

# Connections Reform

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## Consultation Response Proforma

Your feedback is important to this process. Please take this opportunity to provide any feedback that you may have. To aid your response, each question is linked back to the relevant document for ease of reference.

Please provide your feedback using this Proforma and sending an electronic copy to [box.connectionsreform@nationalenergyso.com](mailto:box.connectionsreform@nationalenergyso.com) by **5pm** on the closing date of **2<sup>nd</sup> December 2024**.

We encourage early submission ahead of the deadline where possible to aid the processing of responses.

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<b>Which category best describes your organisation?</b>	<input type="checkbox"/> Consumer body <input type="checkbox"/> Demand <input type="checkbox"/> Distribution Network Operator <input type="checkbox"/> Generator <input type="checkbox"/> Industry body <input type="checkbox"/> Interconnector <input checked="" type="checkbox"/> Storage <input type="checkbox"/> Supplier <input type="checkbox"/> System Operator <input type="checkbox"/> Transmission Owner <input type="checkbox"/> Virtual Lead Party <input type="checkbox"/> Other

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<p><b>Is this response confidential?</b></p>	<p><input type="checkbox"/> Yes – I do not wish for this response to be shared publicly; however I understand it will be shared with Ofgem</p> <p><input checked="" type="checkbox"/> No – I am happy for my response to be available publicly</p>
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***Hydrostor, a Canadian company investing in Great Britain, is pleased to submit comments to the NESO Connections Reform Consultation. Hydrostor is a technology provider and developer of 8+ hour long duration energy storage (LDES) through our Advanced-Compressed Air Energy Storage (A-CAES) technology. A-CAES provides low-cost, long-duration energy storage that is 100% emission-free and can be flexibly located.***

***Our response is written from an LDES perspective. Hydrostor has opted to provide such feedback as we expect this to be an underrepresented technology in the consultation responses issued to the NESO. Given the critical role that LDES technologies will play in achieving Clean Power 2030 and beyond, this response seeks to ensure that proposals give due attention to emerging technologies such as LDES.***

**Section 1 – Policy**

You can find the relevant information in the **Great Britain's Connections Reform: Overview Document**

<p>1. Do you agree with our intention to align the connections process to Government's Clean Power 2030 Action Plan?</p>
<p>You can find the relevant information in <b>Section 2 - Context</b></p>
<p><b><i>Yes - Hydrostor supports NESO's intentions to align the connections process with the government's Clean Power 2030 Action Plan (CP30) subject to extending the connections pathways horizon to 2035 (CP30 and Beyond), a clear delineation between short duration and long duration storage being incorporated into the process and ensuring there are multiple zones for Long Duration Energy Storage (LDES) across GB. The use of FES 24 Holistic Transition pathway as the proposed basis for strategic alignment from 2031-35 is also supported by Hydrostor. Significant uncertainty, however, remains only 3 months out from implementation.</i></b></p>

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**Further Detail to Ensure Investor Confidence** – Centrally determined ‘system need’ is correctly at the core of this proposal. Alignment with CP30 and Beyond illustrates holistic thinking and a clear pathway to an enduring process (i.e. SSEP by 2026) thereby providing potential for greater investor confidence. Prompt clarification of CP30 zones, technology bucket definitions and how distinct technology buckets will be recombined at zone level will ensure this investor confidence is realised. We would further propose that this holistic approach needs to be further extended to ensure alignment with commercial pathways e.g. LDES Cap & Floor scheme to ensure investors can see a clear pathway to getting to Financial Investment Decision on assets that are critical to achieving CP30 and Beyond.

**Investment Horizon** - Long Duration Energy Storage (LDES) assets are defined in an international context as electricity storage units with durations  $\geq 8$  hours. As acknowledged by NESO in CP30 and FES24 Holistic Transition, LDES is a critical enabler to integrate significant volumes of new intermittent generation cost effectively. Many LDES projects carry significant DevEx and CapEx requirements. We therefore agree it is vital to include a 2031-2035 pathway in the CP30 plan to provide investors reassurance over a longer investment horizon and ensure that there is no ‘cliff edge’ for connection certainty beyond 2030. The longer horizon (i.e. 2035) also would ensure a more appropriate transition to SSEP in 2026. Other international markets that use central planning, outline system needs over 10 years plus horizon. For example, New York state, through its Energy Storage Roadmap, notes the intention to procure at least 600MW of LDES by 2030 as directed by their Regulator (Department of Public Service), with the roadmap also acknowledging that up to 4GW of LDES will be required by 2035, and an expectation that 30% of effective capacity will be storage by 2040.

**Need to differentiate Short and Long Duration Storage** - The draft CP30 pathways acknowledge the distinct roles short and long duration storage play in a Clean Power system, with separate caps for short duration and long duration storage. CP30 report notes the likely oversupply of batteries in certain zones while in parallel noting the need for large additional volumes of LDES. However, the report’s heat maps and the Draft - NESO Connections Reform Data Impact Assessment only reference storage which appears to be used interchangeably with batteries. This distinction, through separate technology buckets for long and short duration storage, will be critical to ensure CP30 “strategic alignment” requirement is applied appropriately and does not result in unintended consequences i.e. LDES assets not receiving a Gate 2 Grid connection on basis of short-term batteries oversupply. Should storage remain combined it does not create an investment signal for LDES early-stage DevEx and ultimately CapEx.

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**CP2030 Zones for LDES** – The proposed locational signals are extremely important to developers and investors. Prompt clarification of the zones for each technology is required to allow developers to assess the continued viability of their developments and unlock further investment to progress early-stage development activities. For LDES assets, it is important that multiple zones are created as having such assets in diverse locations across the system is critical to the cost-effective integration of intermittent renewable generation, which are inherently diversely located. While the focus to date has been on pumped hydro assets, alternative bulk scale mature LDES technologies like Hydrostor’s Advanced Compressed Air Energy Storage (A-CAES), also have the ability to be flexibly sited to deliver on system need with a smaller environmental impact/footprint and in the most cost-effective way. Hydrostor, for example, has 700MW of commercially contracted projects due to take Financial Investment Decision in 2025 in pioneering markets of New South Wales, Australia and California, as well as 7GW pipeline in markets where LDES commercial pathway are emerging (e.g. Ontario and New York).

**Clarification of Pathways, Implementation Sequencing & Timing** - While Hydrostor supports the intention, at the time of Consultation the definition and scale of the pathways for each technology up to 2030 are in draft format and not formally being consulted upon. The 2031 to 2035 pathways are not included within the draft, therefore there is significant uncertainty only one quarter ahead of proposed implementation. Prompt clarification of timings for ‘Gate 2 to whole queue’ process and sequencing of implementation steps (i.e. feasibility of running ‘Gate 2 to whole queue’ running in parallel with new Gate 1/Gate 2 application process) are required to provide confidence for developers/investors to continue with early development expenditure. It is critical for developers to understand when they can expect to have site certainty (i.e. post receipt of Gate 2 offer) and design their development strategy and expenditure accordingly.

**Ability of Existing Queue to Alter Existing Agreements**

Clarity on the extent of change allowed by an existing contracted party is required. An assessment of the impact of key changes should be assessed alongside a formal release of the guidance. The guidance should seek to distinguish between technology types and should be published for review early in Q1 2025.

2. Do you agree with our proposal for overall design 2 (that the reformed connections queue should be limited to and prioritised to only include ready projects that align with Government’s Clean Power 2030 Action Plan, NESO Designated Projects, and directly connected demand projects outside the scope of Government Clean Power 2030 Action Plan)?

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You can find the relevant information in **Section 5 - Our overall preferred connections reform design**

***Yes - Hydrostor generally supports overall design 2.***

This support is subject to extending the time horizon to 2035 with FES 24 Holistic Transition pathway providing the national technology caps for this period. A new reformed connections queue, primarily formed of ‘ready’ projects aligned to the 2030 and 2035 pathways, is an optimal outcome for achieving CP2030 and ensuring investor confidence for early development expenditure in long lead time assets.

Importantly, Hydrostor supports NESO risk mitigations regarding investment appetite and liquidity by including projects aligned to the 2031-2035 pathway. Projects critical for Net Zero delivery that have long development timeframes, such as LDES assets, will need provisions in place for 2031-2035 connection dates. It is crucial that LDES assets have a set connection date and queue position and visibility of a 2031-2035 pathway well ahead of the first iteration of SSEP in late 2026. Should LDES assets have to wait for the first SSEP in late 2026 this would result in a deliverability timeframe more akin to mid to late 2030s.

We agree with NESO that the design approach would need to be reconsidered if a 2031-2035 pathway were not included.

3. Do you think all ‘ready’ projects should be included in the reformed connections queue (overall design 3)? If so, how would you propose that we mitigate risks to consumers or developers of material misalignment to the SSEP?

You can find the relevant information in **Section 6 - Assessment of alternative design for connections reform**

***No, Hydrostor does not believe all ‘ready’ projects should be included in the reformed connections queue.***

We believe including all ‘ready’ projects as per overall design 3 would undermine NESO’s goal of ‘first ready, **first needed**, first connected.’ Including ready projects in the new reformed connections queue beyond those that show strategic alignment to CP30 and 2031-35 pathways would go against the principle of “first needed”. There is little benefit to ‘all ready’ developers to remain in the queue as they will find it challenging to secure the investment required to progress consents on the basis of not being aligned to CP30 and 31-35 pathways.

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We do not see any appropriate mitigation measure that would eliminate the risk of misalignment with SSEP if 'all ready' developers were included in the new queue. We do however reiterate the need to address our points made in response to Q1 above to ensure CP30 alignment requirements work optimally.

4. Do you agree that the reformed connections queue should initially focus on the 2035 time horizon?

You can find the relevant information in **Section 4 - Key building blocks for aligning connections to strategic energy plans**

***Yes – Hydrostor fully supports the 2035-time horizon. A 2035-time horizon will (i) provide longer-term investment clarity and prevent a hiatus in the development of and investment in projects needed beyond 2030 and (ii) facilitate an efficient transition to SSEP. NESO' Future Energy Scenarios 2024 (FES24) Holistic Transition scenario is an appropriate strategic alignment requirement for 2031 to 2035 timeframe.***

The strategic alignment horizon needs to account for the long lead time nature of energy projects. This proposal provides greater clarity to investors over the timeline of specifically long lead time assets such as LDES. LDES assets are defined in an international context as electricity storage units with durations ≥8 hours. As acknowledged by NESO in CP30 and FES24 Holistic Transition, LDES is a critical enabler to integrate significant volumes of new intermittent generation cost effectively. Many LDES projects are long-lead infrastructure assets with significant DevEx and CapEx requirements. We therefore agree it is vital to include a 2031-2035 pathway in the CP30 plan to provide investors reassurance over a longer investment horizon and ensure that there is no 'cliff edge' for connection certainty beyond 2030. The longer horizon (i.e. 2035) also would ensure a more appropriate transition to SSEP in 2026. Other international markets that use central planning, outline system needs over 10 years plus horizon. For example, New York state, through its Energy Storage Roadmap, notes the intention to procure at least 600MW of LDES by 2030 as directed by their Regulator (Department of Public Service), with the roadmap also acknowledging that up to 4GW of LDES will be required by 2035, and an expectation that 30% of effective capacity will be storage by 2040.

It is crucial that LDES assets have a set connection date, queue position and visibility of a 2031-2035 pathway well ahead of the first iteration of SSEP in late 2026. Should LDES assets have to wait for the first SSEP in late 2026 this would result in a deliverability time more akin to mid to late 2030s.

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### Implementation Questions

You can find the relevant information in the **Great Britain's Connections Reform: Overview Document**

5. Do NESO's preferred options against each of the variables discussed in the Overview Document best deliver efficient alignment to Government CP30 Plan?

You can find the relevant information in **Section 5 - Our overall preferred connections reform design** and **Section 7 - Further variables and options to align connections reform with strategic energy planning**

*Per Section 7 variables and the 'final recommended' solutions:*

#### **3 – Approach for demand projects:**

It is firstly important for NESO to clarify as to what is meant by 'Other 'ready' demand project types outside scope of CP30'. The current definition is very vague. We are supportive of 'Ready demand' being included in the new queue but we want to understand how the import capacity of final demand projects will be evaluated alongside LDES and other storage projects to ensure there is a fair allocation of import capacity in zones, particularly for projects which are critical to system need like LDES. There may also be opportunities for strategic planning of connection design between demand projects (e.g. hydrogen production) and LDES assets to optimise design within zones.

#### **4 – Approach to oversupply:**

We support NESO's proposal of where there is oversupply of 'ready' projects against the 2030 pathway(s), that any oversupplied projects will be considered against the 2031-35 pathway instead. We also support the proposal - where there is oversupply of 'ready' projects against the 2031-35 pathway, then any oversupplied projects will not receive a Gate 2 offer. Projects with a connection date in 2036 or later which receive a Gate 1 offer should be eligible for Capacity Reservation if they meet the criteria.

When assessing technology / capacity / location limits however, it is critical that LDES assets are considered separately from short duration storage assets, as we note is the intention in NESO's CP30 advice and FES24 Holistic Transition pathway, but this needs to be translated into and clearly stated throughout the methodologies. This point is specifically important for oversupply given the anticipated system wide oversupply of short-duration storage (i.e. batteries) as noted in Section 5 of the Connections Reform: Overview Document and CP30 stated need of an additional 3-5GW of LDES assets (i.e.

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illustrating an undersupply scenario). Based on the current methodology and grouping together of short and long duration storage this could have an unintended consequence of LDES assets being deemed oversupplied.

Specifically, for LDES we would propose the criteria for zonal substitution should include looking at whether the potential substituting project delivers the same system benefits compared to any of the 31-35 LDES projects which are perhaps located in a more beneficial location for the system. There should be a cost benefit analysis undertaken in such scenarios as this will enable NESO to appraise the wider system value/impact of the substitution, which may ultimately be sub-optimal versus moving forward with a project that aligns with the 31-35 pathway.

### **5 – Approach to undersupply:**

NESO’s proposal of ‘Potential substitution to meet undersupply in adjacent locations’ seems like a reasonable program safeguard, assuming NESO and transmission owners have planned/resources linkages between the substituting regions. Again, we would propose the criteria for zonal substitution should include looking at whether the potential substituting project delivers the same system benefits verses potentially looking at a project that aligns with the 31-35 pathway. There should be a cost benefit analysis undertaken in such scenarios as this will enable NESO to appraise the wider system value/impact of the substitution which may be sub-optimal versus a project that aligns with the 31-35 pathway. This assessment could also look at potential substitution between asset classes i.e. LDES as a substitute for dispatchable low carbon thermal, for example given the sitting limitation of low carbon thermal assets adjacent to Track 1 industrial clusters.

We are also supportive of the proposal to ‘Reserve bay and network capacity for undersupplied technology type’. We do, however, feel it needs to be a fully transparent process with defined processes and criteria. We do believe this would be very relevant to LDES technologies which are a key enabler to the integration of intermittent renewables, including offshore wind, providing constraint management, system reliability and stability. Hydrostor’s Advanced Compressed Air Energy Storage (“A-CAES”) LDES technology for example has significant potential (e.g. as outlined in NESO’s 2024 FES, under CAES) to integrate more renewables across several regions and as a synchronous resource, provide system inertia. It is critical however that where the bays are reserved for a project to connect in 2030 timeframe, there needs to be a longstop date for releasing that bay to a 2031-35 project especially such a project that aligns better with system need. This is particularly true for long lead time projects classes like LDES.

### **6 – Approach to project attrition:**

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We generally agree that the most efficient first step would be to determine if any appropriate projects (i.e. as close to like-for-like replacement as possible – technology, location and scale wise) in the connections queue within the 2031-2035 pathway could accelerate their delivery timetable to replace the project that has exited the queue. However, there should be a process to ensure this assessment is transparent and fair for all like-for-like replacement options including a cost-benefit analysis and deliverability assessment.

We agree with the proposal that there should be ‘No replacement of 2035 pathway projects until SSEP’. This is likely pragmatic as the current queue affords optionality and the ability of NESO to utilize the Designate Project option. It is also worth noting that CP30 contains two distinct pathways to Clean Power – Further Flex and Renewables and New Dispatch. While we support the need for competition between technologies, it is important that NESO manage any pivoting between these two pathways carefully and transparently with Gas CCS/Hydrogen and LDES players to ensure continued investor confidence

### **7 – Optimal use of network:**

We understand NESO is still considering the approach for applying optimal use of network to new projects. LDES assets have the potential to facilitate optimal use of the existing network and be cost effective to the consumer, hence Hydrostor welcomes the opportunity to design-in LDES as part of the solution.

### **8 – Transition to SSEP:**

Hydrostor endorses the proposal that ‘No reduction or reordering of the new queue because of SSEP’ will take place. It provides a level of certainty for investors/developers once the queue is established. It is also worth noting that CP30 contains two distinct pathways to Clean Power – Further Flex and Renewables and New Dispatch. Further Flex and Renewables proposed 7.9GW of LDES and 0.3GW of Gas CCS/Hydrogen while New Dispatch proposed 4.6GW of LDES and 2.7GW of Gas CCS/Hydrogen. While we support the need for competition between technologies, it is important that NESO manage any pivoting between these two pathways carefully and transparently with Gas CCS/Hydrogen and LDES players to ensure continued investor confidence.

### **9 - CP30 alignment applying to transmission and distribution:**

We agree there should be no difference in the treatment of CP30 alignment criteria between transmission and distribution.

### **10 – Spatial element to CP30 alignment:**

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We agree with the introduction of a spatial element to alignment with CP30 and Beyond. This will ensure that projects are located where they would best support the economic and efficient development of the whole system. Any option that does not reflect spatial elements may result in the inefficient development of the electricity transmission system and risks material misalignment with Government's CP30 Plan and in future with the SSEP, which would undermine the objectives of those strategic plans. The spatial element needs to layer on network and any other known constraints / opportunities. It will be counter-productive to investor confidence if, for example, the plans show a lot of opportunity for a technology in a given zone when it is not actually achievable. This should be more advanced in the SSEP, but CP30 needs to consider this point to a greater extent, certainly more than V0.02 of the Draft Impact Assessment suggests. Prompt clarification of the zones for each technology is required to allow developers to assess the continued viability of their developments and unlock further investment to progress early-stage development activities. For LDES assets, it is important that multiple zones are created as having such assets in diverse locations across the system is critical to the cost-effective integration of intermittent renewable generation, which are inherently diverse in location. While the focus to date has been on pumped hydro assets, alternative bulk scale mature LDES technologies like Hydrostor's A-CAES, can be flexibly sited to deliver on system need with a smaller environmental impact/footprint in the most cost-effective way. Hydrostor has 700MW of commercially contracted projects due to take Financial Investment Decision in 2025 in pioneering markets of New South Wales, Australia and California, as well as 7GW pipeline in markets where LDES commercial pathway are emerging (e.g. Ontario and New York).

### **11 – How projects are ordered to determine CP30 alignment:**

We fully agree with the technology, locational and timeframe alignment criteria subject to the points made in Q1. Regarding the separating of Phase 1 (up to 2030) and Phase 2 (2031-2035) projects, we assume there will be sufficient evidence required of ability to achieve proposed commercial operational dates to ensure there is no opportunity for gaming of this first step. We also agree that projects should then be sequenced according to consent progress. While we understand the merits of then re-ordering the queue based on previous queue position, we prefer a planning status only approach (rather than a combination of planning status and existing queue position). In our view it would better deliver the overarching aims of the reforms, namely promoting 'ready' projects. We also agree with the definition of 'Planning Obtained' to include where a DCO application has been submitted and verified but not yet determined. This is appropriate given the volume of effort and spend required to progress a DCO application.

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<p>6. Do the methodologies deliver our preferred options against each of the variables?</p>
<p>You can find the relevant information in <b>Section 3 - Overview of framework of codes and methodologies for connections reform</b></p>
<p>Generally, yes, we do believe the methodologies as set out deliver NESO’s preferred options against each of the variables. We would re-emphasise the need for the following fundamental considerations to ensure delivery of NESO’s preferred options:</p> <p><b>Further Detail to Ensure Investor Confidence</b> – Prompt clarification of CP30 zones, technology buckets definitions and how distinct technology buckets will be recombined at zone level will ensure investor confidence is realised. We would further propose that this holistic approach needs to be further extended to ensure alignment with commercial pathways e.g. LDES Cap &amp; Floor scheme to ensure investors can see a clear pathway to getting to Financial Investment Decision on assets that are critical to achieving CP30 and Beyond.</p> <p><b>Investment Horizon</b> - LDES assets are defined in an international context as electricity storage units with durations <math>\geq 8</math> hours. As acknowledged by NESO in CP30 and FES24 Holistic Transition, LDES is a critical enabler to integrate significant volumes of new intermittent generation cost effectively. Many LDES projects are long-lead infrastructure assets with significant DevEx and CapEx requirements. We therefore agree it is vital to include a 2031-2035 pathway in the CP30 plan to provide investors reassurance over a longer investment horizon and ensure that there is no ‘cliff edge’ for connection certainty beyond 2030. The longer horizon (i.e. 2035) also would ensure a more appropriate transition to SSEP in 2026. Other international markets that use central planning, outline system needs over 10 years plus horizon. For example, New York state, through its Energy Storage Roadmap, notes the intention to procure at least 600MW of LDES by 2030 as directed by their Regulator (Department of Public Service), with the roadmap also acknowledging that up to 4GW of LDES will be required by 2035, and an expectation that 30% of effective capacity will be storage by 2040.</p> <p><b>Need to differentiate Short and Long Duration Storage</b> - The CP30 pathways acknowledge the distinct roles short and long duration storage play in a Clean Power system, with separate caps for short duration and long duration storage. CP30 report notes the likely oversupply of batteries in certain zones while in parallel noting the need for large additional volumes of LDES. However, the report’s heat maps and the Draft - NESO Connections Reform Data Impact Assessment only reference storage which appears to be used interchangeably with batteries. This distinction, through separate technology buckets for long and short duration storage, will be critical to ensure CP2030 “strategic alignment” requirement is applied appropriately and does not result in</p>

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unintended consequences i.e. LDES assets not receiving a Gate 2 Grid connection on basis of short-term battery technology oversupply. Should storage remain combined it does not create an investment signal for LDES early-stage investment.

**CP2030 Zones for LDES** – We agree with the introduction of a spatial element to CP30 and Beyond alignment. This will ensure that projects are located where they would best support the economic and efficient development of the whole system. Any option that does not reflect spatial elements may result in the inefficient development of the electricity transmission system and risks material misalignment with Government’s CP30 Plan and in future with the SSEP, which would undermine the objectives of those strategic plans. Prompt clarification of the zones for each technology is required to allow developers to assess the continued viability of their developments and unlock further investment to progress early-stage development activities. For LDES assets, it is important that multiple zones are created as having such assets in diverse locations across the system is critical to the cost-effective integration of intermittent renewable generation, which are inherently in diverse locations. While the focus to date has been on pumped hydro assets, alternative bulk scale mature LDES technologies like Hydrostor’s A-CAES, can be flexibly sited to deliver on system need with a smaller environmental footprint/impact in the most cost-effective way. Hydrostor has 700MW of commercially contracted projects due to take Financial Investment Decision in 2025 in pioneering markets of New South Wales, Australia and California, as well as 7GW pipeline in markets where LDES commercial pathway are emerging (e.g. Ontario and New York).

7. Are there key policy areas that are not covered by our preferred options against each of the variables or that would not be delivered by the methodologies?

You can find the relevant information in **Section 5 - Our overall preferred connections reform design** and **Section 7 - Further variables and options to align connections reform with strategic energy planning**

**Extending of CP30 & Beyond Alignment to Commercial Pathways** - Centrally determined ‘system need’ is correctly at the core of this proposal. Alignment with CP30 and Beyond illustrates holistic thinking and a clear pathway to an enduring process (i.e. SSEP by 2026) thereby providing potential for greater investor confidence. We would further propose that this holistic approach needs to be further extended to ensure alignment with commercial pathways e.g. LDES Cap & Floor scheme to ensure investors can see a clear pathway to getting to Financial Investment Decision on assets that are critical to achieving CP30 and Beyond.

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**Consolidation of Technology Buckets for each Zone** – Further clarification from NESO as to how individual technology bucket will be recombined at zonal level/across zones, would be very beneficial especially given the technology mix of generation, demand and storage that may result in need for further review of the outcomes.

8. Do you agree with our approach to managing project attrition between 2025-2030, and 2031-2035, whilst ensuring that the SSEP can deliver maximum benefits to GB consumers?

You can find the relevant information at **Section 7 - Further variables and options to align connections reform with strategic energy planning**

We generally agree that the most efficient first step would be to determine if any appropriate projects (i.e. as close to like-for-like replacement as possible – technology, location and scale wise) in the connections queue within the 2031-2035 pathway could accelerate their delivery timetable to replace the project that has exited the queue. However, there should be a process to ensure this assessment is transparent and fair for all like-for-like replacement options including a cost-benefit analysis and deliverability assessment.

We agree with the proposal that there should be ‘No replacement of 2035 pathway projects until SSEP’. This is likely pragmatic as the current queue affords optionality and the ability of NESO to utilise the Designate Project option. It is also worth noting that CP30 contains two distinct pathways to Clean Power – Further Flex and Renewables and New Dispatch. While we support the need for competition between technologies, it is important that NESO manage any pivoting between these two pathways carefully and transparently with Gas CCS/Hydrogen and LDES players to ensure continued investor confidence.

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### Connections Network Design Methodology

You can find the relevant information in the [Connections Network Design Methodology - Detailed Document](#)

9. Do you agree with the approach to applying the Gate 2 Readiness Criteria and the Gate 2 Strategic Alignment Criteria to the existing queue and future Gate 2 Tranches?

**Yes, Hydrostor fully supports the criteria’s application, which strongly applies the notion of ‘first ready, first needed, first connected’.**

We agree this is a pragmatic framework for managing the significant existing queue, while providing some clarity to projects already in the queue. Eliminating speculative projects in the first instance is crucial to forming a first ready, first needed, first connected process.

We support the exemption of projects that are under construction or that will be connected in 2026. We would encourage the strict implementation of this exemption.

Prompt clarification of timings for ‘Gate 2 to whole queue’ process and sequencing of implementation steps (i.e. feasibility of running ‘Gate 2 to whole queue’ running in parallel with new Gate 1/Gate 2 application process) are required to provide confidence for developers/investors to continue with early development expenditure. It is critical for developers to understand when they can expect to have site certainty (i.e. post receipt of Gate 2 offer) and design their development strategy and expenditure accordingly.

- **Do you agree with the three categories of Planning Obtained, Planning Submitted, and Land Rights for sorting projects?**

We agree with the categories. We also agree with the definition of ‘Planning Obtained’ to include where a DCO application has been submitted and verified but not yet determined. This is appropriate given the volume of effort and quantum of spend required to progress a DCO application. For ‘Planning Obtained’ could NESO please clarify what it will consider as the equivalent process for Scottish projects?

- **Do you believe Phase 2 should remain in existing relative queue order, or should it also be reordered by planning status to determine alignment to the CP30 Plan?** To maintain the principle of “first ready, first needed, first connected” then yes, the Phase 2 projects should be ordered by planning status and not by existing queue position. Hydrostor appreciate there may be some unintended consequences of the proposed. A project with a 2031 date requiring a DCO may enter planning sooner than a project requiring Town and Country planning yet will typically remain in the process for much longer. Hence while we are in support, we

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welcome further analysis of reordering based on actual cases to allow such unintended consequences to be designed out ahead of implementation.

- **We have explored two alternatives, shown on pages 82 and 83? Would you support either of these alternatives over the proposed approach on page 29?**

While we understand the merits of the proposed approach on page 29, we would support Alternative 2 on page 82 (Planning status) as in our view it would better deliver the overarching aims of the reforms, namely truly 'ready' projects.

Additionally, on **5.7.4 and 5.7.5**, the approach to projects with phased capacity, we propose that projects with partial capacity in Phase 1 do not have an automatic route into obtaining their remaining capacity in Phase 2 based on their Phase 1 queue position i.e. each element of the project, including the capacity increase project, should be evaluated on its own merits against other projects in the queue. This should limit the use of phasing to gain a better queue position.

10. Do you agree with the approach to managing advancement requests?

**Do you agree with taking advancement requests into consideration when reordering the existing queue?**

We agree in principle with allowing advancement requests subject to (i) these projects being required to show sufficient evidence of their ability to advance and (ii) the evaluation of advancement requests does not hold up the queue reordering process i.e. it should be subject to deadlines / fall within the overarching timeframes for reform.

**Do you agree with the limited circumstances under which NESO would permit Users to request reversion to their original connection date?**

We agree in principle but again we would not be supportive of any process which prolongs the re-ordering of the existing queue so these assessments should fall within the overarching timeframes for reform.

11. Do you agree with the approach to reserving Connection Points and Capacity at Gate 1?

**Do you agree with the concept of reserving for undersupply against the CP30 Plan pathway(s) to 2030?**

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We agree with the concept subject to the reserved capacity 1) being held to a longstop date and 2) allocated to the 2035 pathway first. The longstop date set should be considered carefully so as not to hoard capacity to the detriment of potential 2031-35 pathway aligned projects, especially those with long lead times e.g. LDES assets.

### **Do you agree with the circumstances under which NESO could reserve a Connection Point and Capacity for a known project?**

We agree, subject to the Connection Point and Capacity being reserved for a known project up until a longstop date – as per above, the Connection Point and Capacity reservation should not be at the detriment of allowing viable 2031-35 pathway aligned projects the opportunity to progress.

### **Do you agree with the circumstances under which NESO could reserve a Connection Point and Capacity for an as yet unknown project?**

On 6.3.1, we would suggest LDES is explicitly included on this list given the well identified benefits it provides to system planning. It may be that any projects participating under the LDES Cap & Floor scheme are eligible. Precedent has already been set by the inclusion of ‘future Network Services Projects ahead of tendering’. Transparency is going to be important for all parties and at present the use of reservation is not as defined as it needs to be ahead of implementation.

12. Do you agree with the approaches to reallocating capacity when 2030 pathway projects and 2035 pathway projects exit the queue?

The reallocation method options appear pragmatic. However, we note this process is very subjective and could lack transparency. While we recognise the need for NESO to have flexibility, we do believe a prescribed process should be set out for how this will work in practice and that a cost/benefit analysis should be at the core of decision making. For 7.17 (2035 pathway drop out) we agree NESO should look to SSEP to determine optimal replacement but also maintain the option of utilising Project Designation.

## Gate 2 Criteria Methodology

You can find the relevant information in the [Gate 2 Criteria Methodology- Detailed Document](#)

13. Do you agree with the following elements of this Gate 2 Criteria Methodology?

- a. Gate 2 Readiness Criteria – Land (Chapter 4)

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- b. Gate 2 Readiness Criteria – Planning (Chapter 5)
- c. Gate 2 Criteria Evidence assessment (Chapter 8)
- d. Self-Declaration Templates (Chapter 9)

We are supportive that there is optionality between land and planning as a route to readiness but would emphasise that NESO needs to acknowledge that the two Gate process in general creates substantial risk for developers. Until such time as developers have a firm connection point at Gate 2, spend on site specific consenting works and FEED are at risk. If a developer was to proceed with site specific works and should the anticipated connection point change between Gate 1 and 2 this could lead to significant sunk costs, which will need to be recouped and ultimately likely to be borne by consumers.

a. **Yes, we agree.** On 4.3 (Minimum acreage requirements) Hydrostor supports that emerging technologies not represented on the energy land density table should be treated on a case-by-case basis.

b. **Yes, we agree.** We support that this route is open to DCO projects only, allowing any other planning route would introduce uncertainty with regards to land control given lack of CPO rights. Projects in Scotland would seek a Section 36, therefore Hydrostor support an extension of this route for projects seeking a Section 36 as well as those seeking a DCO. For 'Planning Obtained' could NESO please clarify what it will consider as the equivalent process for Scottish projects?

a. **Yes, we agree.** Prompt clarification of timings for 'Gate 2 to whole queue' process and sequencing of implementation steps (i.e. feasibility of running 'Gate 2 to whole queue' running in parallel with new Gate 1/Gate 2 application process) are required to provide confidence for developers/investors to continue with early development expenditure. It is critical for developers to understand when they can expect to have site certainty (i.e. post receipt of Gate 2 offer) and design their development strategy and expenditure accordingly.

b. **Yes, we agree.**

14. Do you agree that the alternative route of meeting the Gate 2 Readiness Criteria should be only limited to projects that seek planning consent through the Development Consent Order route?

We support that this route is open to DCO projects only, allowing any other planning route would introduce uncertainty with regards to land control given lack of CPO rights. For

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'Planning Obtained' could NESO please clarify what it will consider as the equivalent process for Scottish projects?

### Project Designation Methodology

You can find the relevant information in the [Project Designation Methodology - Detailed Document](#)

15. Do you agree that the categories of projects that we have identified are the appropriate ones to potentially be designated?

**Yes**, Hydrostor agrees with the categories of projects identified by NESO. As noted in our response to Q1, we would further propose that Designate Project categories could be extended to ensure alignment with participation/outcome of commercial pathways e.g. LDES Cap & Floor scheme to ensure investors can see a clear pathway to getting to Financial Investment Decision on assets that are critical to achieving CP30 and Beyond.

Our specific view on each category is outlined below:

- A. **Critical to the Security of Supply**: Supportive. Hydrostor particularly supports the mentions of LDES under this provision, which has the potential to add certainty and accelerate deployment of this important asset class. It would be important to understand how frequently NESO will assess material risks of not meeting its security of supply objectives.
- B. **Critical to system operation**: Supportive. To our overarching point would it be helpful to align designation under this provision with contract awards e.g. LDES C&F or system service contracts.
- C. **Materially reduce system and/or network constraints**: Supportive. Adding LDES to the system enables wind and solar generation to be used more effectively – meaning the same level of emissions reduction to meet targets can be achieved with less investment in renewable capacity. This allows for a reduction in system costs. LCP Delta analysis that accompanied the LDES Cap & Floor Scheme design consultation, shows that deploying 20GW of LDES can save up to £24bn in power sector system costs (Net Present Value) from 2030 to 2050. Duration of LDES is the biggest factor in the size of the impact, with those longer duration technologies having the largest impact on emissions and system costs.
- D. **New Technologies and/or highly innovative**: Supportive. Hydrostor advocates that there may be a case that LDES technologies may meet such requirements, if they do not already address provisions under A, B, and C. Alternative bulk scale

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mature LDES technologies like Hydrostor’s Advanced Compressed Air Energy Storage (A-CAES) can be flexibly sited to deliver on system need in the most cost-effective way. Hydrostor has 700MW of commercially contracted projects due to take Financial Investment Decision in 2025 in pioneering markets of New South Wales, Australia and California, as well as 7GW pipeline in markets where LDES commercial pathway are emerging (e.g. Ontario and New York).

- E. **Projects with ‘very long lead times’**: Supportive. We do, however, believe a Designated Project under this criterion in Phase 2 (i.e. 2031-35) should not be limited to a connection date at the end of 2035 at the earliest.

### 16. Do you agree with the proposed criteria for assessing Designated Projects?

Hydrostor would suggest that some additional definition/threshold/guidance around what constitutes ‘material’ impact would be helpful. Further, confirmation of the framework (i.e. who is responsible) for determining materiality would also be helpful.

Given the impact Grid Connection delays are having on long lead time projects and the knock on effect on site specific development works like consenting, permitting and FEED, it may also be worth considering alignment of Designate Project with the LDES Cap & Floor scheme (i.e. Designate Project for LDES Cap & Floor participants or an ability for them to rely on the assumption that should they be selected under the LDES Cap & Floor that they will be considered on a Designate Project basis).

### 17. Do you agree with the indicative process NESO will follow for designating projects?

Yes, we generally agree with the process. We agree it is appropriate for projects to submit their reasoning/evidence to request such designation. We also agree with the criteria set-out under which projects would be eligible. We expect NESO will be minded to offer Designate Project status during the ‘Gate 2 to whole queue’ reassessment process, we would note the importance of also understanding further options that become available under the new application window particularly for the 2031-35 time horizon.

We would ask NESO to clarify if projects can apply for Designate Project under multiple criteria. If so, should ‘very long lead time’ be put forward as one of these multiple criteria, will a project always receive an end of 2035 connection date as per the ruleset, even if for

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example it is also critical to security of supply and could therefore be considerable valuable to the system in the 2031-2035 timeframe.

Transparency will be key for this process. It important all Users know who has submitted a designation application and be able to track it through the process. As it stands, it is unclear if the appeals process is only for the unsuccessful User or all contracted Users.

### Additional Questions

18. Do you have any other comments (including whether there was anything else you were expecting to be covered in these documents)?

**Clarification of Implementation Sequencing** - Prompt clarification of timings for 'Gate 2 to whole queue' process and sequencing of implementation steps (i.e. feasibility of running 'Gate 2 to whole queue' running in parallel with new Gate 1/Gate 2 application process) are required to provide confidence for developers/investors to continue with early development expenditure. It is critical for developers to understand when they can expect to have site certainty (i.e. post receipt of Gate 2 offer) and design their development strategy and expenditure accordingly.

**Consolidation of Technology Buckets for each Zone** – Further clarification from NESO as to how individual technology buckets will be recombined at zonal level/across zones would be very beneficial, especially given the technology mix of generation, demand and storage that may result in a need for further review of the outcomes.