

Long Duration Electricity Storage Financial Framework

Author: [REDACTED]

Electricity Storage Network

The Electricity Storage Network (ESN) is the industry group and voice for grid-scale electricity storage in GB. The ESN has 100 members who have a mission to promote the use of energy storage and flexibility to support the net-zero transition. The ESN membership includes clean energy developers, owners, investors, optimisers, and academic institutions. This includes representation from publicly listed specialist funds focusing on storage and independent developers that have raised several billion pounds to invest in this new technology.

About Regen

Regen manages the ESN. Regen provides independent, evidence-led insight and advice supporting our mission to transform the UK's energy system for a net zero future. We focus on analysing the systemic challenges of decarbonising power, heat and transport. We know that a transformation of this scale will require engaging the whole of society in a just transition.

Regen is also a membership organisation that manages the Regen members' network and the Electricity Storage Network (ESN). We have over 200 members who share our mission, including clean energy developers, businesses, local authorities, community energy groups, academic institutions, and research organisations.

Continuing engagement

Electricity Storage Network Lead – [REDACTED]

T: [REDACTED]

E: [REDACTED]

Associate Director, Regen – [REDACTED]

E: [REDACTED]

Background

The Electricity Storage Network has been engaging extensively around the development of Long Duration Electricity Storage (LDES) policy support, including via our Innovation and Technology working group. The points made in those meetings, member surveys and workshops – as well as feedback from bilateral conversations with members – have fed into our consultation response.

DESNZ commissioned Regen and LCP Delta to assess the optimal level of LDES deployment and the role LDES could play in delivering flexibility requirements in a range of electricity market and system scenarios. A crucial part of this work was to seek stakeholder feedback on costs and technical variables for LDES technologies, to inform a modelling study looking at the role of LDES in the future energy system. Using our ESN contacts, Regen conducted an engagement process with leading UK storage technology and project developers, with 25 storage technology developers covering 11 storage technologies, including several ESN members. The full report is available at: [Scenario Deployment Analysis for Long-Duration Electricity Storage](#). ESN also responded to the government's consultation on a cap and floor scheme in March 2024¹, and to Ofgem's call for input in January 2025². Regen's Associate Director, Ray Arrell, also attended an industry roundtable, hosted by Michael Shanks MP, on the priorities for the cap and floor scheme and its implementation.

In June 2025, ESN responded to Ofgem's window 1 project assessment consultation³. This is closely linked to this consultation.

LDES project eligibility process concerns

As we outlined in our project assessment consultation response, we want to highlight some issues that members have raised regarding the eligibility and project assessment process for window 1.

Clarification on connection offers/dates: There remains significant uncertainty regarding the process for evidencing accelerated connection dates and the impact on eligibility for the LDES cap and floor scheme – particularly in the context of grid connection reform and Clean Power 2030 (CP30) capacity allocations for battery storage and LDES, as well as potentially

¹ [Response to the government's consultation on a Long Duration Energy Storage cap and floor scheme](#), March 2024

² [Response to consultation on Ofgem's role, cap and floor plan, and response to the DESNZ publication](#), January 2025

³ [Response to Ofgem's consultation on LDES cap and floor window 1 project assessment](#), June 2025

inconsistent guidance around eligibility criteria for projects that rely on new substations. More guidance on this process would be very helpful for the sector.

Recommendation: Ofgem to work with NESO on the Gate 2 to whole queue connection reform process and provide new guidance to industry on how LDES projects will be treated.

Additional windows: Members would like to understand the likelihood of further windows and would like DESNZ and Ofgem to confirm the timeframes for the next allocation window for the LDES cap and floor scheme. While we appreciate this will depend on the window 1 process, we believe there is a need for more long-term certainty.

Recommendation: Ofgem and DESNZ to clarify timeframes for further windows.

In addition, we believe that there needs to be more clarity provided on the LDES target capacity for window 1. Ofgem has previously stated a 2.7-7.7 GW range in capacity. However, recent documents have stated that a target will be “published in advance of C&F awards in Q2 2026” and “in consultation with NESO and DESNZ”. There is also uncertainty regarding the technology mix and the role of the NESO’s Future Energy Scenarios (FES) 2025, which will include technology-based breakdowns, now published and to be used in the counterfactual assessment, and later in the Strategic Spatial Energy Plan (SSEP).

Recommendation: Ofgem and DESNZ to set a clear, overall LDES capacity target for window 1 that is communicated to the sector as soon as practically possible and accounts for project attrition. This should include how this relates to other NESO analyses (e.g. FES 2025 and SSEP).

Our members have highlighted that the current proposals for project assessment lack transparency and risk being challenged by the sector. The lack of guidance/templates/examples provided to the industry will fuel a wide variation of evidence provided in applications, which will create challenges in objectively scoring projects. We also believe that the approach to consulting separately on the financial framework, which is very closely linked to the project assessment, brings further risk of challenge on procedural grounds.

Recommendation: Ofgem to provide further detailed guidance, templates and examples of the evidence required for the project assessment process to help reduce the risk of being challenged by the sector.

Summary and recommendations

This response sets out detailed and urgent recommendations to ensure that the Long Duration Energy Storage (LDES) cap and floor regime is investable, fair across technology types, and fit for purpose. At present, the financial framework and project assessment approach need significant reform to deliver LDES at the scale and pace required by Clean Power 2030. Overall, the recommendations emphasise the need for greater transparency, fairness and risk-sharing to support investment in a diverse set of LDES technologies. See the full list of recommendations below:

- **Recommendation:** Ofgem to publish clear guidance to industry on the approach to scoring of non-administrative cap and floor levels in the financial assessment and how this relates to the wider project assessment.
- **Recommendation:** Ofgem to review the administrative cap and floor levels to reflect the higher risks associated with LDES projects compared to interconnectors.
- **Recommendation:** Ofgem to change its approach to inflation by including tracking or a re-opener mechanism.
- **Recommendation:** Ofgem needs to review whether the competitive framework will deliver investable projects for all technology types and does not disadvantage technologies with higher construction or technical risk.
- **Recommendation:** Ofgem and DESNZ to review competitive bid-based assessments for the first window. Use administrative benchmarks by technology group to create fairness and comparability.
- **Recommendation:** Ofgem to publish a clear overall LDES capacity target, accounting for project attrition, to be communicated to the sector as early as possible to support effective investment and delivery planning. Ofgem to confirm that they will be engaging with NESO around this LDES target in the context of FES 2025 (and beyond), SSEP, CSNP and RESPs.
- **Recommendation:** Ofgem to provide more guidance to industry on what would constitute overly optimistic bidding.
- **Recommendation:** Ofgem should develop MAT metrics tailored to different LDES technologies, co-designed with industry, and consult on definitions well ahead of licence drafting.
- **Recommendation:** Ofgem to consider introducing a performance grace period or ramp-up phase, especially for complex assets that may take time to reach full operational capabilities.
- **Recommendation:** Significantly increase the soft cap sharing rate above 10% (or 20%) proposed.
- **Recommendation:** Ofgem to review its approach to decommissioning costs (e.g. via a decommissioning reopener).
- **Recommendation:** Ofgem to review the approach to the cost and delivery incentives. Further engagement with industry is needed to find workable solutions.

- **Recommendation:** Ofgem to use the interconnector force majeure definition and add a category for exceptional events.
- **Recommendation:** Cap and floor payments should be recovered via BSUoS, not TNUoS.
- **Recommendation:** Ofgem to clarify if BSUoS costs would be a pass-through cost or not for projects.
- **Recommendation:** Ofgem to remove residual value from the administrative model. If clawback is retained, apply it narrowly and proportionately.

Responses to questions

Question 1

What are your views on our proposal to move beyond focusing solely on project return rates at the C&F levels, towards a more flexible approach that allows projects to tailor key parameters to the needs of their LDES project archetype?

The role of competition seems to be the most challenging aspect of the scheme design, given the level of interest and the 171 applications received in window 1. There is a tension in the approach outlined by Ofgem. This is shown where Ofgem states that “the framework combines administrative and competitive elements”. From an industry perspective, that is challenging to understand. Some members are keen for an administrative-only process, whereas others are keen to emphasise the importance of competition to drive down costs for consumers. Our understanding is that competitive bids can offer lower caps or floors, but projects exceeding administrative levels will be adjusted downward. There is confusion among stakeholders on how trade-offs between cap and floor levels will influence selection and scoring. We understand that this will be part of the financial assessment aspect of the project assessment, but there remains considerable uncertainty and a lack of transparency. This risks undermining the scheme.

Recommendation: Ofgem to publish clear guidance to industry on the approach to scoring of non-administrative cap and floor levels in the financial assessment and how this relates to the wider project assessment.

Our members are concerned that too much emphasis is being placed on the existing interconnector regime. As Ofgem outlines, there is “greater revenue risk” for LDES projects. We do not agree that “LDES assets carry slightly higher risks [than interconnectors]”. We think the risk is considerably higher as revenues are merchant and uncontracted in the long term outside of the Capacity Market. Therefore, we do not understand why the administrative cap and floor levels have not been increased significantly as a result.

Recommendation: Ofgem to review the administrative cap and floor levels to reflect the higher risks associated with LDES projects compared to interconnectors.

A further point that is not included in the questions outlined is the approach to inflation. Members have raised concerns about the use of a fully nominal approach to inflation indexation, based on a fixed long-term inflation assumption of 2%. We believe the cap and floor scheme would be more efficient if it either tracked actual CPIH inflation, as reflected in Ofgem’s financial model, or included a re-opener mechanism if real inflation exceeds the

nominal index. Without this, developers will need to account for inflation risk in their bids regardless.

Recommendation: Ofgem to change its approach to inflation by including tracking or a re-opener mechanism.

Question 2

How well does the proposed competitive framework accommodate the differing risk profiles of various LDES technologies? Are there any technology-specific considerations that should be better reflected?

We have received mixed views from membership on this area.

Some members have highlighted that the current five bid parameters risk skewing selection toward projects that understate risk or over-optimistically price costs and returns. They disadvantage technologies with higher construction or technical risk. This undermines the regime's credibility and investability.

There are clear differences between different technology types that will make it very challenging for Ofgem to assess fairly.

The use of target rate of return could be seen to penalise technologies that require further preconstruction work (e.g. PSH) to determine risk-adjusted returns. It also fails to account for higher construction risk faced by Stream 2 and PSH technologies, which require a higher return to be investable.

The proposed approach to residual value, treating it as a deduction from the RAV, disproportionately impacts PSH, CAES and other high-CAPEX assets, and risks making them unfinanceable. It introduces revenue uncertainty beyond the regime term, while forcing developers to make assumptions about post-2045 market design in the absence of policy clarity.

Decommissioning costs 20+ years from now are highly uncertain and will vary by technology. PSH in particular faces planning uncertainty that could result in substantial cost increases not covered by Ofgem's proposed change-in-law provisions. Using this as a competitive lever introduces risk and distorts outcomes.

Recommendation: Ofgem needs to review whether the competitive framework will deliver investable projects for all technology types and does not disadvantage technologies with higher construction or technical risk.

Question 3

How can Ofgem best ensure comparability between bids given the bespoke nature of the proposed parameters? Are there specific normalisation techniques or benchmarks you would recommend?

As we outlined in our project assessment consultation response, members have expressed strong reservations about using competitive bids for the first application window. While there was support for the principle of competition to help improve consumer value, they cited the early stage of the scheme (e.g. this being the first window and contract award process), uncertainty around regime design, and the inherent differences between technologies as major challenges.

Participants also warned that inviting bids without standardising project maturity, financial backing or delivery timelines creates a risk of selection based on overly optimistic assumptions, rather than deliverability. The diversity of technologies further complicates this: comparing a BESS project to a first-of-a-kind long-duration system is not feasible without distorting outcomes.

Recommendation: Ofgem and DESNZ to review competitive bid-based assessments for the first window. Use administrative benchmarks by technology group to create fairness and comparability.

In addition, we believe greater clarity is needed on the LDES target capacity for window 1. While a range of 2.7-7.7 GW has been referenced previously, the current position, as we understand it, is that a specific target will be “published in advance of the cap and floor awards in Q2 2026” following consultation with NESO and DESNZ. Any capacity range should not be used as an upper limit, and the role of project attrition should be taken into account. We also believe that other forms of flexibility (e.g. consumer flexibility) and low-carbon dispatchable generation (e.g. CCUS) are likely to be slower to deploy and more expensive than anticipated in the Clean Power 2030 Action Plan. This would mean a wider role and ambition for LDES technologies.

Further uncertainty arises regarding the intended technology mix and the role of NESO’s 2025 Future Energy Scenarios – published on 14 July – which includes a technology-specific breakdown and will inform the counterfactual assessment. We are also unclear how NESO’s pending SSEP and Centralised Strategic Network Plan (CSNP) publications may consider LDES, and there is a risk that the FES 2025 Holistic Transition pathway may not be the absolute capacity figure that the SSEP and associated Regional Energy Strategic Plans (RESPs) will be based on.

Recommendation: Ofgem to publish a clear overall LDES capacity target, accounting for project attrition, to be communicated to the sector as early as possible to support effective investment and delivery planning. Ofgem to confirm that they will be engaging with NESO around this LDES target in the context of FES 2025 (and beyond), SSEP, CSNP and RESPs.

Question 4

What are your views on the proposed truth telling incentives? Do you think these will effectively discourage inflated or strategic bidding?

We support the principle of encouraging truthful bids. However, members have raised concerns regarding the process. The threat of disqualification due to marginal cost optimism could suppress legitimate bids from technologies that are still refining cost estimates. There is also uncertainty regarding how Ofgem will distinguish between strategic underbidding and genuine optimism, particularly on the cost of capital and performance metrics.

Recommendation: Ofgem to provide more guidance to industry on what would constitute overly optimistic bidding.

Question 5

What are your views on our proposed approach to floor setting?

See answers to questions 1, 2 and 3.

We do not believe the administrative floor level outlined is appropriate and Ofgem needs to review its approach. The proposed 4.47% cost of debt does not fairly reflect the risk profile of LDES projects under this scheme, particularly when compared to RII0-3 draft determinations, which range from 4.45% to 5.57% on a semi-nominal basis.

Question 6

What are your views on our proposed performance-linked measures to access the floor and incentives below floor?

Linking floor access to a Minimum Availability Target (MAT) is a reasonable safeguard for consumer value. However, the current proposal raises implementation risks:

- The definition of availability is vague. For storage, availability could mean the ability to discharge, hold charge, or provide services, and this will vary by technology type.
- The clawback mechanism for non-compliant assets may increase perceived risk, particularly if MAT thresholds are set too tightly or updated post-FID.

Recommendation: Ofgem should develop MAT metrics tailored to different LDES technologies, co-designed with industry, and consult on definitions well ahead of licence drafting.

Recommendation: Ofgem to consider introducing a performance grace period or ramp-up phase, especially for complex assets that may take time to reach full operational capabilities.

Question 7

Does the proposed cap design provide the right balance between incentivising efficient operation and sharing upside with consumer?

The dual structure of administrative and competitive caps is appropriate, offering both predictability and flexibility. However, the current 10% revenue retention limit above the cap ('soft cap') is too restrictive and may undermine incentives for innovation, especially for business models targeting revenue stacking.

The soft cap should reflect the commercial reality that high-performing projects delivering larger system benefits should not face punitive clawbacks. We want these assets to be operational in the markets and services available as much as possible, to help the system when required.

Under the Dispatchable Power Agreement, 30% of cash flows above the equity IRR are shared with consumers. RIIO incentives for regulated networks – lower-risk assets than LDES – typically apply 50:50 or 60:40 sharing. Setting a lower soft cap share for LDES is unjustifiably punitive by comparison.

Recommendation: Significantly increase the soft cap sharing rate above 10% (or 20%) proposed.

Question 8

What are your views on the use of the CAPM and the proposed input assumptions (e.g. equity beta, RFR, TMR) for calculating the cost of equity for LDES? Are there refinements or alternatives you would recommend?

We support the use of CAPM as a standardised, transparent method to estimate cost of equity. However, we caution against wholesale adoption of parameters from the interconnector regime without deeper scrutiny of LDES-specific risks.

The proposed beta of 1.125 aligns with RIIO and interconnector precedent, but may underrepresent the operational, technology, and offtake risks inherent to LDES, particularly in early deployment stages. The assumed TMR (6.75%) and RFR (2.26%) are within a reasonable range but embed fixed inflation assumptions which may not hold over long-term build and operating cycles. This adds considerable risk to project developers compared to other previous schemes.

Recommendation: Ofgem to change its approach to inflation by including tracking or a re-opener mechanism.

Question 9

What are your views on the proposed capital cost components for determining the RAV and C&F levels, including the equity and debt transaction cost allowances?

No answer provided.

Question 10

Do you agree with limiting reopeners during the operational phase to opex (after 10 years) and decommissioning (if there's a legal change)?

We support limiting reopeners to specific categories to maintain investor confidence and regulatory certainty. The proposal strikes a good balance by allowing OPEX reopeners every 10 years, which is proportionate for long-lifetime LDES projects with changing cost bases. It also decommissions reopeners only where legal obligations change materially, avoiding gaming or over-forecasting. However, we think that there needs to be more clarity for project developers on what constitutes a valid trigger event.

Some members are concerned that this does not work for PSH projects, as decommissioning costs may not be clarified by the planning authority until after commercial operations. So, further work is needed to clarify how these costs could be included (e.g. via a decommissioning reopener).

Recommendation: Ofgem to review its approach to decommissioning costs (e.g. via a decommissioning reopener).

Question 11

What are your views on the treatment of decommissioning costs and IDC - particularly around timing of recovery, project delays, and legislative changes?

See answer to question 10.

Question 12

What are your views on the proposed IDC rate approach and the option for projects to bid their own rate? Should riskier technologies receive a different rate?

No answer provided.

Question 13

What are your views on the types of cost efficiency and delivery performance incentives included in the regime?

Members are clear that deliverability should be a critical factor in the process, given the short time we have ahead of the Clean Power 2030 targets. However, some members raised that the two approaches significantly increase construction risks. The outturn approach is preferable, but overall, our members believe that this is a step in the wrong direction, particularly given that delays and cost overruns can often be outside of the control of developers: for example, the ongoing grid connection reform process and the severe delays impacting new transmission connection commissioning by National Grid Electricity Transmission (NGET) that our members have been experiencing. We believe this approach has not found the right balance between sharing the risk between consumers and project developers.

Recommendation: Ofgem to review the approach to the cost and delivery incentives. Further engagement with industry is needed to find workable solutions.

We welcome Ofgem's clarification that force majeure includes events beyond the reasonable control of LDES developers, and the flexibility to request delivery deadline extensions to 2032 and 2035. To provide greater certainty, we ask that the force majeure definition be aligned with that used in the Interconnector Cap and Floor regime, which is broad enough to cover typical unforeseen events. In addition, we recommend introducing a distinct category for 'exceptional events', supported by a defined list of circumstances that, while not covered under force majeure, are clearly outside the developer's control and should justify delivery extensions without penalty.

Providing this additional clarity would strengthen the investibility of the regime, particularly in light of the challenges seen in AR6, where the absence of protection for 'exceptional events' contributed to delivery risk. Introducing these measures ahead of Project Assessment would help anticipate and address issues early.

Ofgem's recent guidance to Transmission Companies on Accelerated Strategic Transmission Investment (ASTI) offers a helpful precedent, using a broad definition of circumstances outside the developer's reasonable control. This approach would be appropriate for LDES as well.

Recommendation: Ofgem to use the interconnector force majeure definition and add a category for exceptional events.

Question 14

What is your preferred approach to cost incentives (e.g. cost sharing vs. outturn comparison), and how should these be appropriately calibrated?

See answer to Question 13.

Question 15

Does our proposed mix of gearing caps, ringfencing, and financial reporting strike the right balance between financial resilience and flexibility for LDES projects? If not, what would you change?

We support the inclusion of proportionate financial resilience measures. The proposed 80% gearing cap, ringfencing provisions, and regular reporting provide a sound basis for protecting consumer value and system stability.

Question 16

Which charges - TNUoS or BSUoS - do you consider more appropriate for funding cap and floor payments and receipts, and why?

We do not believe TNUoS charges should be used to fund the cap and floor mechanism. These charges are used to recover the costs of installing and maintaining the transmission system, and LDES is a significant departure from other aspects funded by TNUoS (e.g. interconnectors).

In addition, the current TNUoS regime is uncertain and undergoing reform with a full review by Ofgem planned per the [REMA summer update](#): “We aim to deliver TNUoS reform as soon as possible within this Parliament, and by 2029 at the very latest”. In addition, NESO has formed a TNUoS storage subgroup to guide Ofgem on the necessary reforms. This has been heavily delayed and has only met once so far.

Therefore, we believe BSUoS is more appropriate, given the focus on the cost of day-to-day operation, something LDES projects are tasked with supporting, as well as constraint costs currently being recovered via BSUoS.

Recommendation: Cap and floor payments should be recovered via BSUoS, not TNUoS.

We would like clarity from Ofgem on whether BSUoS (or TNUoS) costs would be considered a pass-through cost for projects or not.

Recommendation: Ofgem to clarify if BSUoS costs would be a pass-through cost or not for projects.

Question 17

What are your views on including a residual value at the end of the cap and floor period, and how should this affect depreciation and investor returns?

Some members are very concerned about the concept of including residual value in the cap and floor-level setting process. For capital-intensive technologies such as PSH and CAES, the merchant tail is a critical part of the investment case.

The combination of competitive bidding and residual value assumptions risks making projects uninvestable. If Ofgem is intent on clawback mechanisms post-regime, these must be tightly limited:

- **Time-bound:** maximum five years post-regime
- **Event-driven:** only triggered if significant floor payments were made and not offset by cap receipts
- **Targeted:** apply only to revenues above the cap.

This mirrors the approach used in the Interconnector Window 3 scheme and should be adopted to avoid deterring investment.

Recommendation: Ofgem to remove residual value from the administrative model. If clawback is retained, apply it narrowly and proportionately.

Question 18

What policy mechanisms should be introduced to support investability now and post-regime or recovery of residual value beyond the C&F period?

See answer to Question 17.

Question 19

What are your views on our proposed financial model and handbook?
Do you have any suggestions for simplifying it while keeping it clear
and robust?

No answer provided.