

Response to DESNZ Long duration energy storage

5th March 2024

About Energy UK

Energy UK is the trade association for the energy industry with over 100 members - from established FTSE 100 companies right through to new, growing suppliers, generators and service providers across energy, transport, heat and technology.

Our members deliver nearly 80% of the UK's power generation and over 95% of the energy supply for 28 million UK homes as well as businesses.

The sector invests £13bn annually and delivers nearly £30bn in gross value - on top of the nearly £100bn in economic activity through its supply chain and interaction with other sectors. The energy industry is key to delivering growth and plans to invest £100bn this decade in new energy sources.

The energy sector supports 700,000 jobs in every corner of the country. Energy UK plays a key role in ensuring we attract and retain a diverse workforce. In addition to our Young Energy Professionals Forum, which has over 2,000 members representing over 350 organisations, we are a founding member of TIDE, an industry-wide task-force to tackle Inclusion and Diversity across energy.

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Consultation overview

In January 2024, the Government published the consultation [Designing a policy framework to enable investment in long duration electricity storage](#), which identifies long-duration energy storage (LDES) as a potential building block of the future system which requires a route to market.

It proposes a Cap and Floor scheme with streams for established and less mature technologies:

- i) Established technologies: Technology Readiness Level (TRL) of 9, supply duration of at least 6 hours at a minimum capacity of 100MW.
- ii) Less established technologies: TRL of 8, supply duration of at least 6 hours at a minimum capacity of 50MW.

The proposals explain the potential role of LDES in the future system as follows:

- LDES is expected to play a similar role as hydrogen-to-power and gas CCUS.
- Whilst hydrogen-to-power and gas CCUS are anticipated to have lower base costs, uncertainties mean it is prudent to plan for scenarios with lower levels of deployment. These scenarios would require additional renewable generation capacity but, to avoid these higher investment costs, LDES could be deployed.
- The modelling is sensitive to capital costs but in scenarios with low or medium capital costs, LDES could save between £30-£50bn by 2050.

How much LDES could be needed?

Given the independencies, DESNZ has set out a range rather than a target for a additional 3GW - 12GW by 2035 (and 20GW by 2050) with a 3GW deployment viewed as 'low regrets.'

LCP Delta and Regen analysis

Alongside this, DESNZ have published [analysis](#)¹ that provides an independent assessment of the role of a range of long-duration energy storage (LDES) technologies, at different scales, in delivering the flexibility needed for the electricity system. The key finding (updated by DESNZ) is that by 2035, with 50GW offshore wind on the system, supply could exceed demand 65 percent of the time. This highlights the value that LDES could play in maintaining value for surplus output.

The modelling suggests that technologies with the following characteristics could be more useful:

- i) Asset with longer durations of stored capacity.
- ii) Assets with high charging efficiency.
- iii) Assets located outside constrained locations.

Related publications

- Call for Evidence (CfE) on [Facilitating the deployment of large-scale long duration energy storage](#), BEIS (2021)
- Energy UK response to the CfE can be found [here](#)
- [Analysis on the Benefits of long duration energy storage](#), Afry, (2021)

Summary of Energy UK's response

Energy UK thanks DESNZ for their work here and for the opportunity to respond to this consultation. Our key points can be summarised as follows:

1. Support implementation without delay: Energy UK agrees with the rationale for this scheme and the need for urgency (echoing the National Infrastructure Commission's [call for 'Pace over Perfection'](#)). The previous CfE set out the difficulties with financing LDES - high capital costs, uncertain revenues, long project lifetimes, and long construction lead times. Given this, most members support the proposed intervention. Most support Stream 1 being implemented without delay (and/ or shovel-ready projects being fast-tracked) with Stream 2 developed further. We also support further industry input via a technical working group and recommend that the cost of *inaction* (if sufficient low carbon flexibility is not online by the early 2030s) is considered along with the costs of the scheme.
2. Clarity. Members agreed that the current framing lacks clarity on the specific gaps the scheme is targeting and the projects that should be prioritised as a result. More clarity would support better projects and ensure that projects provide sufficient additionality. As the modelling highlights the longer supply gaps that the future system will face, most members would support either a higher minimum duration threshold (for example, 8 hours or longer) or the use of internal targets / assessment criteria to ensure an appropriate range of durations.
3. Market distortion – although essential to get new technologies in place, we acknowledge that any bespoke support can distort markets. Whilst we support the intervention, it should be designed to mitigate this risk. Our key recommendation here is to restrict financing to projects that have a strong benefit, provide additionality, and would otherwise lack a route to market

¹ [Long duration electricity storage: scenario deployment analysis](https://www.gov.uk/government/publications/long-duration-electricity-storage-scenario-deployment-analysis), LCP Delta (Jan 2024), <https://www.gov.uk/government/publications/long-duration-electricity-storage-scenario-deployment-analysis>

(including a clear justification that the current/ reformed CM would be insufficient). Some members would also support restrictions on the way that supported assets can compete against unsupported assets in shorter-duration markets.

4. Supporting emerging technologies – we support the approach for a second stream for less mature technologies but note that this will not provide a sufficient route to market for emerging technologies. We urge the Government to extend the successful [LODES](#) innovation funding programme and work with the UK Infrastructure Bank/ others to ensure a clear route for promising projects/ technologies to go from demonstrator to readiness for this scheme.
5. Ensuring that assets support the system in an emergency: The proposal would ensure that relevant assets get built at minimal cost to the consumer. It is an approach that has been successful for interconnectors and we support the aim to minimise cost for end consumers. However, as noted above, this comes with a risk to competition. Whilst many members supported provider access to all relevant markets to help ensure that assets can operate at/ above the floor in the short-term, (and share profits with the consumer as markets expand and deepen), other members felt that this needed to be balanced against the risk to competition.

We also recognise a potential tension between supporting assets to be built at minimal cost to the consumer and ensuring that assets respond to future 'security of supply' events'. Future market signals may not be sufficient here (assets may be able to generate higher returns by stacking revenues across multiple, frequent lower-profit markets). An approach could be to require assets to be available if required via a CM agreement (note - not all members would support this) or other means. Members noted that this tension between infrastructure and how they operate needs to be informed by a system-wide flexibility and storage strategy.

6. Merchant operation: As the energy bill payers may be required to make-up any revenue shortfall, the capacity that this scheme can support will be limited to avoid risk to consumers. An option for extending the reach of the programme would be to allow projects to terminate their contracts early and operate on a merchant basis. Whilst a 'safety-net' may provide comfort to investors in the early years of operation, markets/ future market visibility could be sufficient by the early 2030s and a 'floor' no longer required. Allowing developers to exit early (with an appropriate fee and having repaid any support) could free up headroom in the scheme to get more projects built.

Questions

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

The following policy objectives have been identified for the proposal:

- *Policy Alignment*
- *Reduce System Costs*
- *Enable Investment (through reducing uncertainty in revenue projections)*
- *System Benefits (incentivised to respond to market signals and act to maximise system benefits).*
- *Delivery (deliver projects in a timeframe that will provide the most benefit to the system)*

We agree that the objectives were broadly right but that they would benefit from greater clarity and SMART (Specific, Measurable, Achievable, Relevant, and Time-Bound) metrics to indicate 'what good looks like' for each objective. Developers will shape projects to these objectives, so the objectives and how they are interpreted will be important. For example, we recommend a focus on 'best value' rather than 'least cost' as 'least cost may bring a short-term perspective rather than supporting Net Zero commitments and a fair transition. Similarly, the 'enabling investment' criteria should specify enabling investment in low-carbon projects.

We would support the following changes to promote better projects:

- A tighter list with clear metrics
- For objectives to be ranked
- For a common understanding of future system needs as well as the counterfactual scenario (with no cap and floor)

It would also be useful to state what purpose the scheme is *not* looking to fill. The design relies on assets to optimise revenues across different markets to reduce the requirement for consumer support. This suggests that assets will be cycling frequently and operating across short and medium-duration flexibility markets – below multi-week duration (as well as for congestion, ancillary needs etc).

There will therefore need to be additional support (such as a low-cycling strategic reserve) to ensure that sufficient reserve capacity is available to support longer supply gaps such as wind droughts and inter-seasonal shortfalls.

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

As noted above we would welcome a more explicit statement of what projects (assets and operation) the scheme will support and what it will be less suited to.

- Valuing storage's charge as well as discharge function: The LCP Delta analysis (updated by DESNZ) estimates that supply could exceed demand around 65% of the time by 2035. It highlights the benefit LDES could have in supporting intermittent renewables and ensuring that output retains value. Members felt that the current framing focuses more narrowly on supply gaps/ providing support if there is a lower deployment of CCUS/ hydrogen-to-power. A stronger focus on LDES's potential to absorb surplus supply would prioritise higher capacity and longer duration projects over shorter duration, smaller capacity projects.
- Minimising market distortion: Whilst all members agree that bespoke support is essential for getting the transition's building blocks in place, efforts should be made to reduce distortion via an equivalency of treatment and maintenance of competitive environment between assets with cap and floor support and those without. This includes existing LDES assets, any excluded technologies (potentially lithium-ion) as well as assets operating in short-duration flexibility markets. This objective should sit across all bespoke support schemes and should include requirements on monitoring and enforcement to ensure the effectiveness of the scheme can be continually assessed and actions taken when needed.
- Value for money of the investment. This should seek to understand if the investment/ underwriting will deliver value compared to alternative options – the opportunity cost. The benefit that an LDES asset can provide will depend on the proportion of intermittent renewables and competition with assets delivering similar services. That will need to take into account construction time as system benefits will not commence until then.
- Diversity (Stream 2 only): whilst we agree that the priority should be to ensure that established technology can be financed and new capacity on the system from the early 2030s, we would support a portfolio approach to technologies with support for emerging technologies to scale-up, mature and compete. The LCP Delta report into technology readiness levels (TRL) suggests that pumped hydro would be the only technology currently eligible for Stream 1 funding with liquid air storage, flow batteries and hydrogen electrolysis eligible for Stream 2. Compressed air, hydro-pneumatic, gravitational, high-density pumped hydro, iron-air and copper-zinc batteries are currently rated as between TRL 4-7 – below the proposed minimum threshold of TRL 8 for Stream 2 funding. If a lower minimum TRL is not suited to this scheme, we urge the Government to work to ensure end-to-end support for emerging technology in this area – from extending funding to the well-regarded [LODES](#) storage innovation funding programme to working with the UK Infrastructure Bank to support technologies to from demonstrators to TRL 8.

- v) Energy security - As outlined in '[Powering Up Britain](#),' the Government is working to enhance the UK's energy security and independence over the long term in response to the global energy crisis triggered by Russia's invasion of Ukraine. As home-grown, green technologies that will help provide the system flexibility required to integrate large volumes of variable renewables, LDES projects are uniquely placed to deliver greater energy security.

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?

As above, members would support a narrower approach that is more clearly targeted at future system needs that without this support could be left under-supported.

The LCP modelling illustrates how a high-wind electricity system, such as GB, is expected to have larger tails of longer-duration excess/shortfall events (relative to a high solar system). It suggests that *'in 2035 renewable and nuclear output will exceed demand continuously for periods that last up to 100 hours'* and that *'of GB's total energy shortfalls/excess in 2035, over 50% of TWhs occur in shortfall/excess events lasting more than 24 hours, and over 25% in periods lasting more than 48 hours'*.

This suggests that the focus should be on technologies able to support the multi-day/weekly variation of wind patterns as opposed to a wider intraday to weekly focus.

Without greater clarity here, there is a risk that developers will focus on smaller capacity and shorter duration technologies where eligible (as with a lower capital cost they have a lower risk portfolio).

Whilst the LCP study is clear that LDES technologies of all types can bring benefits to the system in the right circumstances, it states that longer durations will have larger benefits. These technologies are also more capex-heavy and less likely to come forward without this scheme ('additionality'). The priority then should be to ensure that sufficient quantities of longer duration come forward.

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.

Yes – we support a type of cap and floor as appropriate (where it can be demonstrated via independent audit that the CM is not sufficient) but note that it would need to be amended to reduce the risk to consumers from potential cost overruns for projects of this scale and complexity.

(Two members, whilst agreeing that a cap and floor is the best of the options considered by the Government, felt that alternative would be preferable. A strikeprice plus gainshare mechanism would be preferred by one member. The other member felt that the construction of high-capex, locationally specific LDES projects (as PHS and salt cavern storage) could be funded at lower overall cost via a RAB financing approach. The operation of these assets would then be managed separately (with some stores responding to market signals and others acting as long-term reserves).

We agree with the rationale set out in the proposal – that LDES technologies are likely to deliver benefits including strong cost savings but without a way to reduce the risk to investors now they are unlikely to be built in time. We note that the 2.8GW currently deployed on the GB energy system comes from four plants originally commissioned between 1963 and 1984 and that no new assets have been constructed in approximately 40 years since the sector was privatised.

We therefore support the cap and floor as the best means of getting the necessary infrastructure built. By providing long-term revenue certainty, the cap and floor scheme would support investment and reduce the overall risk and cost of deployment.

Adaptations from the interconnector scheme

We note that specific adaptations are required to the existing scheme to maximise system and consumer benefits to:

- i) shorten the assessment framework to hasten deployment
- ii) ensure that supported assets maintain their exposure to market signals (and so preserve their incentive to dispatch energy and services in a way that enables the system to operate more flexibly and efficiently).
- iii) shield consumers from the impact of potential cost overruns for projects by clearly allocating these will be dealt with at the design stage. This needs to fairly allocate risk to protect both consumers and investors given the scale and complexity of the potential

Whilst current markets are limited, we are confident that deeper markets for energy arbitrage, system balancing, ancillary services, constraints will mitigate any impact on billpayers (just as a cap and floor mechanism has achieved with interconnectors).

We encourage DESNZ, Ofgem and the NESO to provide longer-term clarity on future markets. This will support participants to bring forward relevant projects.

The Capacity Mechanism

Energy UK supports further reforms to the Capacity Market (CM) to support more projects in this area and note member support for the recent CM proposals ([response here](#)) including the long stop date.

We note the following points here:

- If the CM could allow for sufficient construction lead times (3 years 8-months is insufficient) it could bring forward some LDES projects.
- The high clearing prices in both the 2023 and 2024 CM auctions (£63/kW and £65/ kW) could be sufficient to bring forward some LDES.

Whilst there is support for the proposed intervention, it should be restricted to eligible projects with a clear justification that they would not be viable without it. A reformed Capacity Market should be the primary route of support for capital assets (where feasible), as this provides greater scope for competition.

Whilst the technical objective is to not exceed a 3-hour Loss of Load expectation (LOLE), the current CM design essentially frames 'security of supply' as a problem of the 2-hour weekday peak (5-7pm). Recent issues of system tightness during summer heatwaves (2022, 2023) highlight the need to reconsider the 'problem'.

By 2030s, with 50GW of offshore wind on the system, the risk will be higher from prolonged periods of low wind rather than short peaks. If, via [REMA](#) (the Government's power market reform programme), the CM is reframed to better fit emerging system issues, it should be better suited for financing flexible low-carbon assets (this may require other changes too such as rewarding projects for flexibility rather than just capacity).

Note: whilst we support CM reforms to bring forward more LDES, we do not think even a reformed CM will be suitable to sufficiently derisk the private investment required for all large-scale, high-capex flexible assets with a long lifetime.

5. Do you agree with our approach to not set an overall scheme capacity? P21

There was some support for the rationale not to set an overall scheme capacity given the variables (capex costs, speed of the transition, deployment of connected technologies such as CCUS and hydrogen to power), however, most members felt that the market needed a clear steer on the capacities that could be supported via the scheme

Given this, we do not agree with not setting an overall scheme capacity. We would support at least a minimum capacity target for the scheme. Considering the very long lead times, particularly for PSH

and CAES, this would provide confidence for developers who are progressing projects but are unlikely to meet the pre-qualification criteria for the first application window.

An approach here could be via set 'ambitions' expressed as capacity ranges and split by different durations. For example, if 6-hours were retained as the minimum threshold:

- between 'x' GW to 'y' GW capacity of 6-10hr duration technologies by 2035/2050
- between 'x' GW to 'y' GW capacity of 10-16hr duration technologies by 2035/2050
- between 'x' GW to 'y' GW capacity of 16-24hr duration technologies by 2035/2050
- between 'x' GW to 'y' GW capacity of 24hr+ duration technologies by 2035/2050

Note: if system needs are viewed as too uncertain to do this, a similar objective could be met by using assessment criteria to ensure an appropriate range of durations. These 'ambitions' could be updated as appropriate based on NESO modelling to ensure a clear signal on the evolving understanding of system need. There also could be value in DESNZ setting an overall ambition for LDES linked to an updated system-wide storage and flexibility strategy.

If a target or ambition is not set at the start of the scheme, this should be reviewed as the scheme matures and a target developed in future years to i) avoid any over/ under capacity as a means of avoiding over or under capacity ii) provide more clarity to the market if the pipeline is not growing at the desired level (or if CCUS and hydrogen to power are slower to deploy than expected).

Clear visibility to the market on both the emerging need and the pipeline will be important here

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

i) Potential impact on other storage technologies

We agree that the administrative allocation of projects is the best way to monitor and manage this risk. The document states that there are around 35GW of conventional lithium-ion batteries in the development pipeline versus 3GW of PHS. Given this, we think there would be limited impact on batteries providing relevant markets continue to deepen and current barriers (for example, connection timeframes and 'skip rates' in the Balancing Mechanism) continue to reduce. The impact on existing LDES is less clear.

However, this scheme could make it more difficult to finance longer lithium-ion batteries if these are excluded as they will face higher costs but will be competing subsidised assets. Similarly, the support and the minimum TRL threshold of 8 could make it harder for emerging technologies to get a foothold unless there is comprehensive support elsewhere to support them from demonstrator project to TRL 8.

ii) Distorting the market for other net-zero technologies

Any bespoke support can create market distortion but as with support for CCUS, hydrogen to power, hydrogen storage and nuclear, we support this as necessary to get the building blocks of the transition in place.

Some members here highlight this brings LDES technology in line with other technologies that already have bespoke funding arrangements and note that the design of the cap and floor (specifically how the cap and the floor are set) will incentivise projects to compete in other markets as they (normally) would without the support. Other members, however, have concerns that the support could impact unsupported projects in shorter-duration markets.

Members agree that this needs to be carefully monitored along with further work on how a level playing field could be created for technologies to compete against each other going forward.

iii) Increasing overall system costs

We do not think this is likely – without this support, LDES would be unlikely to come forward in sufficient quantities (no PHS have been built since the energy sector was privatised 40 years ago) and so the counterfactual would be higher, not lower costs.

iv) Over procuring LDES

Again, we think this is unlikely. LDES assets have long lead times and are hard to finance. A more likely risk is a shortfall in the short to medium-term. Along with the proposed allocation process, it should be straight to monitor the pipeline to mitigate any risk of over-procurement.

v) Over-reliance on LDES

The consultation document sets out this risk as over-reliance on one technology. We support a strong focus on using Stream 2 and further support to bring forward a diversity of LDES technologies able to compete in future markets. We note that clarity will be needed on the parameters of how/when a technology transitions from 'novel' Stream 2 to 'mature' Stream 1 to avoid any focussed funding in perpetuity.

vi) Stranded assets

As with the other bespoke support systems, there is a risk of stranded assets. A poor outcome for the consumer however would be for new high-capex LDES assets to be built and for existing LDES assets to close because they cannot compete with a more favourable support mechanism.

Other risks

As well as the risk of inaction/ delay, the main risk identified was the risk that assets funded by the scheme are not available to support the system when required since they may be able to earn better revenues by working across multiple, more frequent markets. An analogy was made here to 'huff and puff' gas storage where the costs of storing the gas are recovered by intraday cycling to capture the economic rent available rather than maintaining the store in case of a supply emergency.

As we cannot judge whether future market signals will be sufficient, it was suggested that this risk could be managed by requiring supported assets to retain a contract with the CM to ensure the asset is available when required. However, there was not a consensus here (and it was noted that CM penalties max out after 4 hours). We would welcome more consideration on how to mitigate this risk.

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

The Energy Act 2023 has recently defined electricity storage in primary legislation as: ““Stored energy” means energy that—

(a) was converted from electricity, and

(b) is stored for the purpose of its future reconversion into electricity.”

Yes. Energy UK agrees that only those technologies that meet the electricity storage definition should be eligible for an LDES scheme. The potential range of technologies is already diverse and a common definition should support a more streamlined approach to assessment to avoid delays.

We acknowledge, however, that this will exclude technologies that will be useful in the transition (including geothermal and thermal).

Alongside this, we urge the Government to ensure that other viable mature and less mature technology classes have a viable and appropriate route to market. We do not think it is necessary (or appropriate given the funding route) for this mechanism to have to do everything. A reformed CM, a more joined-up approach to less mature technologies, and potentially further bespoke mechanisms could provide a route here.

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?

Yes. Given the financing route and potential risk to consumers, we agree that only *projects* with a strong benefits case that cannot be adequately supported via the CM/ elsewhere should be supported by this scheme.

We think that the CM is generally be more suited to technologies such as lithium-ion / other technologies with lower capex requirement since this would avoid the revenue cap and lengthy assessment process. We note that 4-hour batteries were successful in the 2024 CM auction.

Whilst most members felt that the modelling provided a sufficient basis to support a higher minimum duration threshold for *projects* (the modelling showed that in 2035, over 50% of TWhs are projected to occur in shortfall/excess events lasting more than 24 hours), they were less comfortable with excluding a *technology*.

We recommend that DESNZ provides early clarity on what revenues can be stacked (for example, CM but not hydrogen DPA etc).

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

No. Most (but not all) members felt that a minimum duration of 6 hours would be too short to address the future system need and would support 8 hr or 10 hours as an alternative minimum threshold

Where there was some support for the 6-hour threshold, it was on the basis that it could increase the diversity of projects or because (given the limited geographical opportunities for storage of this scale), a higher threshold could incentivise developers to submit the same projects with a lower capacity to meet the delivery duration.

We note that the LCP Delta and Regen modelling showed that in 2035, over 50% of TWhs are projected to occur in shortfall/excess events lasting more than 24 hours and we would support further clarity from DESZ, Ofgem and the NESO on how very long duration storage (+24 hours) will be procured.

Whilst hydrogen will be essential for inter-seasonal storage and longer gaps, members felt that the low round-trip efficiency meant that it would be unlikely to be the most cost-effective approach for medium-duration supply gaps. Similarly, whilst lithium-ion batteries working in tandem may be able to play a role, this may not be sufficient or the most cost-effective route.

The table below from this [Journal of Energy Storage, Volume 60](#), April 2023 compares American definitions of long-duration storage. Most states defined 'long duration' as 10 hours or more.

Table 2. Long duration definition summary.

Organization	Duration
DOE storage shot	10+ h
CPUC IRP	8–12 h
CEC	10+ h
ARPA-E days program	10–100 h
LDES council	8–24h
PJM	4,6,8,10h

The table below from the LCP modelling lists the approximate duration for different LDES technologies. (Note - the durations for some of the technologies don't seem accurate. CAES, for example, can run for considerably longer than 8 hours if stored in a salt cavern/ deleted oil field rather than a tank).

Table 1 – Duration and cycle efficiency characteristics for different LDES technologies, obtained from LDES developers

Storage technology	Storage duration ³³	Efficiency (%)
Pumped hydro storage	4 hours to multiday	78 - 85
Compressed air energy storage	4 - 8 hours	55 - 60
Liquid air energy storage	12 - 16 hours	55
Flow batteries	4 - 20 hours	76 - 96

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

No - there was no support for a minimum efficiency. Members agreed that the cost-benefit analysis should assess the project in the round to determine the value. A low cost per KWh could outweigh a low efficiency to generate strong benefits.

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.

Yes – Energy UK supports the approach of separate streams for mature and less mature technologies and TRL levels was generally felt to be as sensible approach to differentiate the streams.

However, DESNZ needs to establish a clear definition for LDES TRLs and should make clear at what stage in the process technologies need to achieve the stated TRL (an asset’s TRL might improve over the period between the application and the final contract agreement).

As highlighted earlier, we view this support mechanism as *one* rather than the only route to supporting longer-duration energy storage. Greater clarity over the objectives would support developers to understand what projects will be prioritised for funding and which aspects of the future LDES need will be supported by other means.

Whilst we strongly support a portfolio approach to LDES/ the transition, we accept that this scheme may not be appropriate for early-stage technologies. We urge the Government to ensure that sufficient end-to-end support is available to enable emerging technologies move from demonstration to TRL 8.

As noted earlier, clarity is needed on projects/ technologies migrate from Stream 2 to Stream 1 should be part of this response.

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

We support the capacity threshold for Stream 1 but most (though not all) members would support a lower minimum capacity threshold for Stream 2 so that it is better able to support emerging technologies.

Members working in this space suggests that a 50MW minimum threshold is too high to do this:

- A 50MW hurdle is likely to be a £100m CAPEX project. To obtain both debt and equity funding for this scale of project, with an emerging technology at TRL8 would be challenging. It is more likely that an emerging technology would need to demonstrate three to five TRL8 projects in the 10MW-20MW (£20m to £40m CAPEX) scale, enabled by government support, before a 50MW project would be financeable.
- A £100m project would need to be both bankable and insurable, a challenge at TRL8 for an emerging solution.
- By building 3 smaller projects in parallel, rather than one 50MW project, new technology providers will be able to capture more learnings and thus progress to TRL9 more quickly, accelerating the pathway to commercialisation and ultimately to a net-zero energy system.

We would welcome more consideration of how Stream 2 could better support emerging technologies.

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

As a general point, Energy UK agrees that wider system benefits should be considered. However, we have concerns about the proposed list which includes:

- *Ancillary services*
- *Location-based benefits*
- *System costs*
- *Consumer benefits*
- *Local economy benefits*
- *Constraint management*
- *Energy security.*

We think the focus should be more clearly defined or there is a risk of supporting projects that can 'tick off' these benefits but which may not deliver sufficiently on underserved future system needs.

Whilst, in theory, a project could provide multiple services, in practice, it will only do so if it can compete effectively in future markets. It is not clear that the current list will prioritise projects that will be best suited to deliver on underserved parts of the future market.

The current list includes significant overlaps which need to be resolved. For example, it's not clear that there is much difference between system costs and consumer benefits - one option would be to split into system benefits (including constraints, location, ancillary services) and 'managing risks to consumers' (stranded or redundant assets, risk of asset operating frequently under the floor).

Most members did not agree that local economy benefits should be used to differentiate applications (though the potential for local employment was recognised as a potential side benefit). Some members though would support these benefits to be included as a contributor to a 'value for money' assessment of a project that is highlighted under any CBA undertaken to differentiate between applications.

Under systems benefits, 'energy independence' was suggested.

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

Most members agree that the approach used for interconnectors could be a useful starting point.

However, we anticipate that substantial change would be required to apply it to LDES projects. A key factor here will be to establish who pays for cost and the Interest During Construction, the implications of time overruns, and to what degree these could be included in the Post Construction Review that informs the project's final cap and floor level.

Adjustments should also include truncating the existing process and improving transparency.

In the current interconnector process, it can take up to two years for projects to receive cap and floor approval. This timeframe could be reduced by, for example, combining the IPA and Final Project Assessment (FPA) stages or running them concurrently where possible.

Greater transparency (via the cost-benefit analysis) on why projects have been funded and the benefits that these projects will deliver will be important for building and retaining support for the proposed intervention.

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?

A benefit that felt under-covered in the proposal is the ability of LDES to absorb surplus demand (and therefore support a higher volume of low-cost intermittent renewables onto the grid). This had a higher prominence in the LCP modelling (updated by DESNZ) which highlighted that by 2035, with 50GW of offshore wind on the grid, supply could exceed demand 65% of the time.

The proposal feels more focussed on the potential benefit that LDES could supply if CCUS and hydrogen to power take longer to deploy (covering supply gaps and reducing the additional generation required).

Carbon benefits are not included in the criteria. LDES projects will support the integration of intermittent renewables, reduce the need for renewable curtailment, and displacing carbon intensive gas-fired generation.

Some members felt that benefits to the distribution networks should be included (40 percent of generation is distribution-connected and there is a growing need for flexibility to manage flows and support consumer uptake of low-carbon technologies). Other members however, felt that a cap and floor was less suited to smaller distribution-connected projects.

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

Yes. Energy UK agrees with the principle of allowing recovery of debt via the floor and equity via the cap.

The consultation outlines this as follows:

- *The floor level should be set such that a project can recover its debt-related costs to provide certainty to investors that debts will be serviced.*
- *The cap should be set at a level that incentivises the asset to continue operating to maximise the available storage in the future energy system and to gain a fair return on its equity investment, whilst protecting consumers from excessive cost*

Our view here is that the scheme's purpose is to reduce investment risk to a level that encourages suitable projects to be financed. For this, the cap and floor levels must appropriately reflect the risks faced by LDES technologies (such as PSH) rather than those for interconnectors.

Investors will generally wish to satisfy themselves that the expected rate of return is above their hurdle rate), and that the risk of deviation is sufficiently small. Setting the floor at a level that enables debt to be serviced will help achieve this, but may be insufficient for some projects to be built.

As the cost of capital is the key cost in infrastructure project, an appropriate floor on returns will support developers to access investment at a lower cost bringing overall project costs down. The cap should allow a project rate of return significantly above the investor's hurdle rate so that upside risks balance downside risks. A cap set at the cost of equity is likely to be below the hurdle rate, as hurdle rates are above WACC. Given market volatility and unpredictability, developers/investors are likely to have low confidence that the returns allowed up to the cap across the contract period will be realised, therefore, the cap will need to allow a rate of return significantly above the WACC and the hurdle rate. The recovery of equity via the cap will incentivise developers to optimise the asset to make returns. (We note however that other factors will influence this – for example, the revenue sharing mechanism above the cap. If this allows the developer to retain more of this revenue then a lower floor may be acceptable).

As an administrative process is proposed (which we support), we would expect the calculation of the floor to come from the bespoke analysis of the project's CBA and therefore able to incorporate wider factors than just pure debt. Given the range of potential projects and situations, this approach seems better suited than one aiming to create a competitive signal.

Investments are normally funded by a mix of debt and equity (with the gearing ratio being measure of this split), but it is unclear if and how different approaches to financing will be accommodated. The Department would need to consider how a 'floor' could be constructed for projects where no debt is procured (proxy cost of debt?)

Any comparison on 'gearing' (ratio of debt-to-equity) should be based on typical/ notional gearing rather than actual gearing as the actual ratio for investments will normally depend on the developer/ risk appetite/ project characteristics (e.g. lifetime, TRL etc). Whether a notional gearing should be

applied or not, and how different approaches should or should not be accommodated through the mechanism should be discussed further in a technical working group. There was also some concern that using project-specific debt ratios to set the floor could cause distortions, such as types of financing, technology and duration types so we would welcome further consider how to avoid distortions in the market if each project has its own bespoke floor.

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

Given the wide diversity of projects that could be financed through this scheme, optionality on how debt and equity are assessed is important to account for the different structuring of projects and whether actual or notional levels are used.

The approach adopted for cost treatment and reconciliation in the Interconnector C&F regime is broadly suitable to be adopted for LDES projects. Assessment should apply to most cost elements, including (but not limited to) the following:

- i) fixed and variable controllable Opex and non-controllable Opex, to ensure they have been efficiently incurred (with any resulting reconciliation adjustments applied to cap and floor levels in subsequent periods).
- ii) development costs and Capex included as part of the building blocks in the calculation of the cap and floor base alongside other cost elements.

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?

This question is complex and, given both the diversity of potential projects/ technologies, should be informed by further industry discussion via an industry working group.

This work should be informed by a clear principle - that all eligible costs should be built into the assessment and cap and floor levels (including interest incurred during construction). It should also clarify what types of cost and time overruns are acceptable.

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

Whilst we could support a high-level plan at the application stage, we would not support a more formal or restrictive approach (particularly where this could increase risk for developers).

The opportunity to make greater returns means that developers would already be incentivised to exceed the floor and optimise their charging/discharging operations in various markets to obtain a better return on their equity investment (and therefore further requirements here would be unhelpful and could increase investor risk).

Markets here are subject to change and the successful optimisation of storage/ flexible assets requires asset holders to be agile and switch between markets to stack revenues. Any approach that restricts this agility will reduce revenues to the potential detriment of both the efficiency of the assets' operation and consumers.

We further note that optimising assets will require open and accessible markets and clear and forecastable revenues. This is not always possible in current markets and is the second highest risk for developers after the cost of capital.

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?

Most (but not all) members agreed that using annual gross margin is a suitable approach to setting cap and floor thresholds.

The consultation clarifies that DESNZ considers the gross margin to be the difference between revenues earned from dispatching energy and services of the asset and the costs of buying the energy to charge the asset. This avoids the risk that volatile charging costs could have for the scheme.

One member disagreed on the basis that the annual gross margin would exclude costs such as staffing or maintenance. This member instead recommends a project-specific approach to setting a strike price, based on costs and some element of return, with a gainshare mechanism operating on all revenues above this level.

A further member suggested that EBITDA could be used instead.

Co-location – it is important that the design does not create barriers for LDES co-locating with renewables. How returns are calculated may need to consider the trading arrangements of co-located assets to avoid creating barriers to co-location.

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

The proposals here are to:

- *Introduce a longer period (multi-year) to review gross margin revenues, allowing the asset to transfer revenues between years to smooth out periods above/below cap. As noted above, the interconnector cap and floor uses 5-year review periods.*
- *Set soft-caps to return gross margin to asset on sliding scale, where returns are gradually increased to the consumer rather than a cliff-edge point where all returns are removed from the asset operator.*
- *Set availability or performance requirements that could penalise the operator if agreed performance expectations are not met.*

Energy UK supports a 'soft' cap involving a split of revenues between the operator and the counterparty/ consumers at a specified rate to help mitigate dispatch distortions at the cap.

It was noted that whilst a soft cap does not in and of itself completely remove the distortion, the softer the cap, the greater reduction in the distortion risk.

We do not support a 'hard' cap as this could result in perverse outcomes once the cap has been reached whereby the operator cannot receive any additional revenue so ceases to operate for the remainder of that cap period (to the detriment of the wider energy system).

Some felt that a soft or tapered cap along with availability or performance requirements would be sufficient to address the perceived risk. Others however disagreed suggesting that DESNZ and the industry needed time to work through what availability and performance targets might work best.

Some members suggest that allowing developers to terminate their contracts early (with an appropriate fee and having repaid any support) to operate on a merchant basis would support this objective (whilst other members disagreed).

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

DESNZ proposals here are to:

- *Set the floor at the cost of debt, the return on equity is only achieved once the asset is generating returns above the floor level*
- *Introduce a longer period (potentially multi-year) to review gross margin, which equally allow assets to transfer revenues between years to smooth out periods above/below cap. The interconnector cap and floor uses a 5-year review period.*
- *Set availability or performance requirements that could withhold floor payments or deduct from other periods above the floor if agreed performance expectations are not met*

Multi-year reviews: We could support a multiyear reconciliation, providing that this includes an option to reconcile the floor on a 1-year basis to service debt payments if revenue falls below the floor and uncertain revenues need to be supplemented.

We note that the key differences between how interconnectors and long-duration storage assets operate are fluctuating charging costs and more variable revenues. Any approach here needs to avoid the risk of high charging costs over a period leading to cashflow issues which could push up the cost of the debt.

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

Please see our response above.

Stream 2 will need to work for smaller operators if it is to be successful in encouraging emerging technologies. Multiyear reviews may be less suited here.

In general, we recommend that further discussion on how to structure incentives are had via an industry technical working group (as it merits more consideration than is possible in this response).

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

The proposal sets out the risk for asset operators, with the help of third parties, to “game” the cap and floor regime (via agreements to exploit the cap and floor scheme for financial gain including selling electricity at below the market rate to a downstream supplier, and having revenue topped up by the floor payments). Similar gaming could be applied to the cap to avoid returning revenue that is in breach of the threshold or through tolling agreements with associated trading arms.

We support DESNZ in seeking to identify and mitigate potential gaming risks. This would be a useful focus for an industry working group since these risks represent a risk to the whole scheme if they emerge and cannot be managed.

On the risk of agreements with third parties or umbrella companies, our view here is that there is already sufficient legislation in this space to prevent misuse – from competition law, requirements around financial reporting REMIT, anti-competitive behaviour and market manipulation.

Of the proposed mitigations - we do not support the option of banning vertically integrated offtake as it would reduce the potential business models that could be used. Suppliers can struggle to hedge especially where they have no backup generation and this option would further impact the acknowledged issue of insufficient market liquidity. Whilst there is a risk in theory, there is not sufficient evidence to warrant such a prescriptive rule.

We also do not support the suggestion for a deemed revenue index. This would be extremely complex (if possible – given the number of markets that storage assets can play across) to produce and the risk is not well-evidenced enough to justify such a complex intervention. Assets would also be incentivised to shadow the index which would negate the reasons why the cap and floor was introduced (to manage prolonged periods of low renewable output).

Our preferred option here would be a transparency option for example, an approach similar to Ofgem’s Transmission Constraint Licence Condition (TCLC) in which a license condition is used to prohibit certain behaviours in advance. Providers could then be required to provide data on the transactions/ revenues for each business unit for spot check audits.

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

Please see our answer above.

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

Yes

We agree that the scheme should be allocated administratively as this will allow greater license to weigh up complex decisions on which projects could deliver the greater value. It will also help Government to better understand the kinds of projects coming through the system and costs/

revenues. This could support the scheme to move towards a more competitive allocation process as it matures.

The proposal currently includes an objective of delivering the most flexibility at the 'least cost'. We recommend this is replaced with 'best value' as 'least cost' could prioritise lower-capex, shorter duration technologies which may not be sufficient to provide coverage over longer supply gaps.

Similarly, an emerging technology may have higher capex in the near term but with good potential for cost reduction. The 'lowest cost' criteria would overlook a project in this area in favour of a mature technology with slightly lower current costs but limited future scope for cost reduction.

We would welcome more information on how the administrative process would work and the scope for an industry technical group to support the design of the process.

We recommend a structured approach with scheduled time windows for applications that are clearly signposted in advance. This approach could also be used to target specific niches - locations or capacity. This could support DESNZ to ensure the scheme meets all relevant objectives.

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

This is a complex consideration and should be informed by further discussion with an industry technical working group.

In principle, yes. In practice though this will need to be informed by what investors need here. Given this, we would say that we support the length of the contract being *linked to* but not necessarily based on the project life. A lot here will depend on the duration of the investor appetite.

Some LDES technologies have a 50-year life but investors may not be willing to commit for this duration. We note that the CfD for Hinkley Point C nuclear plant (a much higher capex project) is 40 years so we might expect a LDES agreement to be shorter than this. Where the debt tenure is shorter than the project length, there will need to be a balance between the finance accessed and how this is reflected in the cost-benefit analysis.

Even where an investor is willing to commit to the full lifetime of a long-lived asset, flexibility may still be required in the contract - for example, to have a downward lifetime to cater for emergency refurbishment. Given the complexity of projects in this area and the potential diversity of technologies, we would caution against too much standardisation here.

Q28. Revenue opportunity do you agree that cap and floor recipients should be able to participate in other markets such as the CM

Yes – most members supported this (whilst a minority supported access to the BM and ancillary service but not the CM).

The rationale expressed by those who supported access to all relevant markets was that whilst the cap and floor encourages investment, it does not provide security of revenue beyond the floor.

Future revenues in this area are uncertain and whilst the modelling shows a strong system need, this does not provide sufficient certainty for investors. Given this, most members agreed that assets should be able to participate in the CM and thus commit to being available in a stress-event. We note that this would help address potential issues with liquidity in the CM.

The efficiency of the scheme and benefit to consumers will come from the projects' ability to stack revenues across a range of relevant markets. Those that opposed access to the CM suggested that this constituted 'over support'.

There was less agreement on whether a single-year, a 15-year agreement, or allowing optionality would be more suitable.

More members felt that longer agreements here be more appropriate:

- to build the finance necessary for the project (and by increasing revenue certainty to reduce the risk associated with and the cost of finance).
- A 15-year agreement provides greater certainty that the asset will be operating at the floor so reduces the risk that any support may be required (any if the cap is exceeded that the profit will be shared with bill payers).
- if revenues are uncertain, there is a risk that developers will build a lower-cost, less optimal asset to reduce potential risk. A 15-year agreement could therefore support better projects

A counter-view expressed was that single-year agreements could be useful if the CM is undergoing a period of transition. This would leave projects available to take on a more suitable multiyear contract in a reformed CM that is more focused on longer supply risks. This option however, should not disadvantage LDES assets in comparison to other assets with a CM agreement. A different counter view given is that, since the cap and floor provides revenue certainty at the floor, a further multi year support mechanism providing revenue certainty is not also needed

All members agreed that a clearer view of future products and services was needed from the electricity system operator (NESO) for example, to set out an ambition to develop future ancillary products to charge/ discharge electricity over a set number of hours along with an approximate date.

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

Yes - less mature technologies

For mature technologies, a view expressed here was that if the project has been structured properly it should not need additional finance from the UKIB.

As noted earlier, however, the proposed cap and floor will not support emerging technologies with a TRL of less than 8. We urge the Government to work to ensure that emerging technology in this area can access appropriate support to grow from demonstrator to TRL 8 to be able to access the scheme. As commercial banks will not lead to projects with a TRL of less than 8, we think that the UKIB could be best placed to do this.

Whilst the UKIB currently does not support LDES with a TRL of lower than 8, we note that it was set up with a mission to support projects that may not be eligible for mainstream commercial finance.

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

Some members are supportive of the proposed pre-qualification criteria for Stream 1, whilst other members believe the pre-qualification criteria and process should follow the existing and successful interconnector process. This will allow for planning process to be followed alongside initial project assessment.

The scheme should focus on more advanced projects. It is important that lessons learned from the existing interconnectors are incorporated into the design of the LDES scheme. It is important that the gap between pre-qualification through to contract award is as short as possible, so that developers are not left holding on to permits and land options for an excessive period.

For Stream 2, there should be some flexibility because there are newer technologies that have not been developed at scale in the UK so we would support flexibility to help these projects and support scheme diversity. It is not clear that a geological project will have planning consent in the timeframe than DESNZ is suggesting.

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

As with the interconnector scheme, it will be necessary to ensure that projects can deliver within the required timeframes.

As above, we would support flexibility for Stream 2 to support greater technology diversity within the scheme.

It is also important that the design of the mechanism does not create barriers for LDES co-locating with renewables. Co-location provides several benefits and opportunities for developers and consumers, for example:

- Stable generation output: co-locating technologies with different generation profiles can help smooth the power output of a single site and improve system operability.
- Lower curtailment costs: co-locating renewable generation assets with storage can help relieve constraints during times of high renewable output and therefore, avoid curtailment of output.
- Optimising grid capacity: sharing grid connections between multiple technologies can optimise the use of the network, reducing the need for investment in new infrastructure.
- Adding technologies to existing sites can also accelerate grid connection times compared to standalone projects.
- Efficient use of land: co-locating technologies in a single site can make efficient use of available land, particularly in areas with a high level of public acceptance.

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

This question is not applicable as this is an Association response. Please see individual member responses to this question.

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

Members agreed this question was ambiguous.

If the question is about retaining optionality for single or multiyear reconciliation of revenues, then we support it. As we understand it, the current approach for the interconnector scheme is reconciled over 5 years to smooth out revenues (both floor and cap) but includes flexibility for an annual reconciliation. This could be used if revenues fell below the floor level (to allow developers to top up their floor level and service their annual debt payments without having to wait for the 5-year reconciliation). Without this flexibility, servicing annual debt levels could be difficult and could increase the cost of the finance if payments were missed or delayed due to cashflow issues.

Members would in general support a similar optionality as in the interconnector regime, whereby developers can choose the 5-year reconciliation or the regime variation of 1-year reconciliation

If, however, the question is about reviewing the cap and floor levels (rather than reconciling revenues) then we do not support it. Anything that increases uncertainty here will make the project harder to finance and undermine a key objective to support access to project finance at a lower cost.

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

Yes. Provisions here are standard in large infrastructure schemes via an 'income-adjusting event' approach in which either of the contracting parties can make the case that something qualifies as an event. This is self-limiting (as the case needs to be made and won) but avoids the risk of excluding an event by not listing it in advance.

We recommend a similar approach.

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

We think that contract milestones would be more appropriate than a proving period given the range of potential technologies that the scheme could support.

(The schemes cited in reference to 'proving periods' are all single technology schemes)

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

Yes. As with the approach adopted for offshore wind, we would support a target commissioning *window* rather than a target *date*. For offshore wind, this window is set at 12 months which provides some flexibility and reassurance for the developer.

Given the range of technologies that this scheme could support, there may need to be different commissioning windows/ re-openers/flexibility for different technologies (for example 18 months for pumped hydro to account for the construction risk with the groundworks).

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

An important consideration for members was that this scheme is accessible to different technologies. This will mean that the design and design parameters will be able to be flexible enough to apply to a range of quite different technologies.

Clarity on arrangements when contract expires and if projects can exit early

It is unclear for both this and the existing interconnector scheme what the arrangements are when the contract expires – whether projects are fully merchant.

Similarly, there is interest amongst the membership on whether contracts could be ended early (with an appropriate exit fee) to allow developers to go fully merchant. Projects may be difficult to finance in the short term without a floor given the uncertainty of future revenues. By the 2030s however, future markets will be clearer and the security of the floor may no longer be required. Allowing projects to exit early to operate fully merchant could free up headroom in the scheme for a new project to be financed and built. We would support an appropriate exit and a requirement to repay any support claimed if the floor was used here.

A further parameter that we would strongly urge DESNZ to consider is the ability of LDES to co-locate with renewable generation and other technologies. Co-location provides several benefits including - Stable generation output, efficient land use, optimising grid capacity and lower curtailment costs.

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

In general, members have a preference for Ofgem since Ofgem administers the current interconnector scheme, has the relevant experience and this may avoid delays to the support..

Whilst not an option in the consultation, member preference would be delivery by Ofgem with the LCCC as the counterparty. Whether DESNZ or Ofgem leads here, members would welcome the involvement of LCCC as the counterparty.

We would expect DESNZ to retain broad ownership of the policy direction (including eligible technologies)

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

The consultation does not give the option for an Ofgem lead with a supplier levy financing route. Whilst that would be members preference, it is not listed and there are concerns that if possible it would lead to delays. Delays here could potentially affect investment.

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

Risk – concern about delays

41. Do you believe 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.

There were concerns about whether this route would be sufficiently transparent – whether there would be a breakdown if the funding route was TNUoS.

As above, there was some preference for a supplier levy route with an Ofgem lead (unless it would result in delays in getting the scheme set up).

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.

Having a levy was felt to be more transparent and potentially more suited as storage is classed as a generation technology.

Whilst not an option in the consultation, it would be helpful to understand why a scheme delivered by Ofgem could not have the LCCC as the counterparty. The scheme being operationalised through a private law contract with the LCCC as the counterparty would likely offer greater certainty and therefore attractiveness to investors and lenders compared to TNUoS. TNUoS is also undergoing a major reform process and will be impacted by the outcomes of REMA which creates further uncertainty. Furthermore, the case for using TNUoS for funding a LDES scheme is much less clear than for the existing interconnector scheme.

We, therefore, think there is merit in further exploring the supplier obligation levy route as long as it doesn't add any delay to the delivery of the scheme and the opening of the first application window in Q1 2025. We note, however, that suppliers were less in favour of this route given the additional administration this would involve.