

# Strategic Spatial Energy Plan (SSEP) technical webinar: 30<sup>th</sup> January

## Q&A summary

### About this document

This document follows the Strategic Spatial Energy Plan (SSEP) technical webinar, which was held on 30 January and attended by over 400 participants. Slides and the recording from the webinar are available on the NESO website [Strategic Spatial Energy Planning \(SSEP\) | National Energy System Operator](#). To provide additional information in line with the significant number of questions received during the webinar, we have grouped questions into themes and responses are provided within this document.

### Background to the SSEP

The UK’s 2023 Energy Act established an independent system planner and operator to help accelerate GB’s energy transition – creating NESO. We bring an independent, impartial voice to energy system planning and operations. The UK Government, Scottish Government and Welsh Government have asked NESO to prepare the SSEP. This is part of a wider strategic energy planning landscape that will enable us to achieve clean power by 2030 and net zero by 2050.

The SSEP will help accelerate and optimise the transition to clean, affordable and secure energy in Great Britain by providing greater clarity to industry, investors, consumers and the public on the shape of our future reformed energy system. Since net zero by 2050 is in UK law, any deviation from this target would require approval from government department(s).

### Longevity and future iterations of the SSEP

Any future iterations of the SSEP would need to be done in conversation with government bodies. We would need to consider the balance between the need for continuity for investors and developers, and the flexibility to ensure the process reacts to changes in the market and technological developments.

### Different technologies

We received a number of technology-specific questions, focusing on operational life of current assets as well as options for long term storage.

Our input costs for each technology and their build rates come from the UK government. Where there is certainty around the technologies, we explore varying these inputs. The

geospatial model considers technical engineering design requirements, meaning it takes into account those engineering requirements and considers how different types of energy technologies have different technical and locational requirements. This involves evaluating factors such as terrain, footprint and seabed conditions, access to relevant resources (such as wind speed, solar irradiation and water availability), resilience to hazard (for example, land stability and flood risk), access to transport (including ports and roads) and network proximity (the distance from generation to network).

With regards to the role of hydrogen, the SSEP commission we received from UK, Scottish and Welsh governments specified that hydrogen generation and storage infrastructure should be included in the first iteration of the SSEP, to support decisions to shape the future of hydrogen in GB. We will be exploring the role of hydrogen providing essential long-duration storage and balancing supply and demand for a decarbonised system. It will also ensure there is hydrogen available to supply expected demand, including and beyond the energy sector.

For onshore wind, considerations will be given to operational life, build limits, and spatial/geospatial constraints.

The SSEP consultation in early 2027 will set out the proposed capacities and timescales for the different technology types.

### **Reformed National Pricing (RNP) and Transmission Network Use of System (TNUoS) charges**

The government’s decision to progress with reformed national pricing puts the SSEP at the heart of providing the primary long-term locational signal to investors. Once the SSEP is endorsed, the implementation of the Plan sits across a range of levers, including status in planning, flow through to network planning, relationship to connections regime and to other market signals. The owners of these levers sit across Government, Ofgem and NESO and a co-ordinated approach, led by the UK Government, is being taken to ensure all these signals are aligned.

One of the elements under review in the RNP package is network charging. The SSEP economic modelling aims to minimise total system costs across both networks and generation, without being constrained by current market design features such as transmission or locational charging signals. Its aim is to identify the optimal locations for new generation to connect from the outset, rather than relying on existing charging incentives to influence behaviour after connection. Because current charging arrangements may change over time, the decision was made not to base long-term planning on them. As a result, transmission costs are treated as part of future expansion requirements rather than existing infrastructure.

Public

## Spatial evaluation

SSEP’s spatial evaluation framework considers environmental, societal, other spatial uses and technical engineering design requirements for each of the in-scope technologies within the energy system – considering both the spatial constraints and potential opportunities of those locations.

Three spatial assessments – spatial exclusion, spatial suitability and contextual overlays – will help us identify the optimal zonal locations for in-scope technologies. This process helps us identify the areas of lowest impact and we then balance it against the requirements of economic modelling in each zone.

Spatial opportunities and constraints are illustrated by a hexagonal mesh that produces a summarised score of all interacting spatial factors within these areas. The hexagon mesh method allows a universally consistent spatial analysis to clearly define more favourable areas. The granularity can be adjusted to the different sizes of the hexagon mesh. We are currently working with an average size of 70 hectares per hexagon.

To make our work as open as possible, we published the first of our transparency updates in November 2025 and provided an update to it in February 2026. This update shared more detail on the data and information being used to develop the plan as well as explaining constraints and our assurance process. The latest update can be found here: <https://www.neso.energy/what-we-do/strategic-planning/strategic-spatial-energy-planning-ssep>

The full list of indicators used within the Spatial Evaluation Framework, and the publicly available data sources used in its development, can be viewed here: <https://www.neso.energy/document/371256/download>

Co-location is considered within the spatial evaluation process. While co-location is often project-specific, more developers are now exploring it in their designs. Because SSEP operates at a strategic level rather than a site-specific one, we are developing a matrix to identify the most likely technology pairings for co-location. Using geospatial modelling, we assess suitable areas for each infrastructure type and highlight where these areas overlap, revealing strategic opportunities—such as potential co-location of battery energy storage systems (BESS) and onshore wind.

The SSEP baseline comprises the network and generation included in the UK Government’s CP2030 Action Plan and projects which have regulatory funding.

Projects with regulatory funding include projects which hold a Contract for Difference, capacity market contracts, those with interconnector cap and floor arrangements, designation to receive funding through the nuclear Regulated Asset Base model or merchant interconnector approval (via the relevant exceptions process with Ofgem).

Public

We know that since the CP2030 Action Plan was released there has been new intelligence that means that some of those capacity volumes might change. We will not be adjusting the baseline, as for modelling purposes we need this to be consistent and the market intelligence is evolving regularly. We will, however, be applying sensitivity testing and potential adjustments to the outputs to ensure that pathways are compatible with the latest market developments.

### **Economic modelling**

SSEP does not use a simple ‘£ per tonne of carbon saved’ metric to decide what infrastructure to build. Instead, it looks at whole-system cost-effectiveness within a pathway that aligns with meeting net zero, including energy sector decarbonisation targets and emissions removals needed to offset other sectors of the economy.

The economic model will find the optimal solution, meaning it finds the lowest cost solution for the system. This will factor in building new assets (generators, interconnectors, networks) and the cost to generate electricity.

The modelling also optimises the technology mix and siting across network boundaries to minimise total system costs, leading it to deploy electrolyzers in areas with abundant and, sometimes, constrained renewable generation.

It is possible to explore sensitivities around net zero, for example, examining what happens to system build-out if emissions targets are not fully met, but this would be assessed primarily from a robustness and system-response perspective. We are still finalising our approach to sensitivity analysis and we will take this into consideration.

### **Energy security**

We are considering security of supply, with reserve margins modelled and working closely with other NESO teams but not explicitly modelling the loss of generation due to any external interaction. The objective of the SSEP is to find the optimal values, with no attrition assumed, or assumptions on “over” preparing for any future case.

### **Policy alignment**

The SSEP pathway options will be shared with Welsh and Scottish energy ministers for their views before the Secretary of State for Energy Security and Net Zero makes a final choice on a single pathway option. Given the significance of this, we have worked, and will continue to work closely with UK, Scottish and Welsh government and other key stakeholders throughout the development of the SSEP to support the goal of creating a plan that UK and devolved governments can endorse.

Public

For example, our modelling does not explicitly require the Scottish Government offshore wind policy to be met, but we do acknowledge these ambitions and have defined some pathway themes with these in mind.

### **Environment**

For the SSEP, environmental designations are treated as constraints rather than exclusions. A spatial exclusion is defined as a ‘factor that prevents the siting of in-scope energy infrastructure due to physical, legal, or land and sea-use restrictions’. When these exclusions are applied in the modelling, they identify where certain technologies cannot be located. However, through policy review and engagement with expert working groups, we determined that internationally designated sites do not meet this definition. Development in these areas may still be permitted under exceptional circumstances, including where there are overriding reasons of public interest.

### **Engagement**

Engagement with SSEP expert working groups and key stakeholders has been ongoing. A summary of the engagement activities and the main themes of stakeholder feedback is available in our SSEP spatial evaluation feedback summary:

<https://www.neso.energy/document/371236/download>

We have considered stakeholder feedback carefully and, in the context of the commission, we will share information on the modelling outputs with our expert working groups, societal forum members and community representatives.

This will provide greater transparency and the opportunity for additional input on the development of the pathway options to be presented to the UK Energy Secretary.

The final SSEP will be delivered in Autumn 2027, with pathway options submitted for decision by the UK Energy Secretary in summer 2026 and public consultation on the draft SSEP early 2027.

For any further queries, please contact the SSEP email address [box.ssep@neso.energy](mailto:box.ssep@neso.energy).