-design-offshore-wind>

<sup>2</sup> [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/1151585/otnr-holistic-network-design-follow-up-terms-of-reference-v4.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1151585/otnr-holistic-network-design-follow-up-terms-of-reference-v4.pdf)

<sup>3</sup> <https://www.nationalgrideso.com/document/270851/download>

<sup>4</sup> <https://www.nationalgrideso.com/document/281131/download>

## 2. HNDFUE

### 2.1 ScotWind

The final recommended design for ScotWind projects in scope of the Holistic Network Design Follow Up Exercise (HNDFUE) will be published as part of the second Transitional Centralised Strategic Network Plan (TCSNP2), as we move towards a whole system approach to network planning that will be undertaken by the Future System Operator (FSO), once established. Further details on the TCSNP2 follow later in section 6 of this update.

### 2.2 Innovation and Targeted Oil and Gas Leasing Round

Since our latest update we have been working on a variety of process documents such as; Methodology, Unit Costs and Design Rules. On 1 November 2023 we shared these with Innovation and Targeted Oil and Gas (INTOG) in scope developers alongside our provisional programme timeline and potential interface points which were provided by the TOs. We requested feedback from the developers on interface points, to support and inform our process. All information has also been provided to the Environmental Subgroup (ESG) for visibility also.

We have also been working on initial designs for INTOG and endeavour to share these with in scope developers and the ESG in the near future for initial feedback.

The next stage in the process is the Initial Strategic Options Appraisal process where we will appraise the design options against the four design objectives: Economic and Efficient, Deliverable and Operable, Environmental and Community.

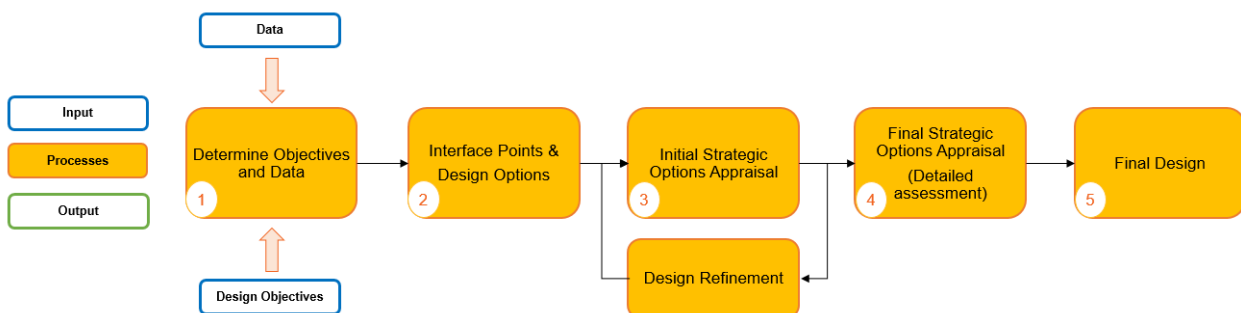


Figure 1: Overview of HNDFUE process

## 2.3 Celtic Sea

We are continuing our close collaboration with The Crown Estate (TCE) and the Celtic Sea HNDFUE process is reliant on inputs from TCE including the spatial detail and capacity of the Project Development Areas (PDAs). TCE published their confirmed PDAs on 2 October 2023<sup>5</sup> which allowed us to recommence the design process for the Celtic Sea HNDFUE.

The HNDFUE is now considering 4.5GW of floating offshore wind in the Celtic Sea. We have refined twenty-one design options to a shortlist of seven designs which we have shared with our Celtic Sea Working Group, our newly formed Celtic Sea Community Working Group and interested developers at our in-person developer workshop.

We have set up a Celtic Sea Community Working Group to bring together interested council officers to advise on possible community impacts of proposed designs in the Celtic Sea to inform the community design appraisal.

We will now commence the final strategic options appraisal process to reach the recommended design in March 2024.

If you are a developer interested in the Celtic Sea and haven't received any communications from us, please let us know by emailing [box.OffshoreCoord@nationalgridESO.com](mailto:box.OffshoreCoord@nationalgridESO.com).

## 3. Infrastructure Delivery Groups

### 3.1 Infrastructure Delivery Forums

The Infrastructure Delivery forums continue to be well attended. As the ScotWind HNDFUE design has been finalised, we have invited the developers of ScotWind HNDFUE projects to attend. We are currently reviewing the best format for these forums. We value input from members and to ensure stakeholders contributing to both HND and HNDFUE forums get the most benefit, we are trialling hosting two separate forums until the publication of TCSNP2.



### 3.2 Impact Assessment Process

As part of the Detailed Network Design (DND) phase, developers and TOs have identified potential design changes, which has required us to develop an impact assessment process to assess the impact of these changes against the four design criteria, compared to the baseline of the Holistic Network Design (HND)<sup>6</sup>.

Since our last update we have completed one impact assessment, and we are progressing with a second submission. The first impact assessment process, for the southern cluster of projects on the

<sup>5</sup> <https://www.thecrownestate.co.uk/our-business/marine/round-5-latest-update>

<sup>6</sup> [www.nationalgrideso.com/document/286776/download](http://www.nationalgrideso.com/document/286776/download)

east coast of the HND, is now complete and we are communicating outcomes and the necessary next steps with the affected parties.

We are also currently going through the process for the northern cluster of east coast HND projects, which will go through the same governance process. A summary of approved design changes will be shared via these regular updates at the appropriate time.

Having run through the impact assessment process a couple of times we have been able to identify where some improvements could be made so we are currently amending the process and templates. These updated documents will be available in January 2024 for future impact assessment submissions.

## 4. Offshore Hybrid Assets

In line with the OTNR in 2020 along with subsequent Ofgem and DESNZ consultations, we have been busy collaborating with the industry over the last few months, to determine how OHAs could be designed, controlled and operated at the same time considering what potential contractual relationship could look like.

An Offshore Hybrid Asset (OHA) (previously referred to as a Multi-purpose Interconnector (MPI)) combines the network infrastructure for offshore generation, wind in this case, with an interconnector to form a more efficient use of offshore assets and reduce costs to end consumers and minimise disruption to our coastal communities through coordination.

Subsets of OHAs are:

- Non-Standard Interconnectors (NSI)
- or
- Multi-purpose Interconnectors (MPI)

The key differences between the two are that an NSI combines an interconnector with offshore generation in non-Great British waters, whereas an MPI combines an interconnector with offshore generation in Great Britain's waters.

### 4.1 MPI Framework Discussion Group (MFDG)

As a result of the large number of areas identified that required consideration for an OHA, Ofgem established the MPI Framework Discussion Group (MFDG) which has been running for a couple of years now. The purpose of the MFDG is to develop proposals within the industry, for the commercial and regulatory frameworks that will apply to MPIs (now OHAs) and the windfarms that will connect to them. These proposals will then be subject to the usual industry consultation processes prior to being finalised by the relevant authority and implemented.

Open to any industry party, the MFDG established four workstreams (WSs):

- WS1 – Contracts for Difference: Lead: DESNZ
- WS2 – Licensing Lead: Ofgem

- WS3 – Charging and Market Arrangements      Lead: Ofgem and DESNZ
- WS4 – Operability      Lead: ESO

Ofgem expect to have the OHA Initial Project Assessment (IPA) decision by April 2024.

Through these WSs, we, as the ESO, interconnector and offshore wind developers, Ofgem and DESNZ are working closely to explore options in the following areas:

- Licensing arrangements and asset classification.
- Capacity, charging, access arrangements and support schemes.
- Operability of OHAs.
- Contractual arrangements including the Industry Codes and Standards to be applied.
- Market arrangements including bidding zone configuration.
- Interaction with European markets and European network planning.
- Interaction with wider framework reforms, for example Review of Electricity Market Arrangements<sup>7</sup> (REMA).

Running in parallel to the above WS4 - we have established a number of external focus groups to discuss in more detail, different technical and contracting options of OHAs. We are working to share the WS4 OHA Operability Report with the industry around March 2024.

In our September 2023 update, we said that DESNZ and Ofgem had published the two consultations in the summer, these were:

- Ofgem Consultation on the Regulatory Framework for Offshore Hybrid Assets: Multipurpose Interconnectors and Non-standard Interconnectors.
- Ofgem/DESNZ consultation on the market arrangements for Multipurpose Interconnectors.

Both are on the Ofgem website<sup>8</sup>. Following the receipt of responses to the consultations, Ofgem, DESNZ and the industry are continuing to engage to progress options and outcomes further over the next few months.

## 5. Codes


In our September 2023 update, we outlined the Connection and Use of System Code<sup>9</sup> (CUSC) Modification Proposals (CMPs) relating to Offshore Coordination that were going through the standard industry governance process and provided an overview of the Codes and Standards Subgroup. Further to this update, we have made progress on the following modifications to the CUSC:

<sup>7</sup> <https://www.nationalgrideso.com/future-energy/projects/net-zero-market-reform>

<sup>8</sup> <https://www.ofgem.gov.uk/publications/consultation-regulatory-framework-including-market-arrangements-offshore-hybrid-assets-multi-purpose-interconnectors-and-non-standard-interconnectors>

<sup>9</sup> <https://www.nationalgrideso.com/industry-information/codes/connection-and-use-system-code-cusc>



- **CMP402 - Extension of current User Commitment Principles to incorporate Anticipatory Investment (AI).** This modification aims to make changes to the current User Commitment provisions in CUSC section 15 to introduce AI principles for offshore generators connecting at different times to non-radial offshore transmission. Following the consultation phase which concluded on 21 June 2023, we have put forward an alternative solution to our original proposal to take into consideration industry feedback. There are two further workgroup meetings planned in December to provide further details on the rationale for the solution and discuss through the analysis. This will be followed up by a further workgroup consultation running from late December to mid-January. We expect the modification to go to Ofgem in May 2024 and be implemented into CUSC in Q4 2024.
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- **CMP411 – Introduction of Anticipatory Investment (AI) within the Section 14 Charging Methodologies.** CMP411 seeks to introduce AI and a mechanism for the recovery of AI costs within the Section 14 Charging Methodologies. The workgroup consultation closed on 7 July 2023 and further workgroup meetings were held during July and August. A code administrator consultation ran from 6 – 27 November and the modification is due to go to Ofgem for a decision in January 2024 with implementation due in April 2025.
  - **CMP419 – Review the Generation Zoning Methodology.** This modification looks to review the existing generation zoning methodology to incorporate offshore assets connected as part of the HND to enable the wider tariff to be applied to offshore generators. The proposal seeks to also revisit the issue of zoning further to the expectations set out as part of the authority decision on CMP324 and CMP325<sup>10</sup>. This modification was raised in August 2023 and two working groups have been held during October and November to discuss the solution. In terms of next steps, the approach to the analysis will be discussed in the working group in December, with further work groups planned during 2024 to discuss the analysis and progress the proposal.
  - **CMP376 - Queue Management.** Development of this code modification was resumed in September 2022 and, and it seeks to create the ability to terminate a project if it has not met pre-agreed milestones. This modification went to Ofgem in June 2023 and the authority approved the modification on 13 November 2023, implementation took place on 27 November 2023.
  - **Technical Codes.** A Supply and Quality of Supply Standard (SQSS) modification which aims to expand the current definition of offshore electricity system to include multiple interface/Grid Entry points will look to be proposed to the SQSS panel in the new year. We are also having bilateral discussions with partners on the west coast to assess requirements for the direct current (DC) T-point connection. This is an ongoing piece of work, and we look forward to presenting our findings for code changes to the industry in early 2024.

<sup>10</sup> CMP324 & CMP325: Generation Zones – changes for RIIO-T2' & 'Rezoning – CMP324 expansion | ESO (nationalgrideso.com)

## 6. Connections Reform

Our connections reform programme published its *Final Recommendations*<sup>11</sup> on 5 December which outlines our concluding proposals and implementation strategy. This work aligns with the *Connections Action Plan* published by Ofgem and DESNZ. We will continue to work with government, Ofgem and you to drive these changes, enabling businesses to connect to the network when they are ready and ensure the network is built with minimal impact on communities and the environment. In December we hosted a webinar and seminar for our final Connections Reform recommendations. There were presentations on the future of Connections Reform, insightful discussions and networking opportunities with industry experts – the materials will be on the ESO website soon<sup>12</sup>.

We also have several short-term initiatives through our five-point plan. Most recently, Ofgem has approved Code Modification CMP376<sup>13</sup> – Inclusion of Queue Management<sup>14</sup> process within the Connection and Use of System Code (CUSC). This modification will allow us to proactively manage the connections queue, one of the key components of our five-point plan to speed up grid connections and evolve our network to make it fit for the future, deliver net zero, and keep clean power flowing across Great Britain.

Please get in touch with the Connections Reform team via [box.connectionsreform@nationalgrideso.com](mailto:box.connectionsreform@nationalgrideso.com) and subscribe to the mailing list<sup>15</sup>.

## 7. Transitional Centralised Strategic Network Plan 2 Publication (TCSNP2)

One of our current key responsibilities is to assess the country's future energy supply and demand needs and then design a coordinated Great Britain (GB)-wide electricity network that can best meet those needs in a safe, efficient and affordable way. The process involves assessing a range of different network and non-network-based solutions to ensure electricity can get where it is needed, when it is needed, working in close collaboration with transmission network companies throughout. As so much of our future energy will come from offshore wind generation, our network planning publication contains both onshore and offshore elements. We are now designing the network for scenarios post 2030 and reporting on these designs within our TCSNP publication.

We have finalised the offshore elements of the TCSNP2, through our HNDPUE project which designed connections of over 20GWs of offshore generation into GB. We are now currently finalising the onshore elements of our network plan which includes a network options assessment. During this process, the proposed network infrastructure is balanced against these four quantifiable criteria:

- delivered at the lowest cost to bill payers,
- can be delivered and be operationalised in time,

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<sup>11</sup> <https://www.nationalgrideso.com/industry-information/connections/connections-reform#Key-documents>

<sup>12</sup> <https://www.nationalgrideso.com/industry-information/connections/connections-reform>

<sup>13</sup> <https://www.nationalgrideso.com/industry-information/codes/cusc/modifications/cmp376-inclusion-queue-management-process-within-cusc>

<sup>14</sup> <https://www.nationalgrideso.com/industry-information/connections/queue-management>

<sup>15</sup> <https://subscribers.nationalgrid.co.uk/h/d/26CD448E3AF68228>



- have minimal impact on the on and offshore environment and
- minimal impact on the communities that host this infrastructure.

The main body of the publication is currently in development, and we have recently received a derogation from Ofgem<sup>16</sup> which extends our delivery of the deadline to March 2024. The TOs, DESNZ and Ofgem requested an additional governance process as we make decision on these significant strategic investments.

## 8. Centralised Strategic Network Plan (CSNP)

We are currently developing a high-level initial methodology which will centre around the proposed areas of change in Ofgem’s consultation on the CSNP framework. It will capture the key processes of the new framework, concentrating on electricity transmission network planning.

We propose to focus on areas of significant change from our current approach to network planning. For example, we will outline our current thinking on how we will expand our capabilities to analyse year-round system needs across the transmission network, how environmental and community impacts can be considered at the high-level design stage and how we will develop the framework to allow TOs and third parties to develop network options.

We intend to conduct a comprehensive consultation in early 2024 to provide opportunity for feedback from a broad range of stakeholders before we publish a more comprehensive, final methodology for the CSNP later in 2024.

### How can you get involved?

We welcome your thoughts and feedback on our developing approach as well as capturing your priorities in the initial version of the methodology. If you would like to get involved, please email [box.NPR@nationalgrid.com](mailto:box.NPR@nationalgrid.com).

## 9. Autumn Statement, Transmission Acceleration Action Plan and Connections Action Plan

On 22 November 2023, the Government published its Autumn Statement and supporting action plans<sup>17</sup>. As part of this, they set out plans to speed up connections and increase grid capacity to boost energy security.

The statement included updates on network planning, connections and outlined our role in meeting Electricity Networks Commissioner’s recommendations from the independent report ‘*Accelerating electricity transmission network deployment*’. In response to the statement, ESO Executive Director, Fintan Slye, said:

*“The ESO welcomes the strong package of reforms announced by the Chancellor, which will help ensure our energy system is fit for the future. Great Britain’s energy grids are the backbone of our*

<sup>16</sup> <https://www.ofgem.gov.uk/publications/decision-allowing-national-grid-electricity-system-operator-limited-delay-publishing-noa-and-etys-31-march-2024>

<sup>17</sup> <https://www.gov.uk/government/news/huge-boost-for-uk-green-industries-with-960-million-government-investment-and-major-reform-of-power-network>

*economy and it's imperative that we drive through urgent reforms to ensure grid access improves. These reforms both acknowledge the scale of energy production and network infrastructure required for future generations whilst ensuring communities hosting the infrastructure receive appropriate compensation. We look forward to continuing to work in lockstep with both governments, Ofgem and industry to drive these changes through, ensuring businesses can connect into the network when they are ready and that network is built in the right time, at the right place, with minimised impact on communities and the environment to facilitate these connections."*

## Strategic spatial planning (SSEP)

The government has committed to working with FSO to produce a Strategic Spatial Energy Plan (SSEP), to bridge the gap between government policy and infrastructure development plans. This will be a high-level plan which will inform and be informed by more detailed individual plans (for example, the Centralised Strategic Network Plan for electricity networks). A more strategic approach to spatial planning is intended to make clearer the overall geographic requirements for the energy system and increase efficiency in the system, resulting in cheaper transmission costs for generators and consumers of electricity.

The SSEP aims to accelerate end to end delivery of energy infrastructure by:

- Supporting decision-making around locational aspects of planning.
- Providing confidence to industry and investors by providing a long-term guarantee of demand.
- Informing early decision making around investment to reduce lead in times and constraints.
- Providing credibility and authority to locational decisions on infrastructure build at a local level.
- Incorporating environmental assessments and community engagement.

You can expect to hear more about our engagement plan and the timescales for the output of the SSEP soon. Please email [box.ssep@nationalgrideso.com](mailto:box.ssep@nationalgrideso.com) if you have any questions.

If you have questions, please get in touch with us via [box.OffshoreCoord@nationalgridESO.com](mailto:box.OffshoreCoord@nationalgridESO.com). Our next *Quarterly Update* will be in March 2024.

Offshore Coordination, **ESO**