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## Centralised Strategic Network Plan: Consultation on Stage 1 – modelling future supply and demand

### Response from The Crown Estate

July 2023

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#### 1 Key messages

- The Crown Estate supports the proposed new strategic approach for modelling future supply and demand. Adopting a single central estimate in the short term with pathways over the medium to longer term should provide more certain signals as to the infrastructure investment that is required to deliver against the nation's Net Zero commitments. We particularly welcome the supporting rationale in the consultation includes references to speeding up and supporting 'needs case' approvals for network investment. Accelerating grid connections for offshore wind (and other technologies) is a priority if the nation is to decarbonise the power sector by 2035 and meet Net Zero commitments by 2050.
- The UK's seabed is at a moment of transition with more demands on it than ever before. To support the delivery of multiple priorities, including Net Zero and nature recovery, we recently commenced pioneering work to digitally map the seabed resource across England, Wales and Northern Ireland to meet future demands<sup>1</sup>, as part of our Whole of Seabed programme. This work will build an integrated spatial analysis platform that provides a cross-sectoral analysis<sup>2</sup> of demand and supply for marine space and produce scenarios to 2050 that support decision-making on 'what', 'where' and 'when' space is used. We also envisage it will inform a routemap to support action from policy to delivery. We believe there will be an important inter-relationship between this Whole of Seabed and routemap activity and the development of the Centralised Strategic Network Plan (CSNP), which we have summarised in the figure presented in Annex 1. We are keen to explore this inter-relationship in further detail with Ofgem over the coming months to support more detailed definition of the CSNP, including with respect to information flows and feedback loops.
- Given the role that marine energy technologies are expected to play in the future integrated energy system, we ask that the governance of the CSNP requires the Future System Operator (FSO) to consult widely with and seek inputs from key stakeholders including The Crown Estate. We already work closely with National Grid ESO to improve the coordination of offshore wind and transmission infrastructure under a bilateral

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<sup>1</sup> [2023 - The Crown Estate to digitally map scenarios to inform co-ordinated approach to future seabed use](#)

<sup>2</sup> Initially our activity is focussing on those sectors which have high demand for seabed use including offshore wind, energy export cables, aggregates, telecom cables, CCUS, and nature recovery.

Statement of Intent that we entered into in Autumn 2021<sup>3</sup>, which has been successful to date. In the light of work referenced above, we envisage more in-depth collaboration will be necessary with organisations like the FSO to help ensure there is common understanding of both opportunity and also constraints (for example in terms of competing demands or spatial restrictions on the seabed and what this could mean for deployment). We look forward to engaging with Ofgem further on the appropriate institutional arrangements around the CSNP, including the role of The Crown Estate.

- Important assumptions will need to be in the modelling about the current portfolio of operating offshore wind projects. However, there remains some uncertainty in key policy areas relating to later life which, if left unresolved, could impact on the modelling – for example in terms of the economic support available to projects after the end of the RO/CfD period and the arrangements for remunerating OFTOs after their Tender Revenue Stream period has expired. Whilst we recognise that this consultation is not the vehicle to address such issues, timely resolution will help provide a more certain investment landscape for operators and support more accurate modelling outcomes. We will continue to support Ofgem and Government to put in place policy solutions in these areas, including providing evidence and data where appropriate.

## **2 The Crown Estate**

### **2.1 Who we are**

The Crown Estate is a purpose-driven and unique business with a diverse portfolio. We manage the seabed and around half the foreshore in England, Wales and Northern Ireland, playing a fundamental role in the sustainable development of these important national assets and using data and evidence to facilitate co-location and greater spatial coordination between activities.

Our ownership also includes a substantial rural portfolio, including the world-renowned Windsor Great Park. Alongside this, we operate some of central London's best places to work, shop and experience, as well as regional retail and leisure destinations across the country.

Established by an Act of Parliament, The Crown Estate works to create social, environmental and financial value, both now and for the future, for its customers, partners and the nation. We generate 100% of our net revenue profit for the benefit of the nation, contributing £3 billion to the public purse over the last ten years.

### **2.2 Our purpose**

As a business, we actively deliver against our purpose, which is to create lasting and shared prosperity for the nation. We believe we are well placed to create financial, environmental and social value holistically today and for future generations, by drawing upon our unique attributes to address long-term trends and national needs. Combining our independence and scale of ownership with our ability to convene multiple stakeholders and take a long-term view with patient financial capital, we can play a significant role in creating and accelerating new opportunities –

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<sup>3</sup> [The Crown Estate, Crown Estate Scotland and National Grid ESO announce partnership, to improve coordination of offshore wind transmission infrastructure \(1\)](#)

including for the growth of renewable energy. We drive our purposeful activity through three strategic objectives, to:

- Take a leading role in stewarding the UK's natural environment and biodiversity,
- Be a leader in supporting the UK towards a net zero carbon future, and
- Help create thriving communities and renew urban centres across the UK

### 3 Our response

The Crown Estate notes that many of the questions raised in the consultation are technical or administrative in nature, and as such we are not best placed to provide evidence and/or comment in respect of most of them. However, we set out below answers in those areas where we consider we can usefully input. This feedback is informed by our statutory duties, strategy, and expertise, and we are happy to continue to engage and offer further input to support the review.

#### 3.1 Responses to specific questions

##### **Q1: Do you agree that we should move towards pathways instead of scenarios, to provide greater clarity on the type of investments required under the CSNP?**

National Grid's Future Energy Scenarios (FES) are a well-respected and authoritative resource, and a publication that The Crown Estate has used in a range of ways over the last decade. We agree however with the statement in the consultation that continuing to have four equally credible outcomes for the energy system does not provide the necessary strategic view of how the energy system should or indeed needs to evolve over the short, medium or long terms in the context of the nation's Net Zero emissions commitments. We also agree with the premise that a more directive approach is needed going forward in order to provide all stakeholders with greater clarity and certainty on what is likely to be needed in terms of investment and related enabling actions. As such, we support the proposed pathways approach, which should provide greater certainty for the investment that will be necessary to meet the nation's Net Zero targets.

We ask that in constructing the initial pathway and subsequent updates that a broad range of inputs are incorporated to ensure long term robustness of the new resource, linked to the FSO's proposed remit on whole system planning. Specifically, we ask that appropriate emphasis is placed on marine spatial considerations. We know that decarbonising the power system by 2035 – and delivering the nation's legally binding Net Zero greenhouse gas emissions targets by 2050 – will be built on a foundation of offshore wind supplying a large proportion of the UK's electricity needs. National Grid ESO's current FES scenarios published in July 2023<sup>4</sup> suggest there could be up to 89GW of capacity in operation by 2035, with up to 123GW in operation by 2050<sup>5</sup>. However, the marine space is becoming increasingly constrained as the number of feasible uses of the seabed increase, alongside the increased deployment of existing technologies. For example, we expect to see new large-scale uses of the seabed over the coming decade for CO<sub>2</sub> storage and hydrogen production, as well developments in tidal stream and tidal range. We also expect to see increasing areas of the marine environment which are dedicated to support

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<sup>4</sup> [Future Energy Scenarios | ESO \(nationalgrideso.com\)](#)

<sup>5</sup> Offshore wind capacity inclusive of 'non-networked' capacity.

biodiversity and conservation initiatives. These new demands for seabed space coexist not only with the needs of the offshore wind industry, but also with other established sectors such as marine aggregates extraction, telecoms and electricity interconnectors – all of which are projected to grow over the near to medium term also. Furthermore, significant areas of the marine environment are already dedicated to other uses including shipping, fishing, military and existing environmental designations.

It is clear therefore that the seabed is facing a moment of transition with more demands on it than ever before. To enable delivery of multiple priorities including Net Zero and nature recovery, we recently commenced pioneering work to digitally map the seabed resource to meet future demands). As part of this Whole of Seabed programme, we will build an integrated spatial analysis platform which will consider: (i) existing and future demands on the seabed out to 2050, (ii) geographical constraints for all key offshore sectors, (iii) existing infrastructure and (iv) environmental designations and future resource requirements for environmental habitats and nature recovery. We are progressing this work in collaboration with a wide number of organisations including DESNZ, Defra, the MMO, marine planning bodies from Northern Ireland, Scotland and Wales, Ofgem, the NSTA and National Grid ESO, with the outputs also informing other initiatives including Defra's Marine Spatial Prioritisation programme and the OTNR.

We believe that the outputs from our Whole of Seabed programme will be of key importance to the development of the future pathways that will underpin the CSNP, and we have developed a graphic that illustrates their proposed inter-relationship (Annex 1). In overview, we envisage that (i) the CSNP could provide the context within which future seabed leasing is taken forward and (ii) our scenarios and wider evidence base from our Whole of Seabed work could actively inform the inputs to the CSNP – thus creating an iterative process. We are keen to explore this in further detail with Ofgem, including appropriate governance arrangements around how data from our process could be utilised and the requirements on the FSO to formally consult stakeholders including The Crown Estate as it develops the pathways.

**Q2: Do you agree that there should be a single forward view of the near term for all pathways?**

The Crown Estate agrees that for the near term, there is merit in adopting a single view for all pathways, formed from a collaborative process taking the necessary inputs from organisations such as ourselves. As per set out in our answer to Question 1, such a directive approach should provide all stakeholders with greater clarity and certainty on what is likely to be needed in terms of investment and related enabling actions. Furthermore, in respect offshore wind, a single view reflects the reality of the outcomes of successive seabed leasing processes. The outcomes from our 2017 extensions leasing opportunity<sup>6</sup> and Round 4<sup>7</sup> have (and in due course from our planned floating wind leasing opportunity in the Celtic Sea<sup>8</sup> will) determine the locations for offshore wind development in English and Welsh waters<sup>9</sup> for around the next decade. Whilst there may be attrition as projects develop, the areas of seabed under lease are already largely defined and

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<sup>6</sup> [Offshore wind extension projects 2017 | Offshore wind extension projects 2017 \(thecrownestate.co.uk\)](https://www.thecrownestate.co.uk/offshore-wind-extension-projects-2017)

<sup>7</sup> [Offshore Wind Leasing Round 4 | Offshore Wind Leasing Round 4 \(thecrownestate.co.uk\)](https://www.thecrownestate.co.uk/offshore-wind-leasing-round-4)

<sup>8</sup> [Floating offshore wind | Floating offshore wind \(thecrownestate.co.uk\)](https://www.thecrownestate.co.uk/floating-offshore-wind)

<sup>9</sup> Crown Estate Scotland grants seabed rights in Scottish waters

National Grid ESO's Holistic Network Design (HND) and HND Follow Up Exercise (HNDFUE) processes are setting out the high-level designs required to connect the generation capacity. We continue to work with National Grid ESO to support the development of these processes.

The proposal over the medium to longer term to have multiple pathways branching from this single view is sensible as this reflects greater uncertainty as to future development needs across multiple sectors, particularly those that are less mature such as CCUS and hydrogen. We recognise the importance such medium/long-term pathways in providing clarity of the decisions, knowledge and evidence gaps, and innovation pathways that will be needed to inform the future single near term view.

**Q4: Do you agree that the pathways should run to 2050, and if not, why not?**

We agree it is sensible for the pathways to run to 2050 given this is consistent with the nation's Net Zero targets and is the focal point for action. Further, our current work to digitally map the seabed resource and develop multi-sector scenarios (see response to question 1 for further detail) will out-turn scenarios to 2050 to support decisions on 'what', 'where' and 'when' space is used. We envisage that the evidence base emerging from this process will be of key importance to support the integrated view of energy system supply and demand modelling that will underpin the CSNP. We look forward to exploring this inter-relationship with Ofgem in more detail during the coming months.

We would also expect there to be a mechanism built into the FSO's process that, at an appropriate point, enables the FSO to model the pathways beyond 2050 given some assets that are currently operational (and certainly those installed later this decade and into the early 2030s) will very likely still be operating beyond this date. As more renewable capacity comes online, this operational fleet will become of increasing strategic importance, both in terms of generating renewable power but also in terms of the implications of decisions on re-powering and/or decommissioning (given this will be a determinant of how much new offshore wind will be required and when). Whilst we recognise that this consultation is not focussing on regulatory frameworks, it will be important that outstanding policy issues that will inform decisions on how long operating projects continue in operation for (such as related to economic support for renewables after the end of the RO/CfD period and the arrangements for remunerating OFTOs after the end of their Tender Revenue Stream period) are resolved to help provide a more certain investment landscape. Clarifying these arrangements will be important for the future pathways up to and beyond 2050.

**Q6: Do you agree with our consultation position on modelling network constraints?**

We note that section 3 of the consultation sets out that in order to perform its strategic advisory role, the FSO should be able to advise Government and Ofgem where new generation should be located – and that to do so the FSO would need to take into account constraints when establishing new pathways. We do not have explicit comment on the proposed inclusion of network constraints in the modelling per se, but we want to take this opportunity to highlight The Crown Estate's role in seabed leasing, which will be an important determinant of where offshore wind projects (and other marine energy technologies) locate, and this will be relevant in the modelling of network constraints.

In outline, The Crown Estate manages the seabed and around half the foreshore in England, Wales and Northern Ireland, playing a fundamental role in the sustainable development of this important national asset. We use data and evidence to fulfil our role, such that areas of seabed are made available for development – through the grant of leases or licences – in a way which optimises use of an increasingly constrained space. Since the early days of the offshore wind industry, we have managed a number of major offshore wind leasing rounds in UK waters, supplemented by project extensions opportunities and test and demonstration leasing. This activity provides project developers with lease agreements conveying long-term exclusive rights over parts of the seabed for the development and operation of offshore wind farms and their cables back to shore. Our approach to leasing has evolved over time. Offshore Wind Leasing Round 4 was the first leasing round in a decade when it launched in Autumn 2019, and there was a step-change of approach whereby we undertook extensive analysis of the technical resource and constraints on the seabed to inform decision making on those areas that offered the most favourable development resource. This analytical approach and resulting evidence base was informed by extensive engagement with stakeholders, with outputs placed into the public domain on our Marine Data Exchange<sup>10</sup>. We are building on our approach for our planned leasing round for floating wind in the Celtic Sea which is intended to deliver up to 4GW of floating offshore wind power by 2035. We have identified what we term ‘Refined Areas of Search’ within which projects will be located. These will be further refined into Project Development Areas in due course – so seabed areas that are to a greater level of locational specificity than Round 4.

The combined seabed leasing activity we and Crown Estate Scotland has undertaken means that there is over 80GW of seabed rights already granted, which means that the locations for offshore wind power over the foreseeable future have largely been set, underpinned by detailed technical resource analysis and spatial characterisation. Network design and planning for these projects is being taken forward via the HND and HNDFUE processes.

The introduction of the CSNP presents an opportunity however for future seabed leasing activity<sup>11</sup> to be informed by this strategic plan – and for the supply and demand scenarios that underpin the CSNP to incorporate relevant evidence from our Whole of Seabed programme (see response to question 1 for further detail). We are keen to explore this inter-relationship in further detail with Ofgem over the coming months to support more detailed definition of the CSNP, including with respect to information flows and feedback loops.

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<sup>10</sup> [Marine Data Exchange](#)

<sup>11</sup> For offshore wind, other offshore renewable technologies and also other forms of energy infrastructure such as for CCUS and hydrogen production.

## Concluding remarks

We trust that you will find our comments on the consultation constructive. We would be willing to engage further and provide additional information on any of the points we have raised.

All of this response may be put into the public domain and there is no part of it that should be treated as confidential.

Yours Sincerely,

A handwritten signature in black ink, appearing to be 'Richard Clay', written in a cursive style.

Richard Clay,  
**Senior Manager, Energy Policy & Regulation**

## Annex 1: Illustration of potential inter-relationship between TCE's Whole of Seabed activity and the CSNP

