

Public

Long Duration Energy Storage Advice

Annex 1: Cover letter

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Contents

Context	3
NESO's duty to provide advice	4
Scope of advice and approach	5
Stakeholder engagement	6

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Context

NESO was asked by the Department of Energy Security and Net Zero (DESNZ) to provide advice on specific parts of the proposed Long Duration Energy Storage (LDES) cap and floor scheme. This advice is provided in accordance with our statutory duties set out in paragraph 171 of the Energy Act 2023. These reports, split across two documents, form our response to that request.

DESNZ asked us three questions:

- 1) Advice from an electricity system perspective on the costs and benefits of:
 - a. increasing the minimum duration for a qualifying LDES asset to beyond 6 hours, and what an optimal minimum duration might be.
 - b. lowering the minimum capacity required for eligibility for Stream 2 projects.
- 2) The full range of electricity system benefits and costs from LDES which Ofgem should take into account when assessing project cap and floor applications.
- 3) The amount of LDES capacity, which can be expressed as a range, that would be optimal for Ofgem to support with cap and floor agreements through its first LDES allocation round to open in 2025. In particular, how much additional LDES cap and floor capacity beyond that in your clean power 2030 advice would be optimal to maintain clean power and energy security in the period from 2030 to 2035.

Our advice was provided directly to DESNZ in January 2025 in order to support DESNZ and Ofgem deliver the Technical Decision Document (TDD) for Window 1 of the scheme. Government and Ofgem have stated that Window 1 will be open to projects which can be delivered by 2030 or by 2033. The advice is technical in nature and tailored to officials creating and working on the cap and floor scheme.

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NESO's duty to provide advice

The Energy Act 2023 sets the legislative framework for an independent system planner and operator to help accelerate Great Britain's energy transition, leading to the establishment of the National Energy System Operator (NESO). The Act establishes that NESO should provide advice, analysis or information in relation to any of its functions, including a series of primary and secondary duties.

Our primary duties are to promote the following three objectives:



Net Zero

Enabling the government to deliver on its legally binding emissions targets



Efficiency & Economy

Promoting efficient, coordinated and economical systems for electricity and gas



Security of Supply

Ensuring security of supply for current and future consumers of electricity and gases

Our secondary duties are to have regard to:



Facilitating Competition

Creating and maintaining competitive energy markets and networks



Consumer Impacts

Understanding what changes mean for consumers



Whole System Impacts

Understanding linkages across systems



Facilitating Innovation

Creating an environment that enables others to help solve energy challenges

Section 171 of the Act requires NESO to comply with a request for advice from the Minister of the Crown (the Government) or the Gas and Electricity Markets Authority (Ofgem), so far as reasonably practicable.

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Scope of advice and approach

The LDES cap and floor scheme was publicly consulted on in January 2024 and government published its response in October 2024. In the response, government highlighted areas where it intended to seek input from NESO to consider alongside views gathered from the public consultation, to inform final decisions.

The full approach we took to answering each question is detailed in the reports and summarised below.

Question 1 asked for views on the electricity system impacts of changing the scheme eligibility criteria relating to duration and capacity. To answer this question, we drew on the expertise and experience of subject matter experts (SMEs) across NESO to determine the possible system impacts of making the proposed changes across a range of relevant “system aspects,” including security of supply and thermal constraints. In most cases it has been more appropriate to answer the question through a qualitative assessment, except for the thermal constraints costs where we conducted analysis using our PLEXOS modelling tool.

Question 2 asked for views on the range of electricity system benefits and costs to consider when assessing applications. Our response drew largely on NESO’s experience of assessing applications for the Interconnector Cap and Floor Scheme as well as input from NESO SMEs on factors unique to LDES projects. We have split our assessment into those associated with socio-economic welfare and other system costs and benefits.

Alongside this, we also identified several “non-system impacts” which we suggest may need to be considered in the assessment (e.g. environmental and local community impacts). However, we noted that much of this would be considered through the separate planning and consenting process.

Question 3 asked for our view on the optimal range of LDES capacity to procure in the first window of applications. Our response to this drew on the modelling already undertaken as part of our [Clean Power 2030 \(CP30\) advice](#) and [Future Energy Scenarios \(FES\) 2024](#).

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Stakeholder engagement

NESO is a stakeholder focused organisation. All the subject matter experts who fed into this report engage regularly with industry to inform their views and develop their expertise. Our response to questions 1 and 2 drew on their insights, supplemented with findings from our previous reports and external publications.

Both the publications we drew on to answer question 3 represent the output of a significant body of wider work by NESO that has drawn heavily on input from key stakeholders across the energy sector and has involved consultation with technology developers.