



Department for
Energy Security
& Net Zero

Long duration electricity storage consultation: Government Response

Designing a policy framework to enable
investment in long duration electricity storage



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Executive summary

The Department for Energy Security and Net Zero is at the heart of this government's agenda, leading one of the Prime Minister's 5 national missions, to make Britain a clean energy superpower with zero carbon electricity by 2030, and accelerating our journey to net zero. Investment in Long Duration Electricity Storage (LDES) again after a hiatus of four decades will make an important contribution to this mission by integrating renewables and reducing electricity system costs while supporting energy security.

Between January and March 2024, stakeholders were consulted on a proposed approach of using a cap and floor regime to enable investment in Long Duration Electricity Storage (LDES) assets. This offers greater revenue certainty for investors, helping overcome the previously detailed barriers from a 2022 call for evidence¹ such as the high capital costs and long build times. The consultation aimed to gather feedback from stakeholders on various aspects of the proposal, including the delivery body, eligibility criteria, gaming risks and the technical design of the cap and floor.

After reviewing the extensive feedback received, this government has decided that an LDES cap and floor scheme should be introduced as the optimal policy approach for the framework to best facilitate rapid and efficient LDES investment, noting the strong industry support for it. Ofgem has agreed to act as LDES regulator following the government's request, which encompasses the role of investment framework delivery body and which was the approach favoured by industry, and we have therefore asked them to take forward this role with immediate effect. Ofgem has existing expertise and a proven track record in successfully implementing a cap and floor approach to support the significant increase in electricity interconnector investment and delivery over the last decade. This route should therefore aid swift implementation. It also responds to many investors' preference that the scheme be delivered by an independent body. As an independent regulator, Ofgem may need to collect further evidence of its own before its Board can formally confirm the details of the LDES investment framework it will use to enable project delivery.

We have also reconfirmed our position that a cap and floor scheme should offer two application routes, with stream 1 focusing on established technologies with a Technology Readiness Level (TRL) of 9 and stream 2 focusing on more novel technologies with a TRL of 8. We will be holding the minded-to positions on the minimum duration and capacity limits set out in our consultation but, based on informative feedback received, will be engaging with the National Energy System Operator (NESO) and Ofgem to further review some of these thresholds before any final decisions are made. This includes potentially increasing the

¹ DESNZ (2022), Facilitating the deployment of large-scale and long duration electricity storage: government response, <https://www.gov.uk/government/calls-for-evidence/facilitating-the-deployment-of-large-scale-and-long-duration-electricity-storage-call-for-evidence>

minimum duration required and reviewing whether the stream 2 minimum of 50MW should be amended.

Additionally, we intend to keep the policy objectives detailed in the consultation. We recognise that there was concern raised around some technology types, such as lithium-ion (Li-ion) batteries being ineligible for support. We can confirm our intention that any technology type can apply for support for this LDES cap and floor on the basis that it meets the definition of electricity storage and the minimum stream eligibility criteria, but we will maintain our principle of additionality in that only projects that could not otherwise move forward to investment decisions should be supported.

To address concerns around potential gaming risks of the cap and floor scheme, we commissioned Cambridge Economic Policy Associates (CEPA) to conduct an in-depth study. Interim results suggest that there are possible mitigations that can be deployed to limit these risks and we will work with Ofgem to consider how best to address these risks ahead of the final regime opening for applications.

Whilst government has set out its positions in this consultation response, Ofgem will need to reconfirm some decisions in this document which fall to it as the regulator, as part of its independent decision-making processes. Details of when we anticipate government and Ofgem to make final decisions ahead of the opening of the first allocation round are set out in section 3.

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1 Introduction

1.1 Background on consultation

This document summarises responses to the consultation on Long Duration Electricity Storage (LDES) which ran between January and March 2024. For each question or set of questions, it presents (where appropriate) the government position; lastly, it sets out next steps towards implementation of a cap and floor scheme.

Long duration electricity storage (LDES) is a key enabler to a secure, cost-effective and low carbon energy system. LDES can help to decarbonise the system by storing excess renewable generation over six hours or longer, replacing flexibility from fossil-fuelled generation and helping to alleviate constraints on the grid. LDES assets can reduce costs to consumers through lowering their energy bills, and by avoiding the need for electricity grid reinforcement and peak generation plant build. System modelling (published alongside the consultation) estimates savings for the energy system, and ultimately the energy consumer, could be £24 billion by 2050 from 20 GW of LDES.²

Pumped Storage Hydro (PSH) is the most mature LDES technology, but there are also more novel technologies such as Liquid Air Energy Storage (LAES), Compressed Air Energy Storage (CAES), gravitational, high-density pumped hydro, and flow batteries at varying stages of commercial readiness and deployment. LDES assets will be vital in helping to not only decarbonise our power grid, but to also increase our energy security by allowing us to maximise the use of intermittent renewables, storing this energy when there is excess generation for use in periods of low generation. It is why we are seeking to support developers in deploying more of these assets.

1.2 Response categories

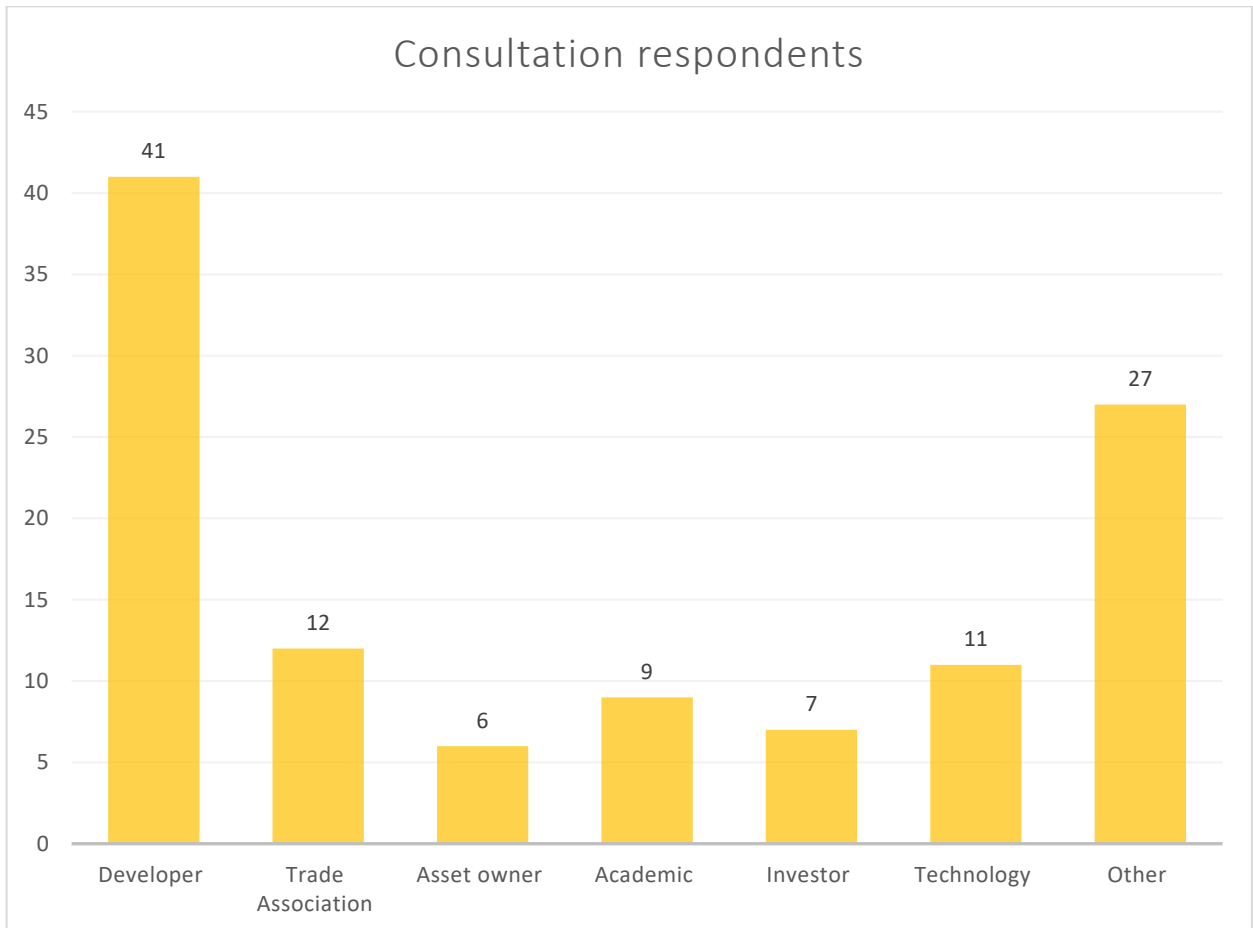
The consultation was published on GOV.uk and we received a total of 113 responses through the Citizen Space platform and via email. Responses were received from a wide range of stakeholders, including storage technology developers, energy generators and suppliers, academics and investors. We thank stakeholders for their informative responses, which have guided our thinking in reaching the government positions set out in this document. We have categorised the respondents into the sector categories that were provided on the Citizen Space platform. The categories were as follows:

- Developers
- Trade Associations

² Department for Energy Security and Net Zero (2024) *Scenario deployment for long duration electricity storage*, <https://assets.publishing.service.gov.uk/media/659be546c23a1000128d0c51/long-duration-electricity-storage-scenario-deployment-analysis.pdf>

- Asset owners
- Academics
- Investors
- Technology
- Other

The below graph shows the breakdown of respondents based on these sectors.



2 Summary of consultation responses (and government response)

Below we summarise the responses received for each consultation question, under the same headings used in the consultation. Where relevant, we also set out the government response to these questions, with some responses covering multiple questions.

2.1 Addressing barriers to LDES deployment

2.1.1 Policy Objectives

1. Do you agree with the policy objectives that have been identified? Please explain your reasoning.

Summary of stakeholder responses:

Response	Number of respondents
Agreed	76
Disagreed	12
Don't know	2
Didn't Answer	23

90 responses were received for this question. The majority of respondents agreed with the identified policy objectives, with some further comments.

Comments from respondents in agreement

The majority of respondents agreed with the policy objectives set out in the consultation. Respondents stated that the objectives listed were relevant and clear for facilitating investment in LDES projects. Other respondents noted that the consultation correctly identified the unique benefits of LDES and the barriers affecting the deployment of LDES technologies. In addition, some respondents believed that the objectives supported a diverse, resilient, and cohesive energy system. Furthermore, some respondents who agreed with the listed objectives highlighted the importance of alignment with other policy frameworks (for example, alignment with the Capacity Market (CM)) that aim to deliver a net zero energy system.

Comments from respondents in disagreement

Respondents in disagreement provided a range of comments relating to the identified policy objectives. Some respondents argued that the objectives should not discourage smaller scale long duration or shorter duration technologies. Some respondents also felt that an objective on technological neutrality should be considered. Some respondents argued that important considerations (such as maximising shorter duration technologies that could be adapted for long duration storage, improving grid constraints, factoring in the seasonal nature of LDES and taking a whole systems approach) were omitted from the policy objectives, while other respondents wanted clarity on the delivery timelines. In addition, some respondents felt that the policy objectives were too broad to be specifically used for LDES.

2. Are there other factors we should consider in our policy objectives?

Summary of stakeholder responses:

Response	Number of respondents
Yes	78
No	12
Don't know	2
Didn't Answer	21

92 responses were received for this question. The majority of respondents gave additional factors that should be considered in our policy objectives. A smaller number of respondents felt that the listed objectives were adequate.

Additional factors

Respondents who answered yes provided a range of additional factors that we should consider in our policy objectives. Many respondents suggested the government support other long duration storage technologies or novel technological solutions and take a technology agnostic approach. Similarly, some respondents wanted the government to consider an objective on technological neutrality to avoid distorting market competition with other long and short duration technologies.

Many respondents highlighted the geopolitical risks associated with raw materials for some technologies and that this should be factored into the regime's overall objectives. Some respondents suggested that a standalone objective that considers how to maximise opportunities for GB businesses should be implemented, helping to ensure GB's energy and economic security. Some respondents wanted a clear objective on establishing GB as a global leader in the development of LDES technologies alongside growing and exporting its expertise.

Some respondents also wanted a policy objective that reflects the wider socio-economic benefits that LDES projects can bring to local and regional communities. On a similar note, some respondents wanted the policy objectives to include a clear description of the unique benefits of incorporating LDES technologies into the energy system as opposed to shorter duration storage. Some respondents wanted the government to consider the sustainability impacts of PSH projects and streamline permit processes for developers, without compromising sustainability.

3. Will these policy objectives help to bring forward LDES projects to help the electricity system reach net zero in the most effective way? If so, why?

Summary of stakeholder responses:

Response	Number of respondents
Agreed	64
Disagreed	14
Don't know	8
Didn't Answer	27

86 responses were received for this question. The majority of respondents agreed that the policy objectives would help the electricity system reach net zero in the most effective way.

Comments from respondents in agreement

The majority of respondents in agreement believed that the policy objectives could help the electricity system to achieve net zero targets if backed by a detailed allocation and delivery design. Respondents also suggested that the government should set clear deadlines for allocating funds to increase investor trust and speed up supply chain growth. Some respondents mentioned that the cap and floor mechanism could help mitigate uncertainties pertaining to future electricity market revenues and therefore deliver the support investors need.

Comments from respondents in disagreement

Some respondents in disagreement believed that the current proposals are inadequate as they focus on supporting specific large scale long duration technologies, rather than exploring other technologies with varying durations and scales. Other respondents who disagreed highlighted the lack of market signals for the deployment of LDES assets and proposed that NESO should specify the amount of storage needed for a future electricity system. Some respondents suggested the introduction of a price multiplier for assets with longer duration capabilities while other respondents wanted the government to address the issue of grid connection.

Government Response (Q1 – 3):

We recognise that the majority of respondents agreed with our outlined policy objectives set out in section 2.3 of the original consultation. **We therefore intend to use the policy objectives listed in section 2.3 of the original consultation to enable investment into LDES assets.** We note that some respondents are concerned that lithium-ion (Li-ion) batteries would be excluded from this support, which they argue may discourage smaller scale long duration technologies. Our stance on the eligibility of Li-ion batteries is discussed further in the government response to question 8 (see section 2.3.3 below).

Some respondents have made useful suggestions around additional objectives, such as considering objectives on specifically supporting GB businesses and ensuring energy security. We believe that the very existence of a support scheme for LDES will do both: our intention is to support a range of projects that will benefit GB not only from the increased security offered by LDES technologies, but also economically from the investment this regime will unlock.

2.2 Assessment of policy options

2.2.1 Recommendation: Cap and floor regime

4. Do you agree with our assessment that a cap and floor is the most appropriate policy option to enable investment and bring forward the required LDES? Please explain your reasoning.

Summary of stakeholder responses:

Response	Number of respondents
Agreed	53
Disagreed	16
Don't know	20
Didn't Answer	24

89 responses were received for this question. The majority of respondents agreed that a cap and floor scheme would be the most appropriate option to enable investment into LDES.

Comments from respondents in agreement

Out of the 53 respondents in agreement, 44 believed the introduction of a cap and floor would significantly de-risk capital expenditure, thus encouraging industry to develop new LDES assets. Some respondents noted the reliability of using a cap and floor method as it has been used successfully for electricity interconnectors. Some respondents also believed that a cap and floor scheme would provide protection to taxpayers and consumers while others believed the scheme would align with the department's broader targets on decarbonisation. Some respondents thought that a cap and floor would encourage assets to optimise while two respondents noted that the scheme could be delivered quickly via a cap and floor mechanism.

Comments from respondents in disagreement

Some respondents pointed out the drawbacks of a cap and floor mechanism if applied to the LDES scheme. Respondents noted that the cap and floor mechanism could distort the market, benefit some technologies more than others and be difficult to effectively administer. Other respondents felt that the cap and floor would not sufficiently de-risk investment or that it would not incentivise assets to optimise. It was also suggested by some respondents that the interconnector cap and floor is not comparable as storage assets can access a variety of revenue streams.

Respondents in disagreement and some respondents in agreement proposed new reforms to the CM. Some respondents proposed that support for LDES projects would be better provided via a reformed CM as it would be a more technology neutral alternative and would retain competitive tension between different providers. Others also mentioned that a CM contract could minimise distortions to the energy market.

Government Response (Q4):

The government, in line with the majority of respondents in agreement, believes that a cap and floor mechanism would bring forward LDES projects and unlock investment in a timely and effective manner. We welcome support for this and agree with feedback received that the cap and floor will de-risk projects for investors whilst also protecting consumers. It is therefore the government's position that a cap and floor regime is the most appropriate policy option to enable investment in LDES. In light of Ofgem's agreement, at our request, to act as regulator for LDES which encompasses the role of investment framework delivery body (see the government response to Qq38-40, section 2.5 below), we have asked them to take forward this role and delivery of the investment framework with immediate effect. The introduction of the investment framework through regulation to enable LDES projects to apply for investment support will be delivered by Ofgem as independent regulator.

We acknowledge that some respondents proposed CM reforms with longer contract durations as an alternative to a cap and floor. We believe that the CM alone (even with those reforms) would be unable to provide enough revenue certainty to support the necessary investment into LDES, due to its high upfront capital costs coupled with long build times. However, we will ensure any future changes introduced to the CM are considered alongside the LDES cap and floor regime to ensure LDES assets are sufficiently supported in both the short- and long-term.

2.3 Scale and scope of a cap and floor scheme

2.3.1 Overall scheme capacity

5. Do you agree with our approach to not set an overall scheme capacity?

Summary of stakeholder responses:

Response	Number of respondents
Agreed	38
Disagreed	39
Don't know	11
Didn't Answer	25

88 responses were received for this question. Almost as many respondents agreed and disagreed with setting an overall scheme capacity.

A few respondents agreed with not setting an overall scheme capacity but supported a 'low regrets' minimum capacity to give more certainty to investors. In terms of procurement, some respondents wanted early visibility of allocation parameters in addition to the government setting a firm limit on the MW of capacity procured. Some respondents argued that if a suitable limited target and timeframe is set, this would have the potential to provide some degree of reassurance to the market.

Comments from respondents in agreement

Some respondents believed that it is too early to set a scheme capacity, but a capacity target may be needed in the future to avoid overbuild. Similarly, respondents felt that setting a capacity target too low or high could be detrimental to the deployment of LDES. Other respondents suggested that further modelling needs to be done on the future energy storage requirements of GB before setting an overall scheme capacity. Some respondents noted that a directional target (or ambition) would be beneficial in the future as developers need a better understanding on how much LDES is required.

Comments from respondents in disagreement

Many respondents in disagreement wanted a scheme capacity target as they believed it would boost investor confidence and offer further clarity. Many respondents also suggested that DESNZ should set a minimum LDES deployment target which they suggested could boost confidence in these assets and therefore stimulate investment, accelerating deployment.

Similar to comments made from respondents in agreement, some respondents in disagreement also wanted further modelling and work to determine how much LDES will be needed in the future. Respondents noted that it is difficult for industry to assess how much LDES is needed, and that greater clarity is required on what the system may need in terms of LDES deployment. Respondents who were in favour of a capacity target did not believe a target would lead to overbuild of LDES assets as the need for flexibility will increase as renewable generation increases. Some respondents also suggested that an overall scheme capacity could be determined in the future instead of being established right away. Two respondents also noted that an uncapped scheme could lead to higher costs for consumers if the scheme is highly subscribed.

6. Have we sufficiently identified wider risks and do you agree with the proposed mitigations? Please provide your reasoning.

Summary of stakeholder responses:

Response	Number of respondents
Agreed	40
Disagreed	33
Don't know	13
Didn't Answer	27

86 responses were received for this question. Many respondents agreed with the identified wider risks and mitigations while some respondents in agreement provided wider comments in relation to the question. Some respondents however disagreed and raised additional risks that should be considered.

Comments on our identified risks and proposed mitigations

Respondents who agreed gave feedback on the proposed mitigations and also shared broader views on the risks that were identified. Some respondents noted that there could be risks associated with the consideration of locational system constraints as the focus is on the electricity system rather than the wider energy market. Some respondents believed that a robust Cost Benefit Analysis (CBA) would mitigate the risks of stranded assets.

Respondents in disagreement believed that the CBA under a cap and floor would not consider the impact on other assets that exist or are in the pipeline. Respondents believed that a lack of policy alignment could cause further risks. Some respondents also believed that there was little risk associated with the deployment of Li-ion and novel storage technologies, as they have been successful in existing government support schemes (e.g. CM and the Longer Duration

Energy Storage Demonstration (LODES) program respectively). In addition, some respondents in agreement argued that the LCP/Delta analysis³ had not identified all the potential benefits.

Identified additional risks

Some respondents in disagreement offered a variety of wider risks in their responses. Some of the additional risks that were provided were:

- geopolitical risks
- additional capital cost risks (which include labour, material and debt costs)
- social risks
- technological challenges for specific technologies
- market distortions

Some respondents also identified additional risks that could arise from the exclusion of Li-ion batteries from the scheme. Some respondents felt that the scheme could affect shorter duration Battery Energy Storage Systems (BESS) projects while others argued that the exclusion of Li-ion could create an uneven playing field in the deployment of LDES projects. Respondents also noted that the exclusion of Li-ion could also lead to higher costs for consumers.

In wider comments from respondents in disagreement, concerns were raised around existing storage technologies rapidly improving and providing competitive solutions at 6-8 hour durations. In addition, some respondents contended that future system requirements and changes to the market have not been considered.

Government Response (Q5 and 6)

We are grateful for the wide variety of comments from respondents regarding an overall capacity target. We agree with the importance of boosting investor confidence and providing clarity over the scheme's future. In addition, we also note respondents' proposals of a 'low regrets' minimum capacity target for 2030. However, these must be balanced against the risks of setting incorrect and therefore misleading targets, particularly as our understanding of system flexibility needs continues to develop (and where we also anticipate significant future contributions from Carbon Capture, Usage and Storage and from hydrogen in meeting those needs). **On balance, we do not believe it is necessary to set an overall capacity target for LDES at this stage. However, government intends to provide indicative ranges to the cap and floor delivery body for each allocation round of the cap and floor scheme.** To inform these, the government will undertake further analysis with support from Ofgem and NESO.

We also welcome the feedback received on additional risks we should consider. These are noted and will be considered as part of the detailed design of this regime. Many of these relate

³ DESNZ/LCP Delta/Regen (2024), Scenario Deployment Analysis for Long-Duration Electricity Storage, <https://www.gov.uk/government/publications/long-duration-electricity-storage-scenario-deployment-analysis>

to other questions in the consultation e.g. on Li-ion (Q8) and so our response there (section 2.3.3 below) will also serve to address those comments.

The government will set out further detail on how it intends to provide indicative capacity ranges, and consider further the feedback on additional risks, in a technical decision document to be published this winter.

2.3.2 Electricity storage definition

7. Do you agree that only those technologies that meet the electricity storage definition should be eligible for an LDES scheme?

Summary of stakeholder responses:

Response	Number of respondents
Agreed	54
Disagreed	27
Don't know	6
Didn't Answer	26

87 responses were received for this question. The majority of respondents agreed that only those technologies that meet the electricity storage definition should be eligible for the scheme. Some respondents queried the exclusion of hydrogen and thermal storage technologies which do not meet this definition. Some respondents also proposed that technologies excluded from the scheme should be funded elsewhere in a separate scheme.

Further comments from respondents in agreement

Some respondents in agreement mentioned a desire for other mature and less-mature technologies (e.g. thermal energy storage) to be supported elsewhere and have a viable route to the market. Contrary to this, one respondent noted that other technologies such as thermal energy storage have sufficient revenue and are adequately supported. Some respondents (both in agreement and disagreement) highlighted the need for a technology neutral approach for technologies that deliver the policy objectives and meet the electricity storage definition. Some respondents in agreement wanted the scheme to widen the scheme to include Li-ion and hydrogen technologies that meet this storage definition.

Some respondents expressed the need for additional considerations for PSH assets e.g. greater clarity on how additional capacity added to the top of the reservoir would be accounted for. Some respondents suggested that the final mechanism should not exclude the rainfall element associated with PSH assets.

Comments from respondents in disagreement

Out of the respondents in disagreement, some raised concerns that the electricity storage definition could rule out technologies that could be valuable at a greater system level. Respondents highlighted the significant potential of thermal energy storage technologies and argued that thermal energy storage can be used to meet the vast demand for on-demand industrial heat more cheaply than batteries.

Two respondents also noted that certain types of demand response (DR) strategies and infrastructure (such as data centres, heating and cooling networks) can act as forms of long-duration energy storage. They noted that although DR strategies may not align with the definition of electricity storage, they could be beneficial.

Government response (Q7):

The government welcomes the general support from respondents on the proposal that technologies would have to meet the definition of electricity storage (as updated in the Energy Act 2023 to include electricity storage as a subset of electricity generation)⁴ to receive support through an LDES scheme. This defines “stored energy” as energy that was converted from electricity for the purpose of its future reconversion into electricity. **We therefore intend that scheme eligibility be limited to projects meeting the (existing) electricity storage definition.**

We acknowledge that some respondents disagreed with deriving eligibility from the electricity storage definition as it could rule out technologies that could also be valuable at an energy system level and that our proposal will exclude some technologies that could provide additional benefits. We take the view that an LDES scheme is primarily to support the power system and grid, rather than wider outcomes such as low-carbon heat which are best regulated separately, and therefore should not support technologies which do not meet the electricity storage definition. Maintaining the electricity storage definition as set out in primary legislation also assists with timely delivery of the LDES scheme.

2.3.3 Additionality

8. Do you agree that it is appropriate to exclude technologies that can already be funded under existing market arrangements and/or those that would be eligible for multiple business model support?

⁴ The National Archive (2023), Energy Act 2023, <https://www.legislation.gov.uk/ukpga/2023/52>.

Summary of stakeholder responses:

Response	Number of respondents
Agreed	50
Disagreed	39
Don't know	7
Didn't Answer	17

This question received 96 responses. 50 supported the exclusion of technologies that are already fundable under current market arrangements, with 39 opposed. In wider comments, some respondents wanted clarity on whether technologies would be allowed to co-locate alongside supported renewable generation (for example, by Contracts for Difference, the Renewables Obligation or merchant or Corporate Power Purchase Agreement plants). Some wider comments in disagreement also wanted government to undertake further analysis on system needs with NESO. Two respondents argued that the idea of augmenting or hybridising existing shorter duration assets with longer duration capacity was overlooked, with another respondent proposing that the exclusion of specific battery chemistries would result in higher overall costs.

Comments from respondents in agreement

Those who agreed with the proposed exclusion offered various reasons for ruling out technologies that can secure funding under current market arrangements. Many of those who agreed noted that other schemes such as the CM can support other technologies (such as Li-ion batteries). Some respondents argued that providing multiple funding routes for projects is a poor use of public funding. Others raised concerns around the added administrative burden of allowing too many technology types to apply for support, slowing down the allocation of support.

Some respondents noted that the Li-ion supply chain is mainly located in Asia, which does not benefit the GB economy, and they would prefer a procurement approach that supports GB businesses. Some respondents also believed that including technologies that already have access to alternative funding mechanisms would limit the available support for technologies that are dependent on it for deployment and are otherwise without a funding source.

Comments from respondents in disagreement

Many respondents who disagreed with the proposed exclusion offered alternative viewpoints, mostly in relation to the exclusion of Li-ion technologies from the scheme. Many respondents thought that the scheme should not rule out technologies (such as Li-ion) that can store electricity and that it should be neutral between different technologies. Many respondents also suggested that while long-duration Li-ion batteries are not commercially viable in GB, they

have been developed abroad (for example, in California) with the help of government intervention. They have also offered low costs which have made them an optimal solution abroad. Furthermore, some respondents queried the support for BESS in the CM and mentioned that revenue support from the CM was considered minimal.

Some respondents also made the case that the production capacity of lithium and sodium-based cells will lead to lower costs per unit of energy stored and that excluding Li-ion batteries would raise the prices for consumers. Respondents added that other comparable chemistries (e.g. sodium-ion (Na-ion)) are emerging in the market which could reduce costs further.

Other considerations

Some respondents suggested that revenue stacking should be allowed, and that government should give early guidance on which revenues can be combined (for example, CM revenue alongside other revenue support). Another respondent proposed that LDES technologies should be able to join in existing energy market arrangements (for example, the balancing mechanism) where possible, to earn extra revenue. Separately, some respondents suggested that Li-ion technologies do not have the technical capabilities to provide longer duration storage.

Government response (Q8):

The government welcomes the general agreement from respondents that projects should be excluded from the scheme if they can be funded elsewhere. We acknowledge that many respondents disagreed that technologies such as Li-ion should be excluded from the scheme.

We have carefully considered the informative responses to this question. The government welcomes the potential for other technologies, in time, to contribute to GB's long-term flexibility; however, it is the clear objective of this LDES scheme to provide a route to market for mature and near-mature LDES technologies which are not commercially viable under existing arrangements. **Therefore, the government's position is that projects should not be eligible to receive support from an LDES cap and floor if they can already readily deploy via existing market revenue opportunities.** It would be an inefficient allocation of resource to direct support to already viable technologies or projects.

However, we would not wish projects to be excluded solely on the basis of their technology type. The principle of additionality would entail that support be available only to projects that are technically feasible, but are not otherwise commercially feasible without a guaranteed minimum revenue. This may, for example, include novel iterations of Li-ion batteries which are specifically developed for longer-duration electricity storage, so long as they also meet the other eligibility criteria that apply.

2.3.4 Duration and efficiency

9. Do you agree with our proposal for a minimum duration of 6 hours? If not, please provide a rationale.

Summary of stakeholder responses:

Response	Number of respondents
Agreed	44
Disagreed	51
Don't know	1
Didn't Answer	17

96 responses were received for this question. The majority of respondents disagreed with the proposal of a 6-hour minimum duration for both the application streams presented in our consultation. However, many respondents agreed with the proposal and provided wider comments to this question.

Commentary on minimum duration

Some respondents agreed with the minimum duration of 6 hours and argued that 6 hours is a good point of differentiation between short and long duration types of technologies. Among others, there were a variety of preferred minima:

- Some argued for a higher minimum, on the grounds that BESS technologies can do 6-8 hours at a lower system cost than LDES. 20 respondents believed that an 8- or 10-hour minimum duration should be appropriate for the scheme. Some respondents argued that the US Department of Energy (DOE) and a range of academic studies have defined Long Duration as 10 hours or more of storage and want the UK government to take a consistent approach with other definitions. Some respondents proposed longer durations at 12 hours or more. Respondents who proposed a longer minimum duration referred to the recent LCP Delta/Regen analysis showing greater system benefits at longer durations.
- Others argued for a lower minimum e.g. 4 hours, which would accommodate lithium-ion technologies. Similarly, one respondent believed that 6 hours was too restrictive as battery chemistries erode after 4 hours.

Furthermore, some of those who agreed with our proposal said that 6 hours would be enough for now, but the duration might need to be raised to 8 hours in the future.

Further modelling

Of those in agreement, some respondents wanted a clear understanding of the capacity and duration needs of a future energy system in addition to a clear definition of 'duration'.

Wider comments

A range of wider comments were received for this question from respondents, both in agreement and disagreement with the 6-hour minimum duration. Respondents in agreement suggested that degradation over time and the number of available annual cycles should be considered, while one respondent noted that a shorter duration technology that can cycle multiple times a day can also provide 6 hours or more of discharge a day. This respondent also wanted more clarity on whether discharge has to be continuous, cumulative or both. Some respondents argued that a strong CBA template will allow the best projects to come forward and that an arbitrary minimum is unproductive.

Government response (Q9):

We note that a slight majority of respondents disagreed with our proposed minimum duration of 6 hours for both streams (with most, but not all, of those favouring a longer minimum). We acknowledge the proposals for durations between 8-12 hours, citing international precedent. As we set out in our consultation and in the previously published LCP analysis, we understand that longer durations generate greater system benefits. We do not therefore intend for a minimum duration below 6 hours of continuous discharge to be set. However, setting a higher minimum duration also reduces the potential supply of LDES that this scheme could deliver, and this downside must be weighed against the benefits of restricting the scheme to higher-duration storage only.

On balance, we would prefer that the minimum duration for both streams remain at 6 hours. However, government will undertake further modelling to determine the most appropriate figure, working NESO and Ofgem to understand the impact of increasing this requirement above 6 hours. We will set out our final position in a technical decision document this winter.

10. Do you believe we should be setting a minimum efficiency criterion? Please provide your reasoning.

Summary of stakeholder responses:

Response	Number of respondents
Agreed	19
Disagreed	66
Don't know	5
Didn't Answer	23

90 responses were received for this question. The majority of respondents disagreed with setting a minimum efficiency criterion. However, many respondents agreed with the minimum criterion and offered further insight with their comments.

Comments from respondents in disagreement

Out of the respondents in disagreement, many respondents noted that the CBA process should consider the project's efficiency alongside other metrics (other metrics to be considered include lifetime of project, system degradation, cost of cycling and OPEX) and should be viewed holistically. In addition, many respondents argued that efficiency should not be a barrier to entry while some respondents noted that setting a minimum criterion would exclude emerging long duration technologies with lower efficiencies.

Some respondents believed that the Levelised Cost of Storage (LCOS) should be used alongside system value analysis which takes various factors into account, including Round-Trip Efficiency (RTE) while another respondent suggested that operational efficiency could be part of bilateral negotiations for agreeing a cap and floor. Furthermore, many respondents in disagreement noted that projects with low efficiencies could have other benefits (e.g. low upfront or running costs).

Wider comments

Some respondents in favour of using an efficiency criterion argued that it should not be set too high, for example 70%, as it could rule out Liquid Air Energy Storage (LAES) and Compressed Air Energy Storage (CAES) technologies. Wider comments mentioned that the government should ensure the best possible return from assets on the scheme while another respondent believed that using technologies with low round-trip efficiencies would result in reduced usage. Other comments suggested that low CAPEX, low-efficiency projects would be brought forward without an efficiency minimum.

Government response (Q10):

We acknowledge the strong disagreement from stakeholders to setting a minimum efficiency rating for projects. While efficiency is of course desirable, the government accepts that it can be assessed in the round and that a blunt minimum may exclude projects which are worthwhile on their other merits. **Due to this, we are minded not to propose a minimum efficiency rating as part of the eligibility criteria for projects at this time.**

As final assessment requirements are developed ahead of the application window opening, we will work with Ofgem to consider how best to consider efficiency.

2.3.5 Approach to established and novel technologies

11. Do you agree with the proposed approach to splitting the streams by TRL level? Please provide your reasoning. If not, please suggest an alternative approach.

Summary of stakeholder responses:

Response	Number of respondents
Agreed	69
Disagreed	11
Don't know	8
Didn't Answer	25

88 responses were received for this question. The majority of respondents agreed with splitting the cap and floor scheme into two streams. We proposed splitting the scheme with stream 1 supporting mature technologies at TRL 9 and stream 2 supporting novel technologies at TRL 8.

Agreement, queries and suggestions for improvement

The majority of respondents supported the suggested method of dividing the streams by TRL and pointed out the effectiveness of the Contract for Difference (CfD) scheme that followed a similar method. However, many respondents wanted greater clarity on how TRLs would be determined, with some respondents wanting clarity on the total capacity and total funding for each stream. Respondents in disagreement with splitting the streams highlighted the subjectivity and challenges of administering a scheme by TRL. Some respondents proposed the implementation of a certification process to validate the TRL. Furthermore, some respondents wanted greater detail on how projects would graduate from stream 2 at TRL 8 to stream 1 at TRL 9.

Some respondents also wanted further differentiations between the two application streams in addition to the capacity minima specified for each stream (100MW for stream 1 and 50MW for stream 2 as noted in the original consultation). An enhanced support regime for stream 2 which addresses challenges for emerging technologies in comparison to mature technologies was proposed by some respondents. Moreover, some respondents also mentioned the limits of the cap and floor and the risk of a support gap between TRL 7 and TRL 8. Some respondents proposed adding TRL 7 technologies to the scheme because of the possible gap, while others suggested that government should keep supporting innovation for LDES technologies at TRL 7 and lower. Many queried LAES being documented as TRL 8 and TRL 9⁵ and some respondents suggested an enhanced support stream for stream 2 that acknowledges and addresses the funding challenges for emerging technologies.

⁵ Some LAES technologies are expected to transition from TRL 8 to 9, therefore it was noted as a potential applicable technology in both application streams in the original consultation.

Alternative approaches

Several respondents suggested revising stream 2 with a lower minimum capacity or splitting technologies based on lead times to development, duration and value for money. Similarly to question 10, concerns were also raised around the high thresholds, particularly the minimum capacity limit for stream 2 which is addressed further in the response to question 12. Mixed opinions were expressed about the value of splitting streams and the inclusion of refurbishing projects.

Some respondents suggested splitting the technologies by energy stack requirements and benefits to the consumer. Additionally, one respondent agreed with the proposed approach, but suggested that commercial readiness level (CRL) should be considered.

Government response (Q11):

Government welcomes the significant support for splitting the streams by technology readiness level. On the back of this support, **we remain of the view there should be two streams split by TRL as set out in the consultation.** However, further details on how TRLs will be assessed will be made available ahead of scheme launch.

12. Do you agree with the different capacity minima set out for the streams? Please provide your reasoning.

Summary of stakeholder responses:

Response	Number of respondents
Agreed	23
Disagreed	56
Don't know	5
Didn't Answer	29

84 responses were received for this question. The majority of respondents (40) disagreed with the minimum capacity set out for stream 2 while some respondents (16) disagreed with the stream 1 minimum capacity.

Comments on stream 1 capacity minimum

16 respondents agreed with the capacity minimum set out for stream 1. Respondents in disagreement proposed a range of capacity minima for stream 1, such as increasing to 300MW at 10 hours or decreasing to 20MW.

Comments on stream 2 capacity minimum

Out of the 84 responses received for this question, the majority of respondents in disagreement wanted a lower minimum capacity for stream 2. A range of values were given by respondents with most suggesting that a 1, 10 or 20MW minimum capacity would be suitable for stream 2. Some proposed that there should be no minima for each stream as projects should be judged on their CBA. Respondents in disagreement argued that if a lower stream 2 minima were chosen, projects would find it easier to secure connection at the distribution network level.

Other respondents noted that a 50MW minimum for technologies in stream 2 would require significant CAPEX to deliver the asset (£100 million was given as an example). Respondents argued that obtaining both debt and equity funding for this scale of project, with an emerging technology at TRL8, would be challenging. Furthermore, respondents suggested that a lower minimum would increase the potential for co-location with sites at a smaller scale and offer greater flexibility.

Wider comments and queries

Two respondents noted that DESNZ should consider whether the capacity threshold could be met by a project composed of several assets at different locations while some respondents suggesting that the minimum capacity could be specified in MWh for both streams. Some respondents queried the definition of capacity and wanted clarification on whether the minimum was based on discharge capacity.

Government response (Q12):

For stream 1, due to the majority support from stakeholders, **we will continue to develop the scheme based on a minimum capacity at 100MW with a 6 hour duration, as set out in the consultation.**

The government acknowledges that the responses to this question regarding the stream 2 capacity criteria raised more concerns. To properly explore this, **we will further consider the minimum capacity for stream two and will update on this position in a technical decision document this winter.** This is to ensure that the potential benefit of changing this minimum can be thoroughly assessed and reviewed, allowing for a more informed decision to be made.

2.3.6 System benefits

13. Do you agree that the identified wider system benefits should be considered when assessing a project?

Summary of stakeholder responses:

Response	Number of respondents
Agreed	78
Disagreed	3
Don't know	3
Didn't Answer	29

84 responses were received for this question. The majority of respondents noted that consideration of wider system benefits would be required for developing project assessments. Some respondents raised concerns on the lack of detail on how the benefits will be assessed. Some respondents noted the difficulty in quantifying the listed benefits (such as locational benefits).

Clarity on the wider system benefits

The majority of respondents noted that the consideration of wider system benefits would be required for developing project assessments. However, many respondents wanted clear guidelines on the information providers should produce during the assessment. Respondents also wanted further detail on how each benefit will be weighted and assessed. Some respondents also noted the need for a clear and transparent methodology which is open to feedback.

Methodology concerns and challenges

Some respondents raised concerns about the challenges in assessing some metrics such as benefits to the local economy, and the potential changes in assessment criteria over the asset's lifetime. In addition, some respondents noted the need for careful assessment to avoid double counting of benefits. Some respondents also argued that energy security and decarbonisation should be weighted heavier than other listed benefits. Some respondents disagreed with the LCP Delta/Regen analysis that locating more LDES in less constrained areas could bring greater benefits to the system than locating LDES assets in more constrained areas.

Suggestions for additional benefits

Respondents suggested a variety of additional benefits that could be included in the assessment process. The additional demonstratable benefits could include:

- hidden value benefits (such as avoiding investment deferral, reduced network upgrades needed, reduced wind power needed)
- geographical factors
- local and national economic impact and benefits

- reducing system costs
- project longevity
- flexibility
- decarbonisation

14. Would an approach similar to that of the interconnector scheme be appropriate? if not what alternative would you suggest?

Summary of stakeholder responses:

Response	Number of respondents
Agreed	45
Disagreed	9
Don't know	18
Didn't Answer	41

72 responses were received for this question. The majority of respondents agreed with taking a similar approach to assessing system benefits as was used in the interconnector scheme.

Clarity on the schemes design and timeline

Many respondents (both in agreement and disagreement with using a similar approach as to interconnectors) highlighted the need for greater clarity of what would be repeated from the interconnector scheme. Respondents raised concerns around the transparency of the interconnector scheme at the CBA stage. Following this point, some respondents highlighted the need for the system benefits to be made clear at the CBA stage. Respondents also noted the importance of a close working relationship between the regulator and the developer.

Some respondents raised a separate concern regarding the interconnector scheme, arguing that too many assumptions are made on the value of the project before the project is commissioned and operating. Some respondents also raised concerns around the timeline of the LDES cap and floor scheme, stressing the importance for the scheme to be delivered at pace. In addition, some respondents noted the difficulty of assessing wider system benefits, as is done in the interconnector scheme (see question 13).

Assessment methodology and benefits tailored for LDES

Some respondents highlighted that assessment stages from the interconnector scheme (initial project assessment, final project assessment and the post construction review) could be used for the LDES scheme. However, many respondents also noted that the assessment should be tailored specifically to incorporate the unique benefits of LDES assets. This could include additional benefits such as decarbonisation. In addition, due to the diverse benefits of LDES assets, some respondents highlighted the importance of external assessors being suitably qualified to assess applications.

15. Are there any wider economic and societal benefits that have not been identified that LDES projects could provide that we should include in the criteria?

Summary of stakeholder responses:

Response	Number of respondents
Yes	58
No	13
Don't know	3
Didn't Answer	39

74 responses were received for this question. The majority of respondents stated that there are wider benefits to consider. Some respondents gave a counterview, citing the difficulty in subjectively assessing wider social and economic benefits.

Wider economic benefits

Many respondents agreed that local economic benefits should be considered for the LDES projects. However, respondents have raised queries in other questions (Questions 6, 13 and 14) about the subjectivity surrounding the assessment of local economic benefits. Similarly, some respondents also suggested that national economic benefits should be considered, which could include added supply chain benefits, or that wider benefits to the local area (for example, employment, environmental impact, and additional local value) should be considered. Respondents also argued that wider benefits such as direct and indirect skilled employment in construction, and ongoing and operational employment, should be recognised.

Wider societal benefits

Respondents provided many other societal benefits that could be considered during the assessment criteria. Some respondents commented that LDES projects which displace gas plants will have a positive impact on air quality while other respondents suggested that environmental impacts should be considered. Furthermore, some respondents contended that the project's potential for re-use or repurposing should be considered. An example would be the repurposing of industrial brownfield sites to minimise environmental impact.

Additional benefits

Respondents also suggested a variety of additional benefits that could be included in the assessment process for LDES projects. Some of the extra benefits that were suggested, among others, were:

- ecological sustainability
- use of grid connection
- energy sovereignty (in the face of geopolitical issues)
- flood and drought control (for PSH technologies)
- utilisation of waste streams
- longevity of the asset
- system efficiency, which includes reduced network capacity and generation capacity requirements

Many respondents also suggested that a carbon focused eligibility factor should be considered when assessing projects, to ensure the cap and floor scheme promoted low carbon technologies.

Government response (Q13 - 15):

Further to the large majority of support from stakeholders for the system benefits as set out in the consultation, **we can confirm our intention that these benefits will be considered as part of the application assessment.** This will allow the projects to be assessed on considerations wider than costs. We welcome the further suggestions provided in responses received and we will consider these for the final selection criteria. We will work with Ofgem, NESO and external experts to define exact criteria thresholds and confirm the final list before opening for applications.

2.4 Design parameters for a cap and floor scheme

2.4.1 Setting cap and floor levels

16. Do you agree with allowing recovery of debt via the floor and recovery of equity via the cap? Please provide your reasoning.

Summary of stakeholder responses:

Response	Number of respondents
Agreed	26
Disagreed	4
Don't know	7
Didn't Answer	76

There were 37 responses to this question. An overall majority of respondents agreed that the scheme should allow recovery of debt via the floor and recovery of equity via the cap. Generally, respondents wanted to know more details on how the cap and floor scheme would work, including what costs are included in the floor calculation, such as capital costs, operating and maintenance costs, decommissioning costs, and tax.

Several respondents also commented that there are significant differences in risk between interconnectors and PSH projects. These included unique construction risks for PSH projects, which could therefore be subject to significant cost overruns, versus interconnectors that are mostly electrical projects. They also noted PSH projects operate with more market risk they operate in a variety of short- and long-term electricity markets to maximise revenue. There are also higher operating and maintenance costs for PSH compared with interconnectors.

A significant number of respondents advocated a soft-cap approach, which would allow projects to retain a portion of revenues gained above the cap, and some respondents suggested that some equity recovery should be included at the floor given the risks of the project. This is to counter the risk that the asset is not incentivised to operate once the cap is reached. Some respondents stated that the range of financing options should include both on-balance-sheet financing and project financing.

17. What costs should be eligible for inclusion in the cap and floor reconciliation calculations?

Summary of stakeholder responses:

Response	Number of respondents
All costs	13
Capital and operating costs	10
Operating costs	6
Interconnectors approach	17
Other	11

There were 57 responses to this question. The majority of respondents thought that the costs that were eligible for inclusion in the cap and floor calculations should be similar to those in the interconnector regime. They argued these should include CAPEX costs which would encompass development expenditure, construction capital expenditure, lifecycle replacement expenditure and interest during construction. Operating expenditure should also be included, in the view of some, and this should include tax and decommissioning. Some respondents claimed there should be allowed returns to debt and equity providers. Some respondents suggested that the scheme should mirror the approach taken for interconnectors where developers are able to choose whether to use notional or actual financing, thereby enabling the use of corporate/on balance sheet financing or project financing.

18. How do we design the thresholds to be at the appropriate level to balance investment certainty with potential consumer exposure to additional support costs?

Summary of stakeholder responses:

Response	Number of respondents
Allow some return of equity through floor	5
Ensure the cap incentivises investment	6
Have a choice of actual or notional gearing	3
Have a 'soft cap'	9
Return above a project's Weighted Average Cost of Capital (WACC)	2
Calculate cost of equity on project-to-project basis	1
Use a dynamic element in the cap and floor	1
Fully take into account the cost of risk	2
Use a competitive allocation process	5
Stream 1 and 2 should be different	3
Further detailed design required to establish this	10

There were 47 responses to this question. A number of respondents said that this should be the focus of a much more detailed follow up consultation or design phase. Some respondents thought that the floor should not just cover the debt cost but also incorporate a partial return on equity. This was to reflect the different risk characteristics, and revenue certainty of LDES compared with interconnectors. Some respondents thought that the cap should be used to incentivise investment in this asset class, with differing levels of return depending on the technology readiness level.

A number of respondents thought that there should be a 'soft cap', where returns are shared above this level. This would still give an incentive for the asset to continue operation when the cap had been reached, while still protecting consumers. Some suggested the cap should be done on a multi-year basis to account for market volatility, and others suggested a sharing factor which gives the operator a lower share as returns over the cap increase. A few respondents thought that there should be a competitive element to setting the cap and floor.

Government response (Q16 - 18):

We welcome the support from stakeholders on our proposal to allow recovery of debt through the floor and recovery of equity up until the cap. We agree that setting the floor at the level of debt incentivises operation above the floor, as it encourages operation above the floor to receive an equity return which minimises the potential costs to consumers. We have noted our position on the use of soft caps under our response to questions 21, 22 and 23.

We recognise the concern raised by some stakeholders that our stance on floor payments only covering debt costs could create barriers for projects that are not debt-funded, and that further details of what is included within the cap and floor calculations are required. For these reasons, **while the government is minded to keep the floor calculation at the level of debt, we will continue to explore further whether other financing approaches could be included within the calculation, and will set out our final position in a technical decision document this winter.**

19. Should we require projects to outline how they intend to operationalise the asset to exceed the floor?

Summary of stakeholder responses:

Response	Number of respondents
Agreed	35
Disagreed	23
Unsure	7
Didn't Answer	48

There were 65 responses to this question, with a majority agreeing that projects should demonstrate how they will operationalise the asset to exceed the floor.

Reasons in agreement

Some respondents felt that this process should be implemented because it would discourage projects applying to the scheme speculatively, taking the space of a project that would be completed. Some respondents suggested that this should be assessed as part of a cost benefit analysis (CBA) phase of the scheme.

Reasons in disagreement

Some of the respondents stated that the market would change too much over the period of the scheme, which would make it too complex to predict how these assets would operate in the future. Respondents that agreed with the requirement acknowledged this and highlighted that the process would need to be flexible enough to allow assets to move away from their outlined operation to respond to the future markets and needs of the system. Some respondents disagreed with this suggestion because they thought that the assets will be incentivised to operate above the floor anyway.

Alternatives to ensure operation above the floor by assets were:

- availability requirements similar to the interconnector cap and floor and as set out in question 21 and 22,
- setting the floor at cost of debt, and
- enforcement through regulation and licences.

Government response (Q19):

While stakeholders mostly agreed with the need for developers to demonstrate how assets will operate above the floor as part of the application process, some concerns were raised around the practicalities of assessing and demonstrating this. Following the suggestion of some stakeholders, government will work with Ofgem and NESO to consider further how an assessment can be included in a CBA process. However, **our minded-to position is to require projects to outline how they intend to operationalise the asset to exceed the floor as part of the assessment process.** The government acknowledges stakeholders concerns that electricity markets are expected to undergo changes and will work with Ofgem and NESO to ensure this is considered when defining the CBA to be used in future application assessments. Details of this will be shared ahead of the first application round.

2.4.2 Using gross margin

20. Do you agree using annual gross margin is a suitable approach to setting the cap and floor thresholds? If not, what alternative would you suggest?

Summary of stakeholder responses:

Response	Number of respondents
Agreed	43
Disagreed	14
Unsure	9
Didn't Answer	47

Out of the 66 stakeholders that responded to this question, the majority agreed with using annual gross margins for setting the cap and floor thresholds for the scheme. Some of the respondents agreed with this position because they feel it would be the simplest way to account for the underlying costs of electricity and would promote efficiencies in operating the asset. Some respondents felt that it was unclear what was included within the definition of 'gross margins', with OPEX and tax costs being highlighted as costs that should be included within the definition. Some of the aspects that were highlighted as needing more clarification included:

- the inclusion of OPEX
- how tax cost would be accounted
- network charges (should not be included)
- how it would affect co-located sites
- the inclusion of revenues from the CM and future market changes

Some of the respondents that disagreed with this approach felt that Earnings Before Interest, Taxes and Amortisation (EBITA) or a project specific approach would be a more appropriate approach for the LDES cap and floor. Some other respondents felt that the cap and floor thresholds should be agreed on a project specific approach.

Government response (Q20):

We take confidence that stakeholders have mostly supported our proposal to use gross margin. However, we recognise that more details are required to confirm the calculation methodology and what costs should be considered as part of this. We are therefore confirming **our minded-to position is to use gross margin** but the exact details of how this will be calculated will be set out ahead of the first application window after reviewing methodologies and implications with, Ofgem. We hope this gives industry certainty of the intended approach whilst allowing time to assess the most appropriate costs to include and calculation to be used.

2.4.3 Addressing operational risks

2.4.3.1 Dispatch distortion

21. What performance incentive could be used to encourage full operation of assets to prevent dispatch distortions around the cap?

Summary of stakeholder responses:

There was strong agreement among the respondents to this question on setting soft caps for the LDES cap and floor. Many of the respondents thought that some sort of soft cap, in the form of a tapered or sliding scale, would be the best incentive to encourage full operation of assets and prevent dispatch distortions. However, it was acknowledged by some respondents that even with a soft cap, there could still be distortions. A softer cap would only lessen the likelihood and frequency of these occurring.

Availability and behaviour requirements were also a highly recommended incentive. Of the three mitigations set out in the consultation, feedback was as follows:

Mitigation	Number of respondents
Soft cap	45
Availability requirements	25
Multi-year reviews	19

Some of the participants that supported the multi-year review did suggest that it should be optional, with single year review also available if the project needed them.

Other mitigations that were suggested were:

- transparency requirements
- no caps
- must offer obligations as used in California (projects are required to bid their entire upward resource adequacy capacity into the market)
- index based tax regime
- early exit
- new market arrangements

22. What performance incentive could be used to encourage full operation of assets to prevent dispatch distortions relating around the floor?

Summary of stakeholder responses:

Respondents widely agreed with the incentives that were outlined in the consultation to encourage full operation and prevent dispatch distortions, as shown in the table below:

Incentive	Number of supportive respondents
Floor at level of debt	15
Availability requirements	25
Multi-year reviews	19

Only a few respondents disagreed with the proposals. Some respondents highlighted that if any required floor payments were not provided on a yearly basis, it could impact financing.

Other suggestions to encourage full operation of assets to prevent dispatch distortions included:

- a 'must-offer' obligation
- a bonus for minimising annuity payments
- contracts to maximise revenue
- a soft floor

It was also suggested that floor payments should be based on a 'notional' cost of debt for 100% of the Regulated Asset Value (RAV) for balance sheet projects and actual cost of debt plus an appropriate debt service cover ratio for project finance.

23. Do you agree with our proposed mitigations, or would you recommend others?

Summary of stakeholder responses:

Response	Number of respondents
Agreed	31
Disagreed	12
Unsure	7
Didn't Answer	63

Of the 50 respondents to this question, the majority agreed with the proposed mitigations that were outlined in the consultation to encourage the full operation of assets.

Responses in agreement

Many of the respondents stated their preferences for mitigations in their response to question 21 and question 22. A soft cap and a multi-year review process were the most popular

mitigations among respondents. Respondents felt that a multi-year review period would dampen the volatility of the electricity market on a yearly basis. Some respondents were supportive of introducing availability targets for the assets, and some respondents argued that these mitigations should be combined to achieve the desired outcome.

Responses in disagreement

Some respondents stated that the proposed incentives would be too complex to set up, while others felt that market competition would be sufficient in reducing excessive profits by assets. Some respondents agreed with the mitigations for the cap, but disagreed there was a need to introduce mitigations on the floor as they did not perceive a risk of distortions around the floor.

Government response (Q21, 22 and 23)

It is important that assets in receipt of cap and floor support are encouraged to obtain maximum revenue from the market. It is therefore important that protections are in place to incentivise assets to operate above the floor and to continue operation when close to, or above, the cap. The support for the mitigations listed in our consultation is welcome and we thank stakeholders for their responses.

We have noted that there was some concern around the complexity of some of the proposals, as well as potentially requiring floor payments specifically to be accounted for in annual reviews. We acknowledge this feedback. **We are therefore confirming that our minded-to position is that mitigations listed, including the use of soft caps, be used** but we will work with Ofgem to define the detail of each to provide certainty to industry. We believe this provides the right balance in confirming how we will protect against mitigation risks whilst allowing time to determine the exact details of each mitigation used.

2.4.3.2 Gaming risks

24. Have we identified relevant operational risks associated with creating an LDES investment scheme?

Summary of stakeholder responses:

Response	Number of respondents
Agreed	29
Disagreed	20
Unsure	10
Didn't Answer	54

Out of the 59 stakeholders that responded to this question, many of them agreed that we had identified the potential risks associated with the cap and floor scheme. Some of these respondents agreed that umbrella companies were a significant contributor to this risk.

Some of the respondents that disagreed felt that the risks of gaming within the scheme were unlikely to materialise because investors would not invest in an asset that relied on gaming to earn revenues, such as underbidding in the market to receive the floor top up payment. Respondents also highlighted how mitigations to this risk could penalise operators that carry out optimisation of their assets in house.

While respondents acknowledged that the risks identified in the consultation were relevant, many highlighted that there were existing regulatory and licencing mechanisms to tackle them (though there was some debate about whether these were adequate). Other means of reducing this risk that were raised were through competitive markets and a robust CBA process in the assessment stage of the scheme.

25. Are our proposed mitigations sufficient for mitigating against the operational risks, like gaming? Please provide your reasoning.

Summary of stakeholder responses:

Response	Number of respondents
Agreed	8
Disagreed	14
Mixed	20
Unsure	13
Didn't Answer	58

There were 55 responses to this question. Most of the respondents to this question either disagreed or had mixed opinions on the mitigations to the risk of gaming that were set out in the consultation.

Transparency requirement

The mitigation that received the most engagement was the proposal to introduce transparency requirements for the participants of the scheme. Respondents felt that this mitigation would reduce the risk of gaming and create support for the scheme, without being overly complex or discriminatory. However, it was highlighted that mechanisms such as REMIT, licence codes and regulation could be used to achieve this transparency.

Deemed revenue index

Many respondents strongly disagreed with and cautioned government against introducing a deemed revenue index. They felt that it would add a huge amount of complexity to the scheme and be very difficult to account for various trading approaches, technologies, and markets. Respondents felt that a deemed index could make the scheme unattractive to investors, as well as creating the risk of further distorting the market as assets could be inclined to follow the index rather than market signals.

Banning vertically integrated supply and offtake agreements

This proposal received a mixed response, with some respondents supporting these mitigations, while others were strongly against. Respondents felt that this measure would be discriminatory against companies with inhouse optimisation capabilities. It could, some argued, also result in a constrained market and limited optimisation of the assets.

Government response (Q24 and 25):

We appreciate the level of engagement in this question and for the well-developed responses received. We recognise concerns raised by industry on some of the proposed mitigations put forward in our consultation. It is important that we find practical, proportionate mitigations to reduce risk of gaming to ensure consumers are protected.

In parallel to reviewing responses, we have commissioned external consultants to carry out a review of gaming risks associated with the cap and floor, as well as appropriate mitigations, to give further certainty on the approach we intend to use against identified risks. **While no incentive scheme can guarantee total safety from gaming risk, we are content that sufficient mitigations exist and we are therefore proceeding with the cap and floor approach.** We will work alongside Ofgem to set out the precise mitigations we intend to deploy, some of which will be outlined in a technical decision document this winter.

2.4.4 Administrative allocation

26. Do you agree that the cap and floor scheme should be allocated administratively?

Summary of stakeholder responses:

Response	Number of respondents
Agreed	51
Disagreed	9
Unsure	6
Mixed	4
Didn't Answer	43

There were 70 responses to this question. By 'allocated administratively', we mean a system whereby projects would be assessed across a range of criteria by the scheme administrator (see qq38-40), who would have discretion to reach an holistic judgement, rather than assessing bids narrowly against a single criterion e.g. cost, which we term a 'competitive approach'.

Out of the 70 respondents, the vast majority were in support of an administratively administered approach to the cap and floor scheme. Many believed that this approach would provide the most benefits to the system compared to a competitive approach as projects would be assessed widely against the objectives of the policy. This would allow projects that provide more system benefits to receive support, allowing the best overall value projects to be selected, rather than just the lowest cost.

A small number of respondents had a mixed response and suggested that stream 1 could be a competitive process for the more established technologies, while an administrative process would be best for stream 2.

A small number of respondents felt that a competitive process was more appropriate than an administrative process. Reasons cited for this view were:

- to achieve lowest costs
- the government does not have sufficient expertise to administer the allocation and it would allow government to "pick winners"

Some supporters of an administrative approach argued that it should be more streamlined than that employed for the interconnector cap and floor scheme and that it should move to a competitive approach in the long term.

Government response:

We welcome the strong support for this approach and can confirm **we are minded that the scheme be allocated administratively, subject to further consideration by Ofgem and**

NESO (see section 2.5.1). We believe this allows wider benefits of projects to be considered, meaning the best overall projects for the power system can be selected for support, rather than just projects with the lowest initial cost.

We note the concern that the government does not have sufficient expertise to administer the allocation and our decision on this is therefore to be taken together with our recognition that Ofgem is best placed to administer this scheme.

2.4.5 Contract length

27. Do you agree that length of a cap and floor contract should be based on the project length?

Summary of stakeholder responses:

Response	Number of respondents
Agreed	31
Disagreed	28
Unsure	10
Didn't Answer	44

There were 69 responses to this question. Respondents to this question were closely split on how contract length should be set for the LDES cap and floor. Note that while we used, and stakeholders responded, in the language of 'contracts' to describe the nature of the agreement that would exist between the cap and floor delivery body, and LDES asset operators, this does not necessarily entail that we would use e.g. a private-law contract as the mechanism to formalise that agreement. We think it is fair to read responses in general as applying to whatever form that agreement might take.

Responses in agreement

Some of the respondents felt that basing contracts on project length would be best to allow the scheme to support a variety of technologies and recognise that they will cater for different expected operating lengths of different technology types. Some respondents also felt this would lower costs and improve financing options. However, some of the respondents in agreement did think that there should be a cut-off to the contracts, with some suggesting it should be up to 25 years, while some others felt it should align with debt repayments.

Responses in disagreement

Some respondents felt that contracts based on the project length would not provide good value as the length of support could be too long. Some also felt that it could add additional complexity to the scheme and should be based on a set length, while some others thought that the contracts should be based on the length of debt service or align with the terms of the financial contracts for each project.

It was also suggested that, given projects can continue to operate beyond their “project lifetimes”, post-contract operation needs to be considered, and how the cap and floor agreements will conclude.

Government response:

We note the helpful feedback from stakeholders, suggesting this is a complex issue that requires further consideration. We recognise the need to balance value for money to consumers, whilst also offering contracts of sufficient duration to unlock investment in these vital assets. This includes providing clarity on how each project will be assessed and what will happen at the end of contracts.

To address this, **we are minded to enable cap and floor support based on either project length up until the first refurbishment (as detailed in our consultation) or up to 25 years (in line with the arrangement for interconnectors).** We will set out our final position, alongside detailing what happens on conclusion of individual projects, in a technical decision document to be published this winter. This allows us to provide some certainty on our intended approach, confirming that support will not be for an indefinite period, whilst allowing government and Ofgem to develop the detail ahead of future allocation rounds.

2.4.6 Revenue opportunities

28. Do you agree that cap and floor recipients should also be able to participate in other electricity markets, such as the CM? Please provide reasoning.

Summary of stakeholder responses:

Response	Number of respondents
Agreed	65
Disagreed	8
Unsure	5
Didn't Answer	35

78 responses were provided to this question. A large majority of respondents agreed that recipients of the cap and floor scheme should be allowed to participate in other electricity markets such as the CM. The most cited reason for the support of this position is that it will allow the maximisation of revenues and diversification of revenue streams. This would reduce the risk of assets dropping below the floor threshold, which will then minimise the potential cost to consumers. There was also support from respondents to allow the participants of the LDES cap and floor to operate in the balancing mechanism and earn revenue from ancillary services.

Respondents highlighted that the electricity interconnectors scheme also allows recipients to participate in the CM while receiving cap and floor support. While these respondents supported the position to allow access to the CM, some recommended that they only be allowed with fettered access, such as only being permitted to compete for one-year contracts, and to be required to be a price taker⁶.

A small number of respondents disagreed with allowing assets to participate in the CM as it could cause distortions to the auction prices, as they might be able to submit lower prices than other assets due to the support provided by the cap and floor. Some respondents felt that recipients of the cap and floor scheme should only be able to access Balancing Mechanism and ancillary services markets.

Government response (Q28):

We welcome the strong support in allowing cap and floor recipients to participate in the Capacity Market. We want assets to maximise all available revenue streams and envisage the CM playing a key role here. This also helps minimize the need for any floor payments which, as noted previously, we are looking to avoid unless necessary. **Government have decided that LDES projects receiving cap and floor support will be able to participate in the CM.** We will continue to consider whether further parameters around participation in the CM will be required for LDES cap and floor projects.

2.4.7 Additional finance support

29. To what extent could finance be needed from UK Infrastructure Bank or elsewhere, alongside the cap and floor scheme, to help address barriers to investment in LDES?

Response summary:

The most popular responses to this question outlined that public financing from the UK Infrastructure Bank (UKIB), or elsewhere, can help to reduce barriers to investment and expand the pool of private finance going into LDES projects. Financing from UKIB (across its debt, equity and guarantee products) could be seen as a positive signal by private investors and increase their willingness to invest in LDES assets.

⁶ "Existing capacity providers are price-takers and cannot exit the auction until the price drops below the price-taker threshold", https://assets.publishing.service.gov.uk/media/5a74aec6ed915d0e8e39a2dc/Capacity_Market_-_parameters_0810.pdf

Respondents felt that UKIB will also be very helpful for first of kind (FOAK) technologies to overcome the barriers to investment, such as the lack of traditional project finance taking the technological risk, bridging the gap between pilot and commercial stage of projects and provide confidence in the commercial model. It was highlighted that FOAK technologies could still be seen as “risky” compared to PSH. UKIB can help bridge the gap for less mature technologies that are struggling to reach market or get support from traditional investors.

Other instances that UKIB financing could help that were mentioned were to cover pre-cap and floor construction costs. UKIB has already done this for some smaller scale LDES projects, but it was stated that this does not remove the need for a cap and floor mechanism to help widen the pool of private finance prepared to support projects. Several respondents also saw the need for UKIB finance to support PSH projects, given the large capital expenditure requirements and long construction periods.

A small number of respondents felt that public financing from UKIB or elsewhere would be unnecessary and that the cap and floor would provide enough support to enable the investment needed.

Government response (Q29)

We have shared these useful contributions with UKIB to help guide thinking on what additional support may be necessary to unlock investment in LDES assets and will continue to engage with UKIB during the design of this regime, to ensure that our respective levers are complementary. We will also factor in these responses when considering the level of support required for projects.

2.4.8 Pre-qualification criteria

30. Do you agree that the proposed pre-qualification criteria are reasonable for both streams? Please provide your reasoning.

Summary of stakeholder responses:

Response	Number of respondents
Agreed	40
Disagreed	19
Unsure	8
Didn't Answer	46

Out of the 67 stakeholders that responded to this question, the majority agreed that the pre-qualification criteria proposed in the consultation were reasonable for both streams.

Responses in agreement

Respondents felt that it would reduce the administrative burden because it would reduce the volume of phantom project applications. However, while these respondents agreed with the criteria, some of them felt that the scheme should take a more permissive approach when assessing projects against them. Some suggested that for some of the proposed criteria, such as requiring a grid connection agreement before receiving cap and floor support, proof that project is in the process of gaining one by the target start date should be sufficient to pass the assessment. Some other respondents suggested that the assessment of criteria should be a staged approach, with the completion of all criteria required at a later stage.

Responses in disagreement

A minority of respondents disagreed with the proposed selection criteria. Some respondents raised issues around delays attaining planning permission and grid connection agreements which would make meeting these requirements difficult. Some felt that requiring projects to meet these requirements could be detrimental to securing investment. Some others felt that it would be detrimental to FOAK projects or new players as it could be harder for them to achieve these requirements.

Some respondents suggested further criteria that should be considered as part of the pre-qualification process, which are included in the summary of Q31.

31. Are there additional pre-qualification criteria that should be considered to establish the eligibility of a project?

Summary of stakeholder responses:

Response	Number of respondents
Suggested additional pre-qualification criteria	22
Did not suggest additional pre-qualification criteria	28
Unsure	9
Didn't Answer	56

59 responses were received to for this question, with views split amongst stakeholders. Those in agreement suggested the following additional criteria should be used:

- maturity of project
- supply chain and procurement
- portfolio approach
- risk register

-
- duration capability
 - environmental impact
 - delivery organisation
 - scalability
 - local impact and support
 - financial position

32. If you have a LDES project in the pipeline, how would these eligibility parameters affect your project's application?

Response summary:

Out of the 47 stakeholders that responded to this question, 13 stated that they felt that their project would be able to pass through the pre-qualification process if the criteria were as set out in the consultation. The criteria provided in the consultation included: criteria for the financial position of the project, its connection location and grid agreement, land/lease ownership, planning permission, environmental permits, and whether the project has an electricity generation licence.

However, some other respondents felt that if their project would be assessed against these criteria it would increase the investment risk associated with it. A few of the respondents stated that all projects within the pipeline would fail if assessed against the criteria set out in the consultation. Some of the respondents feel that it could be difficult for projects to meet these eligibility criteria due to the timelines of their projects. It could also increase their project costs if they were required to meet these criteria ahead of submitting an application. Some respondents also raised concerns with the ability to meet some of the criteria that required a long application process (including some raised previously in question 30) such as:

- planning permission
- grid connection agreements
- environmental permits

Some respondents felt that there should be some flexibility with demonstrating compliance against the criteria, suggesting a staged process should be used for meeting these.

Government response (Q30, 31 and 32)

Whilst most respondents were in support for our approach, we recognise some concerns. We need confidence that projects supported through this scheme will be delivered in time to help contribute towards decarbonisation. Pre-qualification criteria go some way towards building this confidence. However, we understand there are nuances around what might be suitable – for example, whether a grid connection agreement application, or a particular planning application being submitted, would be enough to be able to apply for cap and floor support.

Responses received have been helpful in building our understanding of these concerns. **We are therefore setting out an intention to introduce pre-qualification criteria**, likely including the criteria listed in the consultation, but we will work with Ofgem to determine what

the minimum acceptable evidence for demonstrating eligibility for each will be as well as whether other combinations of criteria should be used. We will set this out in a technical decision document this winter. We intend that this gives the pipeline of projects a reasonable sense of what will be required while providing some additional time to refine the list on the basis of representations we've received.

2.4.9 Additional factors

33. What time length would you recommend for conducting reviews of cap/floor threshold (e.g., annual or multi-year)?

Response summary:

Of the 65 respondents to this question, 19 preferred multi-year review periods over an annual review period for the thresholds. Respondents that preferred a multi-year approach felt that 3-5 years would be a good point to review the thresholds for the projects. Some of these respondents thought that a multi-year review period would need to be accompanied with an annual assessment of the revenues, due to annual debt repayments. The approach of the interconnector cap and floor was referenced as a good example to follow.

16 of the respondents felt that an annual review period was a good option. However, some respondents thought that annual reviews could make the projects less investable to private financiers. A small number of respondents thought that a review period was not necessary.

It was also suggested that the chosen approach would need to take into account the financing structure for projects and investors.

34. Do you agree that exceptional events should be considered as part of the review of cap/floor? Please provide your reasoning.

Summary of stakeholder responses:

Response	Number of respondents
Agreed	55
Disagreed	2
Unsure	7
Didn't Answer	49

There were 64 responses to this question. The majority of respondents to this question felt that the LDES cap and floor scheme should take into account and be adjusted for *force majeure* and exceptional events. Some of the respondents agreed with this position as it would help

account for uninsurable external events, citing examples such as Covid-19 and Russia's invasion of Ukraine. Some of the respondents agreed with the consultation's position that this should follow the cap and floor scheme for interconnectors.

Respondents noted that the process should involve a robust evaluation of the events and be fully transparent. The need for a clear definition for what would be considered as an "exceptional event" was raised by 5 of the respondents.

Only 2 respondents disagreed with the need to consider exceptional events. However, some respondents raised concerns with the process, such as:

- it could transfer operational risks on to consumers
- exceptional events could create super profits
- contractual provisions should be enough

35. What criteria could a proving period for LDES be based on?

Summary of stakeholder responses:

56 stakeholders responded to this question. Some respondents felt that the LDES cap and floor would not require a proving period, noting that it would be inappropriate for LDES technologies, specifically because it will be supporting a wide range of technologies and because some of these are novel technologies. It was also raised that it could create a risk for investors. One respondent stated that LDES was not comparable to interconnectors.

Many respondents were supportive of a proving period for the LDES cap and floor. The electricity interconnectors cap and floor scheme was referenced as a good starting point, adjusting for LDES technology specifics. 1,3 and 5-year proving periods were all suggested by small number of respondents.

Some of the suggested criteria raised by stakeholders were:

- alignment with requirements for grid connections or for the CM
- milestones
- financial commitments
- permit/licences
- grid connection readiness
- tech viability demonstration
- actual operations
- availability
- response time
- revenue
- efficiency
- capacity testing

Some respondents that did agree with a proving period suggested that there should be some flexibility allowed for external delays that are beyond the projects control, such as grid

connection delays. Some respondents provided alternatives to a proving period, with 6 respondents suggesting reviews against pre-agreed milestones.

36. Do you agree that target start dates should be set? If not, please explain why.

Summary of stakeholder responses:

Response	Number of respondents
Agreed	52
Disagreed	7
Unsure	6
Didn't Answer	48

Out of the 65 responses to this question, the majority of the respondents agreed that target dates for the commissioning of an asset should be set in the LDES cap and floor.

Responses in agreement

Some of the respondents agreed with setting a target start date because they felt it would help to provide clarity to other participants and other bodies such as NESO on when capacity can be expected to be available, which will help with planning. Some felt that while there should be target dates, there should be a flexible process for agreeing these dates, with some suggesting greater flexibility than 12 months before a penalty is applied. Some respondents argued that we should follow the interconnector cap and floor scheme and set a 12-month delay limit past the target date.

A small number of respondents disagreed with the suggestion to introduce target dates. The main concern with setting target dates was the complexity of the construction phase and the risks that were involved, especially with underground caverns for PSH. Some respondents felt that it would not be appropriate to implement for novel technologies as delays in deployment are an inherent part of the technology deployment challenge. It was also highlighted by a small number of respondents that challenges such as long grid connection timings could impact the target dates.

37. Are there any other parameters that we should be considering in the design of the scheme?

Summary of stakeholder responses:

Response	Number of respondents
Agreed	35
Disagreed	5
Unsure	10
Didn't Answer	63

50 responses were received for this question. The majority of respondents to this question agreed that there were further parameters that needed to be considered as part of the scheme design, with many additional parameters suggested.

The most frequently mentioned additional parameter was the need to ensure that additional barriers were not created for co-location of LDES assets with renewable energy technologies. Stakeholders argued that further consideration needs to be given to the impacts of the scheme on co-located sites and ensuring they do not create barriers for these projects.

Some respondents raised that there should be consideration given to how the cap and floor scheme will end and what will happen at the end of the agreements. Further consideration on how the scheme will align with NESO's future grids requirements was raised by 4 respondents.

Additional parameters that were mentioned less frequently but worth noting were:

- how to limit the scheme's impact on short duration storage markets
- refurbishment of existing projects
- timelines and connection dates
- how the sustainability profile of a project will be considered (CO₂, toxic materials)
- whether early exits from agreements can be facilitated

Some respondents felt that parameters of the scheme should be flexible and specific to agreements.

Government response (Q33 – 37)

We thank respondents for the range of response to these questions. Similar to the response for Q30 – 32, **we will work with Ofgem to define the exact design criteria we would expect in applications. These will be set out ahead of the first application window.**

2.5 Delivery routes

2.5.1 Option one – Ofgem delivery; Option two – government delivery

38. What are the important factors for deciding who is the appropriate body to bring forward this scheme?

Summary of stakeholder responses:

Preferred delivery body:	Number of respondents
Support for selecting Ofgem	22
Support for selecting DESNZ	12

Factor mentioned:	No. of times mentioned
Speed of delivery	18
Expertise	16
Independence / transparency	7
Resources	7
Flexibility	7
Coordination with other relevant schemes/policy	6
Use or compliment the CM	3
Investor confidence	3
Engagement with Low Carbon Contracts Company (LCCC)	3
Legislative impacts	2
Engagement with NESO	2

There were 71 responses to this question. Some respondents provided multiple factors that have been included in the table above. We have set out above the number of respondents that were expressly in favour of each delivery route and in a separate table set out the factors that respondents felt should be considered when choosing a delivery body. From the above table, it

should be noted that Ofgem was expressly preferred as delivery body almost twice as much as DESNZ. “Speed of delivery” was the most common reason given for delivery body preference, followed closely by expertise. Ensuring a transparent, well-equipped and adaptable body was selected were also recurring themes raised, amongst other less frequently factors listed above. A few respondents warned against simply repeating what has been used for electricity interconnectors without due consideration, as they differ from LDES technologies.

39. Would either of the delivery routes set out affect the investment case for LDES projects?

Summary of stakeholder responses:

Response	Number of respondents
Agreed	22
Disagreed	13
Unsure	13
Didn't Answer	65

There were 48 responses to this question. Overall, a majority of respondents who had a view believed that the delivery option would affect the investment case. Out of the respondents who stated their preferred option, a majority favoured Ofgem as the delivery body over DESNZ. Reasons for why the scheme delivery route would affect investment, and why there were more preferences for Ofgem, were similar to responses for Q38 – speed and expertise in particular.

40. Are there any additional benefits or risks to a delivery route that has not been identified?

Summary of stakeholder responses:

Response	Number of respondents
Agreed	6
Disagreed	5
Unsure	13
Didn't Answer	89

A relatively small number of responses were received for this question, 24. A few respondents highlighted that Ofgem would be better placed to co-ordinate support over a range of projects. A couple of respondents noted perceived political risk leading to potentially granting cap and floor schemes in a manner that could adversely impact consumer bills if DESNZ were to administer delivery of the scheme.

Government response (Q38, 39 and 40):

We thank stakeholders for the level of detail provided in the responses to these questions, which have helped guide our decision on how this regime would be best delivered. **We can confirm that Government agrees that Ofgem is best placed to deliver the cap and floor scheme. Noting Ofgem’s independence, we have therefore asked the Gas and Electricity Market Authority (GEMA), and they have agreed, to take on the role of regulator for LDES (which encompasses the role of investment framework delivery body).** This government decision is based on careful analysis of stakeholder responses and discussions with Ofgem and LCCC, resulting in the following rationale for government’s decision:

- Ofgem has a long and successful track record in using licencing arrangements to regulate in support of investment in significant flexibility assets through making a cap and floor scheme available to electricity interconnector investors. This will ensure expertise and lessons from the electricity interconnector cap and floor scheme are effectively fed into the design of the LDES scheme.
- DESNZ has not managed such a cap and floor scheme before and so lacks this level of specific expertise and would take a significant time to develop it. It should also be noted that DESNZ would need to implement an enduring regime for facilitating allocation rounds and enforcing agreements with projects, which it lacks experience in and does not do for other industry support schemes.
- The Ofgem delivery route is the most supported from the consultation responses received. Given it is an independent regulator, it will also address the independence/transparency preferences raised by stakeholders.
- We believe that Ofgem can deliver this regime in the shortest period of time and without needing further legislation given the clarity already provided on the regulation of electricity storage through the Energy Act 2023. Ofgem may be required to consult further on some aspects of the scheme. This will address industry concerns on the speed of delivery (which were repeatedly raised in respond to the recent consultation). In comparison, a DESNZ-led scheme would need new legislation.

For these reasons, we believe Ofgem offers the best balance of delivering to our ambitious timelines and ensuring a regime is implemented that is fit for purpose for decades to come.

2.5.2 Scheme funding mechanisms

41. Do you believe Transmission Network Use of System (TNUoS) charges should be used if the scheme is administered by Ofgem (option 1)? If not, please provide your reasoning and/or an alternate method.

Summary of stakeholder responses:

Response	Number of respondents
Agreed	20
Disagreed	7
Unsure	13
Didn't Answer	73

There were 40 responses to this question. Overall, respondents who answered mostly agreed that TNUoS charges should be used if Ofgem were to deliver this regime. Reasons provided included the track record offered given this charging methodology is used for the existing electricity interconnector cap and floor, and the greater certainty (and so lower risk premia) this approach would provide investors.

A minority of respondents did not consider TNUoS to be the optimal choice. They favoured the use of the supplier obligation levy or Balancing Services Use of System (BSUoS) for reasons of view on best fit or because of the ongoing TNUoS reform process being perceived as potentially bringing challenges.

42. Do you believe a supplier obligation levy should be used if the scheme is administered using a CfD style approach (option 2)? If not, please provide your reasoning and/or an alternate method.

Response summary:

Response	Number of respondents
Agreed	23
Disagreed	11
Unsure	11
Didn't Answer	68

There were 45 responses to this question. The majority of respondents agreed that a supplier obligation levy should be used if option 2 is selected as the delivery route. However, this was cautioned against by several respondents who would still prefer use of TNUoS in option 2 for increased investor certainty or cap and floor scheme track record, or who did not agree with either option but without in some cases providing an alternative. A few respondents also

suggested using a hybrid approach of the options offered, with Ofgem administering the regime and the LCCC facilitating any necessary revenue redistribution.

Government response (Q41 and 42):

From consideration of all the evidence presented in consultation responses, **our current preference is for network charges to be used, rather than a Supplier Obligation Levy.** Ofgem, as part of its core functions, approves the methodologies by which network charges are levied. Ofgem is the intended administrator of the cap and floor scheme, and we believe that the use of network charges would create an efficient administrative framework for the cap and floor scheme. We welcome general stakeholder support for this. We think that this approach can facilitate the consistency between the administration and cost-recovery mechanisms of the cap and floor arrangements for electricity interconnectors and LDES.

There are anticipated benefits LDES could provide network users from reduced curtailment and minimisation of necessary grid build out. We will work with Ofgem to further explore the practicalities of different charging routes, especially with respect to speed of implementation and the potential effect on consumer bills in the context of Ofgem's Principal Objective, and to provide greater clarity on how any LDES cap and floor payments would be handled, in a future communication.

3 Next Steps

This consultation response provides a firm commitment to deliver significant LDES capacity through an Ofgem regulated scheme, and outlines the government's preferences as to many of the key parameters of that scheme (including government's decision that a cap and floor scheme is the optimal policy approach for facilitating rapid and efficient LDES investment). We will now work with Ofgem and others with the intention of Ofgem opening a scheme to applications in 2025.

A key stage in enabling this will be a **technical decision document** published this winter, addressing the remaining questions for a cap and floor scheme which relate to the government's strategic priorities for LDES, i.e.:

- Set out how future LDES capacity needs will be determined;
- Confirming whether the minimum duration for projects to be eligible will remain at six hours, or be raised;
- Determining the minimum capacity required for eligibility for Stream 2 (i.e. projects at TRL 8);
- Further detail on the approach to be taken in setting the cap and floor, including whether non-debt financing could be included in the floor calculation;
- Confirming our approach to mitigating 'gaming' of the system (with some of the detail of the implementation falling to Ofgem to specify in due course);
- Setting out how the length of cap and floor agreements will be determined; and
- Announcing any (other) pre-qualification criteria and how these will be assessed.

The government will continue to work with industry and other stakeholders, as well of course with Ofgem and NESO, in developing its positions on these matters. Beyond this, there will be a number of questions to resolve in advance of the first application window, including:

- How efficiency will be factored into bid assessments;
- Setting thresholds and confirming a final list of wider system benefits to be considered in assessments;
- Providing further details on how TRLs will be assessed,
- How projects' plans to operationalise the asset to exceed the floor will be considered in assessments;
- How 'gross margin' will be calculated;
- Detail on how to mitigate against dispatch distortion risks;
- In addition to any further detail on how the cap and floor scheme will be administered; and to confirm further design criteria.

We are taking this three-stage approach (which includes this initial consultation response) to setting out next steps to maintain investor information and confidence and thus speed of delivery, while allowing time for further consideration of the consultation responses (and additional analysis) on the most detailed questions. This publication should be read as a ‘green light’ for projects in the pipeline regarding government’s commitment to introduce a cap and floor scheme, bringing into delivery the next generation of LDES to support the net zero transition and energy security cost-effectively. The technical decision document will give the market a clear explanation of how the scheme will work and what exactly it is seeking to achieve. Prior to the first application window, Ofgem will clarify the exact assessment methodology and artefacts required for applications.

We would like to take a final opportunity to thank all those who responded to the consultation for their time and input.

This publication is available from: www.gov.uk/government/consultations/long-duration-electricity-storage-proposals-to-enable-investment

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