Public

Great Britain's Connections Reform: Overview Document

November 2024

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Foreword

Connections Reform plays a critical role in Great Britain's transition towards a clean power system

The process of connecting to the electricity system was designed for a fossil-based and less complex system. Over recent years, the volume of projects in the queue has grown far beyond the number needed for 2050, let alone 2030. Under the existing "first come, first served" approach to connections, projects looking to join the queue today are receiving offer dates in the late 2030s. Reforming these outdated connections processes presents an incredible opportunity for Great Britain (GB), boosting energy security and ensuring timely connections for the thousands of clean energy projects that can drive economic growth.

As GB continues its journey towards decarbonisation, it is crucial that the connections process undergoes a transformation as well. This change is necessary to deliver our clean power goals, seize economic opportunities, and provide an enhanced service for customers.

Reaching our goals means that we must approach things differently, with a greater focus on efficiency, collaboration, and most importantly, a sense of urgency. We will ensure that the process evolves in a manner that drives progress, unlocks new opportunities, and aligns with the demands of the energy system.

As we set out in our Clean Power advice to the Government and in this document, there is a significant difference between the current mix and order of projects in the queue and the locational and technological mix we will need in 2030. This document outlines how we will strategically align the connections queue with the technology mix that GB needs for 2030. This is part of a wider reform package, which we have been working on with industry, Ofgem and DESNZ.

We have been developing the package with the pace and ambition that the challenge and the opportunity demand. We have been mindful of the value of a transparent and collaborative process, actively involving, and seeking input from, industry stakeholders. The documents we are publishing today set out our recommended approach, the alternatives that we have considered, and the reasoning behind our recommendations. We are also including an assessment of impacts and a detailed set of documentation to support implementation.

Matthew Vickers
Director of Connections Reform
National Energy System Operator

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1. Executive Summary

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Executive Summary (1/2)

There is a clear and urgent need to reform the electricity network connections processes. Projects are waiting too long to connect to the network, which is hindering our progress to deliver net zero, and therefore our ability to deliver clean power and reduce reliance on fossil fuels. Currently, the transmission queue alone contains ~550GW of generation, storage and interconnection projects, contributing to the more than 750GW or projects across transmission and distribution networks seeking network connections.

Our recommendations to Government on pathways to deliver Clean Power by 2030 indicate that we need 200-225GW of generation projects connected by 2030. Government's Clean Power 2030 Action Plan (CP30 Plan) can help ensure the efficiency of the new connections queue and that 'ready' and strategically aligned projects are connected efficiently to achieve clean power. This could be achieved through including capacity requirements for different technologies connecting at transmission and distribution networks, and clearly separating the proposed mix of transmission and distribution technologies, by capacity and location.

However, the transition to net zero emissions across the economy by 2050 does not stop with achieving clean power in 2030. Projects needed beyond 2030 are in development now and require clarity on their connection agreements too. This could be achieved through Government's CP30 Plan providing clarity on the pathway upon which connection offers can be based for the period 2031-35. We have proposed that this 2031 to 2035 pathway should be based on the Holistic Transition scenario within our Future Energy Scenarios 2024 (FES24)[0] to 2035, which would result in a need for up to c285GW of generation projects connected by 2035.

Projections from our FES24 Holistic Transition scenario indicate that c380GW of generation, interconnection and storage may ultimately be required by 2050. Evidently, there is therefore a significant oversupply in the current connections queue. We have seen substantial increases in the number and capacity of projects seeking to connect; in the last two years, the queue has over doubled in size and has grown by 2.5 times since May 2023. However, our data shows that up to 70% of projects in the current queue may never be built. These projects are therefore holding capacity and delaying other projects connecting.

After extensive industry engagement, we put forward here for consultation a new, agile, future-proof process for connection and access to the transmission system. The scope of our connections reform proposals includes all projects connecting at transmission level, and any generation and storage projects connecting to the distribution networks that impact upon the transmission system.

In the last two years, the queue has over doubled in size and has grown by 2.5 times since May 2023.

Many of these projects are therefore holding capacity and delaying the most appropriate mix of other projects connecting.

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[0] Future Energy Scenarios (FES) | National Energy System Operator (neso.energy)

Executive Summary (2/2)

This consultation focuses on the reformed connections process and formation of the new queue, building on the 'readiness' proposals already being taken forward via relevant urgent code modifications[1]. It also recommends alignment between the connection process and strategic energy plans published by the Government. This will ensure a balanced mix of generation, interconnection and storage technologies, that reduces wait times for renewable project developers, enabling faster integration of clean energy sources and ensures a more efficient achievement of Government's CP30 Plan.

This document, along with the accompanying connections methodologies, sets out for consultation how we propose to align the reformed connections process with strategic energy plans (initially the CP30 Plan, and then the first Strategic Spatial Energy Plan). This covers proposals to deal with different factors like planning time horizons, management of under- and oversupply, alignment across transmission and distribution networks, and managing project attrition.

At a high level we propose that the reformed connections process and entry to the reformed connections queue should be based on a combination of project 'readiness' and 'strategic alignment':

- 'Readiness' relates to projects demonstrating that they have secured relevant land rights or planning;
- 'Strategic alignment' relates primarily to projects aligning with the pathways within Government's CP30 Plan (by technology, capacity and location, at transmission and distribution), but also includes a route into the new queue for projects that were not known at the time of the CP30 Plan or that are otherwise outside the scope of the CP30 Plan.

These documents outline NESO's preferences and rationale for them, but the proposals are for consultation, and we welcome alternative solutions that would achieve the desired objectives.

This document outlines the purpose and scope of our proposed connections reforms and details a series of questions for industry, as set out on pages 9 and 10.

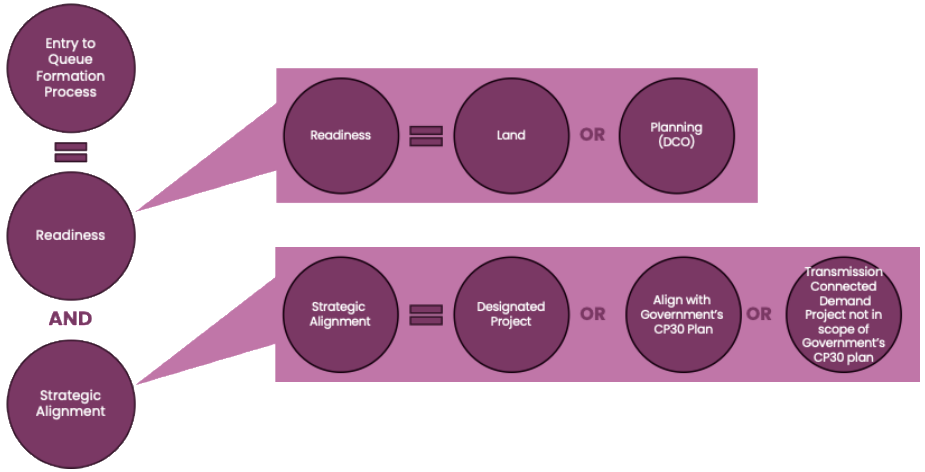


Figure 1: Our high-level recommendations for entry to the Reformed connections queue

[1] Code modifications CMP434 and CM095 (Implementing Connections Reform) and CMP435 and CM096 (Application of Gate 2 Criteria to existing contracted background).

NESO's role and introduction of methodologies

As NESO takes on enhanced responsibilities in the industry, including driving coordinated whole energy system development, there is recognition that to facilitate this, NESO's role in the connections process also needs to evolve.

As such, Ofgem stated in its **open letter** in September 2024 that NESO is being charged with greater control over the connections process to facilitate the "*delivery of the strategic plans in an open, transparent way that safeguards the interests of industry as well as meeting statutory objectives*."

NESO's view, as aligned with Ofgem's open letter, is that the optimal way to make changes to the connections reform proposals to align with and operationalise strategic energy plans is to deliver changes through the connections' methodologies. Critically, these enable flexibility for the future; we recognise the scale of change that is coming down the line, and to be able to respond rapidly and flexibly to amend processes to align with new policy positions or implement reforms, we need the right mechanisms in place.

We strongly believe that, alongside the new governance structure that Ofgem are implementing, the use of methodologies provides the right balance between futureproofing our approach, providing visibility and transparency, and the right protections to industry.

Following this consultation, NESO will submit the methodologies to Ofgem for approval, to then issue new licence conditions requiring NESO and other network companies (as appropriate) to adopt the methodologies to implement connections reform. Note that this is in addition to the formal code process to introduce a new 'gated' connections process that is already being taken forward via relevant urgent code modifications.

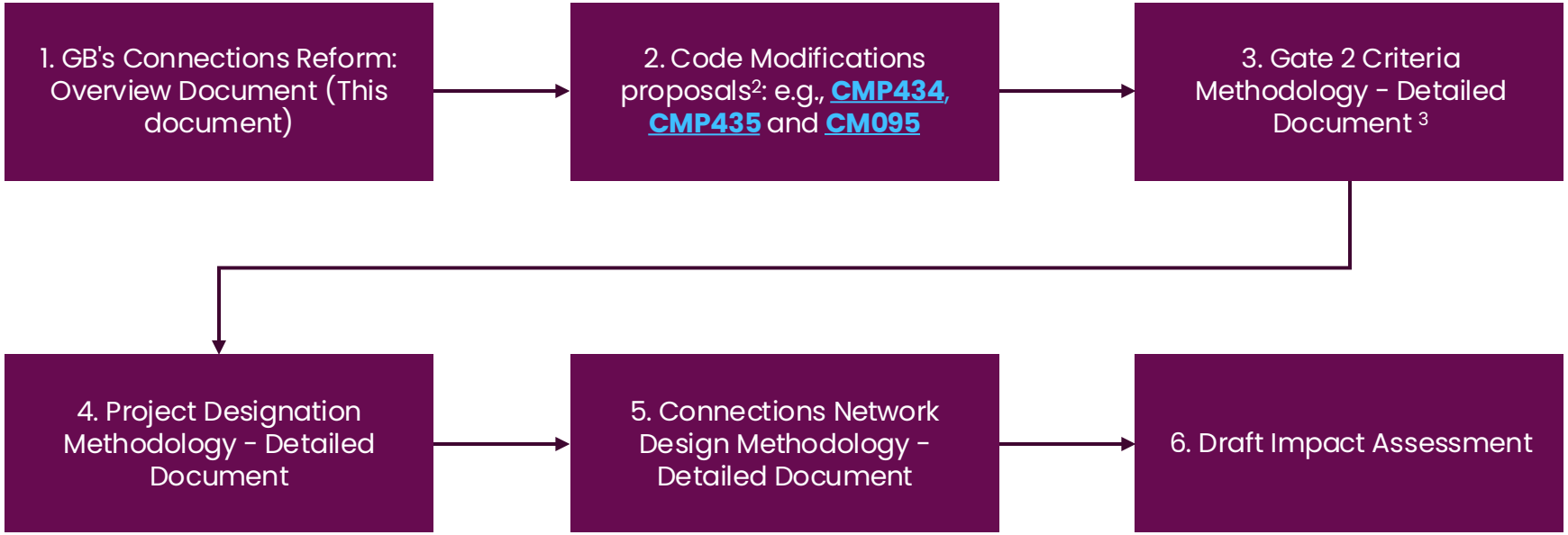
Publications Overview

To facilitate the consultation, we are publishing the following documents:

- GB's Connections Reform: Overview Document (this document)
- Gate 2 Criteria Methodology - Detailed Document
- Project Designation Methodology - Detailed Document
- Connections Network Design Methodology - Detailed Document
- Draft Impact Assessment

How to read this consultation:

To optimise your understanding, we recommend you read the published documents in the following order:



[2] Code Administration Consultation will open from the 11th November 2024

[3] Please see page 22 for how these methodologies interact

Consultation Questions (1/2)

We welcome your feedback on the proposals outlined in each of the documents. To help guide your response, please see below the key policy questions that we are seeking your views on, and the more detailed implementation questions that we welcome reflections on.

	Policy Questions	Please refer to the following sections
1.	Do you agree with our intention to align the connections process to Government's Clean Power 2030 Action Plan?	2: Context
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)?	5: Our overall preferred connections reform design
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?	6: Assessment of alternative design for connection reform
4.	Do you agree that the reformed connections queue should initially focus on the 2035 time-horizon?	4: Key building blocks for aligning connections to strategic energy plans
	Implementation Questions	**Please refer to the following sections**
5.	Do NESO's preferred options against each of the variables discussed in the Overview Document best deliver efficient alignment to Government CP30 Plan?	5: Our overall preferred connections reform design 7: Further variables and options to align connections reform with strategic energy planning
6.	Do the methodologies deliver our preferred options against each of the variables?	3: Overview of framework of codes and methodologies for connections reform
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?	5: Our overall preferred connections reform design 7: Further variables and options to align connections reform with strategic energy planning
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?	7: Further variables and options to align connections reform with strategic energy planning

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Consultation Questions (2/2)

Connections Network Design Methodology questions: ***Please see the Connections Network Design Methodology - Detailed Document*** here

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?
10. Do you agree with the approach to managing advancement requests?
11. Do you agree with the approach to reserving Connection Points and Capacity at Gate 1?
12. Do you agree with the approaches to reallocating capacity when 2030 pathway projects and 2035 pathway projects exit the queue?

Gate 2 Criteria- Consultation Questions: ***Please see the Gate 2 Criteria Methodology- Detailed Document*** here

13. Do you agree with the following elements of this Gate 2 Criteria Methodology?
    - Chapter 4: Gate 2 Readiness Criteria – Land
    - Chapter 5: Gate 2 Readiness Criteria – Planning
    - Chapter 8: Gate 2 Criteria Evidence assessment
    - Chapter 9: Self-Declaration Templates

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?

Project Designation Methodology-Consultation Questions: ***Please see the Project Designation Methodology - Detailed Document*** here

15. Do you agree that the categories of projects that we have identified are the appropriate ones to potentially be designated?
16. Do you agree with the proposed criteria for assessing Designated Projects?
17. Do you agree with the indicative process NESO will follow for designating projects?

Additional questions:

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

Please provide your feedback by completing this Connections Reform Consultation Response Form or by completing this Connections Reform: Consultation Response Proforma and sending an electronic copy to box.connectionsreform@nationalenergyso.com by 5pm on the closing date of 2nd December 2024.

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2. Context

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Connections: The current landscape

In April 2024, we published an **Update on implementation of reformed connections processes**, within which we set out our approach (TMO4+). This focused on reforming the current and future connections queue based on projects demonstrating 'readiness' at a new 'Gate 2' assessment stage. The scope of our connections reform proposals included all projects connecting at transmission level, and any generation and storage projects connecting to the distribution networks that impact upon the transmission system.

By focusing the connections queue on 'readier' projects this was intended to provide a positive, timely impact on connections timelines. We set out that this approach would help deliver our overall objective for a reformed connections process in GB that: "*Ensures quicker connection to and use of the electricity transmission system, in a more coordinated and efficient way, in order to help meet net zero ambitions*".

Within that report (page 5), we also highlighted the importance of future proofing the design of the reformed connections process; to further develop Gate 2 criteria to align the connections queue with GB's future energy needs. We referenced the need to align connections reform with strategic energy planning, specifically with the forthcoming Strategic Spatial Energy Plan (SSEP). We set out that project developers require certainty that the locations identified as the most strategically important have the optimal network infrastructure to enable them and that this also provides important benefits for GB consumers.

The decision in April was to align the connections process with the first SSEP report once it was published (then estimated as mid to late 2026). This demonstrated our commitment to reform the connections process in the context of Ofgem and Government's 2023 Connections Action Plan (CAP)[4], specifically action 3.6 (alignment with strategic planning) and reducing reliance on fossil fuels, while delivering GB's net zero ambitions for 2030 and beyond.

The connections queue contains over 750 gigawatts of projects, over double what is needed to meet our 2050 forecasts

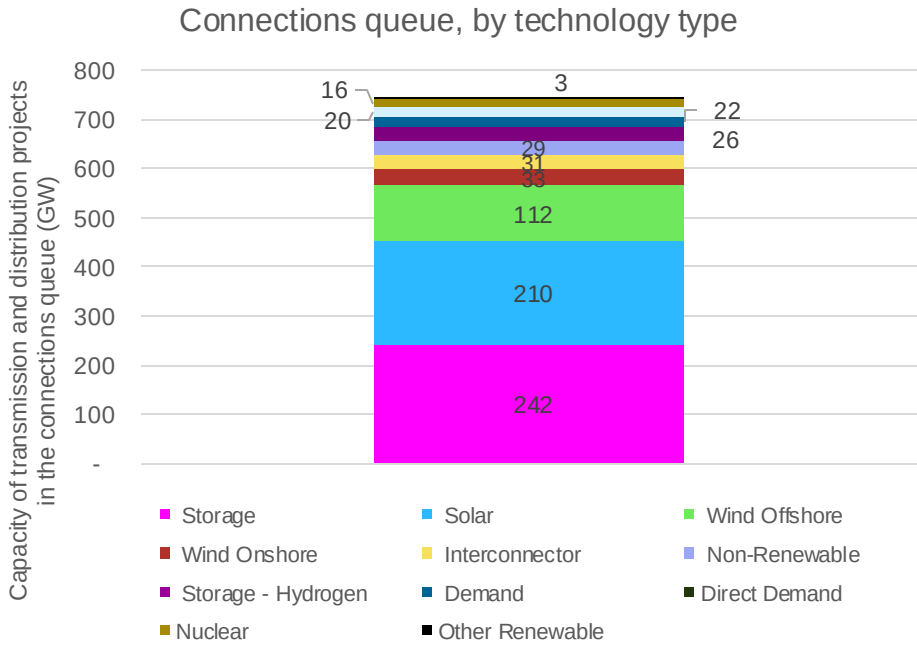

Figure 2: Current connections queue for transmission and distribution projects, including built capacity, split by technology type (Oct 2024).

Note this does not include the increased potential generation of hybrid projects.

[4] Connections Action Plan: Speeding up connections to the electricity network across Great Britain

Connections Reform needs to be firmly aligned with Strategic Energy Planning

Summer 2024

The new Government commissioned us (as the National Energy System Operator, NESO) to "*provide practical advice on achieving **clean power by 2030** for Great Britain*".[5] Government's commission to NESO made specific reference to the connections process, noting that NESO advice should include "***considerations of criteria that could support connections reform***".

August 2024

NESO (then ESO) submitted a paper to the Connections Delivery Board (CDB)[6] highlighting the need to **re-evaluate the TMO4+ model considering this commission**, and in the context of meeting CAP action 3.6. The CDB advised that NESO should collaborate with Ofgem, the Government, and network companies to **explore options for integrating technological or technical requirements into the connections process**.

September 2024

NESO (then ESO) submitted a further paper to CDB, recommending that the new connections queue, determined under new, revised, TMO4+ arrangements, should be **aligned to Government's Clean Power 2030 Action Plan (CP30 Plan).** NESO's view was that this would **enable delivery of the Government's strategy to achieve clean power** for Great Britain. Coordinating the approach to grid connections and ensuring an efficient mix of energy projects strategically across GB, which is aligned to and informs timely and cost-effective network build, would **reduce the costs of transporting power to homes and businesses** and facilitate **timely transition to net zero**.

November 2024

This document and accompanying methodologies set out further information, for consultation, on **how we propose that the reformed connections process and new queue can most efficiently align to the CP30 Plan in practice**. Moreover, our technological and technical policy proposals have also been informed by Government's desire (as set out in our CP30 Plan commission) to "*ensure the plan for clean power by 2030 **integrates with the longer term Strategic Spatial Energy Plan (SSEP)***".

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[5] Letter from SoS and Chris Stark requesting practical advice on achieving clean power by 2030 for Great Britain

[6] The Connections Delivery Board (CDB) oversees the delivery of improvements to the GB connections process to significantly reduce connection timescales

Initially, this strategic alignment will be with the CP30 Plan

Government's CP30 Plan

The Government is assessing the **Clean Power 2030 Report**, we submitted at the start of November. Within that report we have proposed potential pathways (i.e., the mix of generation, interconnection and storage, by technology, capacity and location), which we consider can enable a Clean Power system by 2030. The CP30 Plan, currently expected by the end of 2024, will confirm Government's view on the appropriate pathway(s) to deliver Clean Power by 2030. This in turn will set the necessary mix (by technology, capacity and location) of generation and storage we aspire to connect by 2030.

Our recommendations to Government on pathways to deliver Clean Power by 2030 indicate that we need 200-225GW of generation projects connected by 2030. Government's CP30 Plan can help ensure the efficiency of the new connections queue and that 'ready' and strategically aligned projects are connected efficiently to achieve clean power. This could be achieved through including capacity requirements for different technologies connecting at transmission and distribution networks, and that the pathways within CP30 clearly separate the proposed mix of transmission and distribution technologies, by capacity and location.

However, the transition to net zero emissions across the economy by 2050 does not stop with achieving clean power in 2030. Projects needed beyond 2030 are in development now and require clarity on their connection agreements too. This could be achieved through Government's CP30 Plan providing clarity on the pathway upon which connection offers can be based for the period 2031-35. We have proposed that the 2031 to 2035 pathway (referred to hereafter as the '2035 pathway) should be based on the Holistic Transition scenario within our Future Energy Scenarios 2024 (FES24)[7] to 2035, which would result in a need for up to c285GW of generation projects by 2035. We propose that the 2035 pathway also clearly separates the proposed mix of transmission and distribution technologies, by capacity and location.

We consider that including this 2035 pathway in the CP30 Plan will provide a 10-year time planning horizon for the reformed connections queue, thereby providing longer-term investment clarity that will help ensure an efficient transition towards Clean Power targets beyond 2030 (including the 6th Carbon Budget targets), whilst also facilitating an efficient transition to SSEP.

Note, for the purpose of this consultation, we have assumed that Government will endorse the above recommendations, particularly the inclusion of a 2035 pathway within the CP30 Plan . However, we also highlight high level options for if this were not to be the case.

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[7] Future Energy Scenarios (FES) | National Energy System Operator (neso.energy)

Longer-term, alignment with the first Strategic Spatial Energy Plan will be critical

Strategic Spatial Energy Plan (SSEP)

On 22 October 2024, UK, Scottish and Welsh governments formally commissioned NESO to produce GB's first Strategic Spatial Energy Plan (SSEP). The first SSEP will be a GB-wide plan that will map potential locations, quantities and types of electricity and hydrogen generation and storage infrastructure over time, modelled across a range of plausible futures. NESO will play a prominent, long-term role in GB's strategic energy planning. Through the SSEP, we will set out a coordinated approach for onshore and offshore energy infrastructure, aligning with our enduring connections strategy and planning to increase the efficiency of grid connections.

The development of the SSEP will be an iterative, comprehensive process that models and assesses options for meeting future demand scenarios in line with Government's net zero objectives. The viability of these options will be evaluated for technical feasibility, environmental impact, cost-effectiveness of energy generation and societal considerations. From this, we will develop proposed pathway options for the Energy Secretary, whose decision will form the basis of our public consultation on the draft SSEP. The SSEP will not focus on specific projects, leaving the energy market or subsequent processes to determine the specific projects and their respective specific locations.

The SSEP will also align with NESO's other strategic energy plans, including the Centralised Strategic Network Plan (CSNP) and the Regional Energy Strategic Plan (RESP), so we can help accelerate subsequent consenting and approvals for specific network solutions across GB. We are currently working with a range of stakeholders to develop the SSEP, with our first deliverable being the SSEP Draft Methodology that will be published for consultation in December 2024

Whilst the SSEP will provide this future strategic energy plan when it is introduced, we consider it critical that investors of projects that are seeking to connect to, or use, the transmission system in the interim period before SSEP are provided with the longer-term investment clarity that will help ensure an efficient transition towards Clean Power targets beyond 2030. It is also very important that we have a healthy longer-term pipeline of projects in the connections queue beyond those immediately aligned to the CP30 Plan pathway(s) to 2030, to provide more competition for services and liquidity into the market.

Once SSEP is published, we expect that it would set an additional pathway beyond the pathways in the CP30 Plan, to provide a further clear signal to investors.

Aligning to strategic planning will ensure that the **right projects are connecting in the right place, at the right time**. This will initially be by **technology, capacity and location** as aligned to Government's published CP30 Plan, and then in due course, to SSEP.

This will enable continuous delivery of latest Government policies.

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Connections reform has the following objectives and aligns to the Connections Action Plan

The objective of connections reform has therefore evolved to encapsulate the collective goal for government and wider industry to align with strategic energy plans (CP30 Plan and SSEP), and most immediately, to achieve a clean power system by 2030. This will include the right projects connecting at the right time and providing a transparent process for all projects to follow.

We recognise that alignment to the Connections Action Plan is crucial. Published in November 2023, this sets out six key areas of action for government, Ofgem, NESO, and the network companies to drive further action in reforming the connections process, and significantly reducing connection timescales.

These proposals for consultation address all six areas, as set out below.

	The Connections Action Plan's six key areas of action:	***Alignment to Connections Reform proposal***	
1	**Raise entry requirements** to **increase quality** of projects applying	Gate 2 (i.e., confirmed connection date / location and queue position) requires appropriate **land rights** and **alignment to Government's CP30 Plan** [8] Potential introduction of **financial instrument** to demonstrate projects' commitment to queue connection	Key change since April
2	**Remove stalled projects** to **release capacity**	Enhancement of **queue management milestones**, with contract termination if not met	
3	Better **utilise existing network capacity** to **reduce connection timelines**	Improvements to **network modelling tools** Considering introduction of future **new technical requirements** based on substation / bay utilisation efficiency	
4	Better **allocate available network capacity**, moving away from "first come, first served" approach	Capacity allocated primarily based on **Government CP30 Plan alignment** Introduction of **transparent parameters for prioritisation of projects** that deliver material additional system benefits e.g., projects critical to system operation	Key change since April
5	Improve **data and processes** to sharpen obligations and incentives	**Connection 360 portal** that provides customers with greater insight into GB connections landscape **Reduction of speculative applications** through transparent data on technology requirements and capacity availability by location	
6	Develop longer term connections process models **aligned with strategic planning and market reform**	Connections methodologies deliver **alignment to Government CP30 Plan** and are designed to **facilitate alignment with future strategic energy plans** e.g., SSEP	Key change since April

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[8] The Gate 2 criteria also include a route into the queue for projects that are outside the scope of the CP30 Plan and/or are NESO designated projects, as set out in the accompanying methodologies

We have engaged thoroughly on the connections reform design to deliver these objectives

The proposals set out in this document and the accompanying connections methodologies have been discussed externally and been informed by the following key activities.

Connections Industry Fora	We discussed the proposals with the Connections Process Advisory Group (CPAG)[9] and have received steer from the Connections Delivery Board (CDB).
Technology Design workshops	We collaborated with Transmission Owners (TOs), Distribution Network Operators (DNOs), Ofgem and Government in a number of workshops to consider a range of potential design options.
Data collection and analysis	To analyse the impact of designs we collected data from multiple sources, including a Request for Information (RfI)[10] to industry. We modelled this against CP30 Plan pathways to inform the design and alignment to achieving clean power.
Seminars and Webinars	We have followed an open and transparent engagement process with project developers and wider industry through seminars and webinars.

We are confident that the connections reform design that we are consulting on here appropriately **delivers the overall objectives for connections reform**, while **addressing the needs of key customers** in the process.

[9] https://www.neso.energy/industry-information/connections/connections-reform#Key-documents

[10] See accompanying draft Impact Assessment for more information on the Request for Information

Public

3. Overview of framework of codes and methodologies for connections reform

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The re-baselined TMO4+ process is passing through code governance

As outlined in our April 2024 publication (Update on implementation of reformed connections processes), the new TMO4+ process is passing through code governance as part of CMP434, CMP435 and CM095 [11]. As part of this, workgroups have been taking place over the last few months, to gather insights, challenge and input into the design of the aspects of the TMO4+ process which are proposed to be codified.

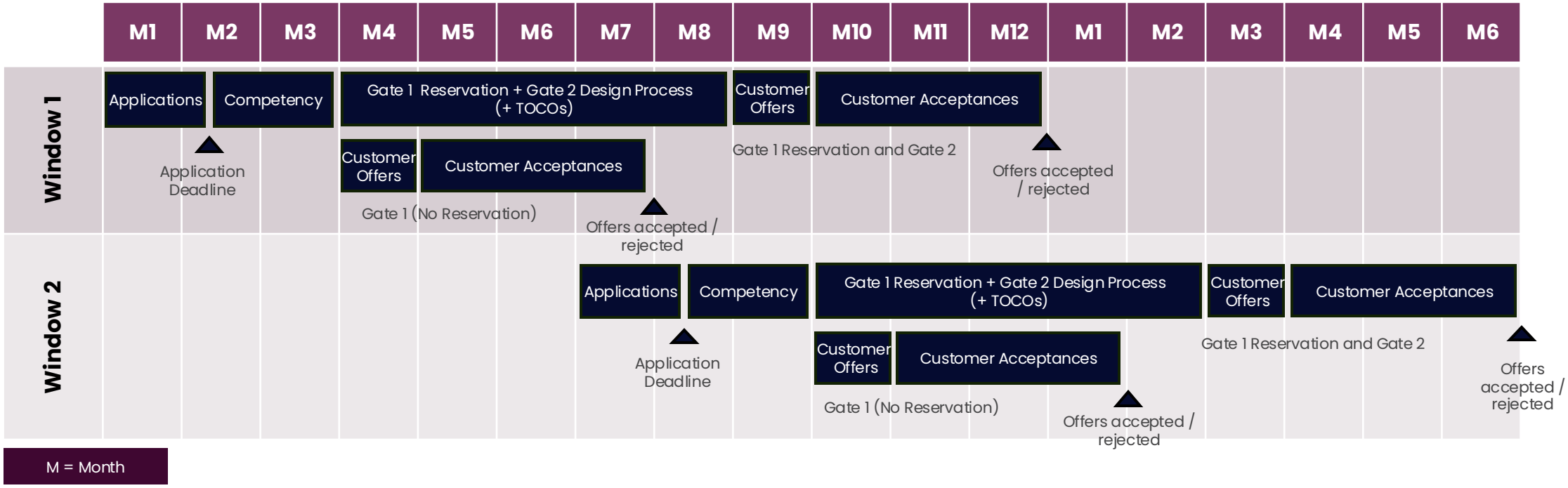
We have taken on feedback from the Workgroup consultation, and we have refined the TMO4+ process being proposed through the code modifications. Therefore, the core features of the aspects of TMO4+ which are currently in the process of being codified under our proposal [12] are as follows.

Core Feature
Combined Gate 1 and 2 application window process that is to open twice a year (as outlined on page 20), with Gate 1 as an optional stage. The opening of the application windows will be announced in a NESO published Gated Timetable.
Includes the potential for NESO to **reserve connection points and/or capacities** e.g. for long-lead time projects submitting Gate 1 Applications.
Introduces further ongoing compliance milestones for Transmission-connected Gate 2 Projects i.e. in respect of adjustments to Queue Management Milestones, and the introduction of Original Red Line Boundary compliance arrangements.
A **one-off 'Gate 2 to Whole Queue' exercise**, to transition all existing agreements into either Gate 1 agreements or Gate 2 agreements, depending on whether existing contracted projects have met the Gate 2 Criteria.
Tailored arrangements for embedded generation projects to ensure the process suitably reflects the interface between NESO and DNOs / Transmission Connected iDNOs in relation to the connection of embedded generation[13].

[11] CM096 was recently withdrawn as it was no longer required.
[12] Within the code modification process there are also 'Workgroup Alternative' proposals which will also be sent to Ofgem for consideration.
[13] Please note that the concept of 'Distribution Forecasted Transmission Capacity' is now being progressed through a Grid Code modification.

For new entrants, the TMO4+ process will be as follows, and take place twice a year

Whilst the month of "M1" remains to be confirmed in the Gated Timetable, the below demonstrates that the end-to-end process is expected to take up to a year and will provide developers with an opportunity to apply every six months.



Note that the process for "Gate 2 to Whole Queue" from Q2 2025 will be based on the same activities as shown above, albeit with variations (e.g., timing of stages may differ). Further details on the specific stages and timings for 'Gate 2 to Whole Queue' will be shared in due course.

An additional financial instrument may also be introduced as part of connections reform

The current connections process allows some project developers to secure a place in the connections queue without making a substantial financial commitment, leading to the entry and persistence of 'speculative re-seller projects', many of which do not ultimately connect. By 'speculative re-seller projects' we mean project developers that secure connection agreements for a portfolio of projects (3 or more) with a view to selling as many projects as possible. Often many of these projects remain unsold and therefore don't progress or take a long time to be sold. These 'speculative re-seller projects' cause connection delays, resource wastage, and inefficient use of scarce connection capacity, which in turn hinders progress towards net zero and efficient network planning and delivery.

We are considering proposing a new financial instrument for projects passing Gate 2, with the objectives of:

- Incentivising the development and utilisation of allocated connection capacity
- Deterring 'speculative re-seller projects' from congesting the connection queue
- Facilitating progress towards net zero and efficient transmission planning
- Avoiding imposing financial barriers on genuine projects intending to connect and use capacity

Our current thinking is that any such financial instrument would need be introduced via an additional element to the current User Commitment arrangements. Any such additional financial instrument would need to be introduced via a new urgent code modification (to the CUSC) if it were to be in place in time for the Gate 2 to the whole queue exercise from Q2 2025.

Following recent feedback from industry on our initial proposals we are considering the most appropriate approaches for whether and/or how a new financial instrument could deliver the above objectives most efficiently.

We will set out further detail soon, including where relevant a detailed plan. We have recently published a Call for Input to seek more evidence before deciding on next steps.

For the avoidance of doubt, we are not consulting at this stage on whether or how to introduce an additional financial instrument. If we decide to introduce an additional financial instrument, then this would be introduced via a new urgent code modification that would be subject to standard code governance and consultation with industry before any final modification report would be submitted to Ofgem.

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Connections Reform will also be enabled through licence changes

The move to a more strategic approach to developing the energy system, led by government ambition for delivering Clean Power by 2030 (and followed by the SSEP), will require further changes to licences[14] and likely new licence conditions. These will ensure that suitable obligations are in place to underpin this reformed regulatory framework for connections.

Ofgem announced in its 16 September 2024 open letter[15] the intention to consult on such new and modified licence conditions to enable the implementation of a reformed connections process. In our view, Ofgem's open letter clearly aligns with and supports our course of action for connections reform. This includes facilitating the transition to a net zero energy system, promoting economic growth, enabling timely connections to the electricity system, prioritising ready projects in line with strategic planning, maintaining security of supply, and upholding principles of openness, and transparency.

Specifically, Ofgem's open letter proposes that we develop, consult on and maintain the following connections methodologies:

1. Gate 2 Criteria Methodology
2. Connections Network Design Methodology (CNDM)
3. Project Designation Methodology

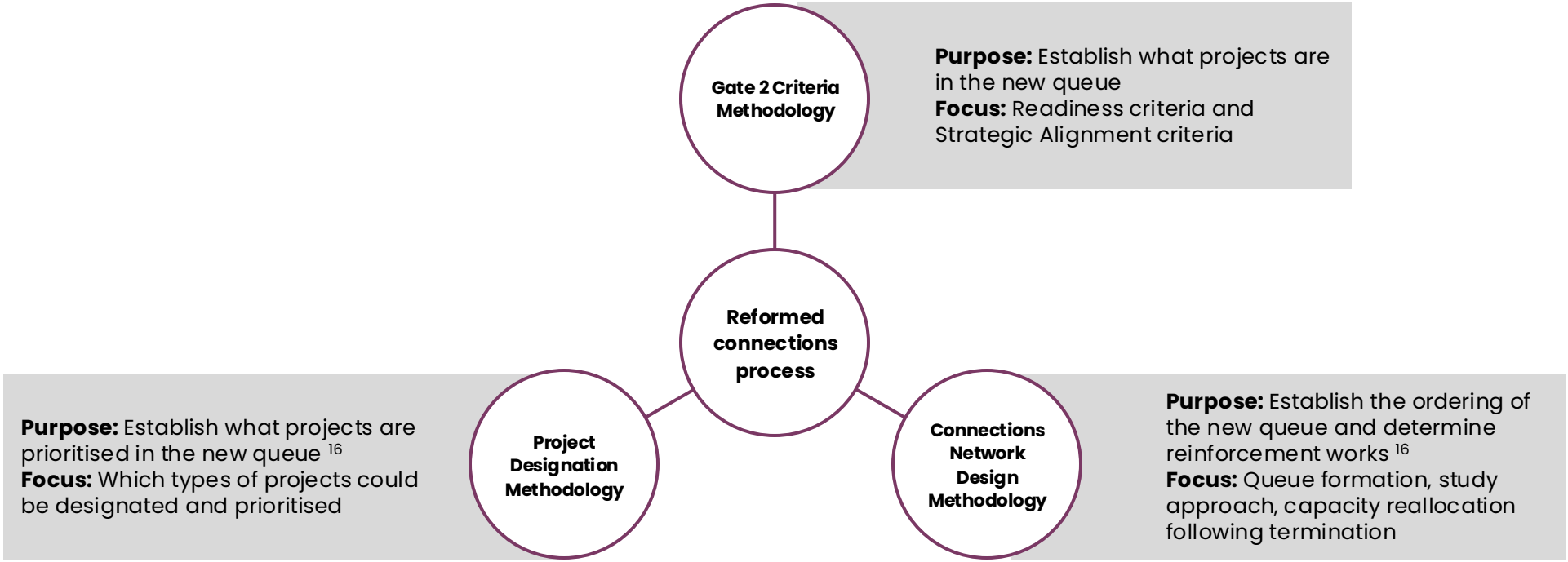
[14] It is important to note that Ofgem is concurrently conducting consultations on licence changes.

[15] Open letter on the reformed regulatory framework on connections | Ofgem

How the connections methodologies will operationalise the reformed connections process

The connections methodologies are intended to ensure that:

- Projects meeting the Gate 2 criteria are connected to the electricity system in a timely and efficient manner.
- Connection offers and contracts consider the broader strategic energy and network planning of the GB energy system.
- Offers promote economic and efficient network investment while enhancing the ability of network companies to coordinate wider and enabling works considering the contracted background.



[16] Project Designation Methodology and the Connections Network Design Methodology both inform NESO's ultimate decision as to whether a project has met the Gate 2 strategic alignment criteria and therefore whether it receives a confirmed connection date/location and place in the new connections queue.

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4. Key building blocks for aligning connections to strategic energy plans

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Key building blocks to align connections reform with strategic energy planning

We have considered a set of variables, and options within each variable, to align the reformed connections process to strategic energy planning.

The below demonstrates the key building block options we have considered, with NESO's preferred option highlighted, having considered the pros and cons of each. The following section provides more detail on the recommendation and rationale for not recommending the other options; this forms the basis of the policy positions set out in this consultation.

	Variable	Definition	Options		
1	**Time horizon for determining "aligned" project**	Under what time horizon is alignment considered	2030	2035	2035+
2	**Approach for managing scope of the new queue**	How we determine the size and make-up of the new queue	Readiness based	CP30 Plan aligned projects prioritised, then followed by any other 'ready' projects	Only 'ready' CP30 Plan aligned projects or 'ready' projects not known or out of scope of CP30

Final recommendation, as included in consultation

Other assessed options

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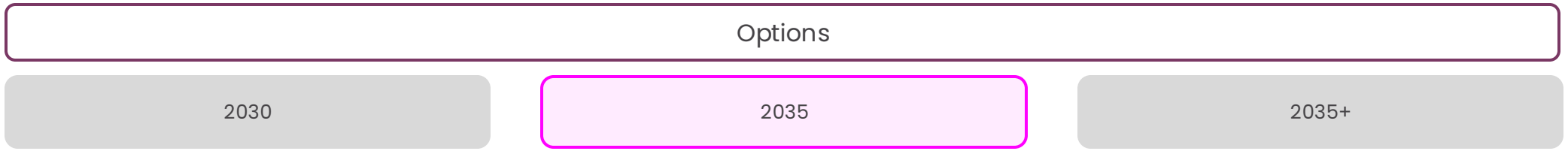
Our preferred options under each key building block

1. Time horizon for determining "aligned" project



As set out on page 14, **we have recommended to Government in our CP30 Report that in addition to pathway(s) to 2030, there would be benefits in Government's CP30 Plan providing clarity on the pathway upon which connection offers can be based for the period 2031-35. We have proposed that the 2031 to 2035 pathway should be based on the Holistic Transition scenario within our Future Energy Scenarios 2024 (FES24) to 2035.**

We consider that including this 2031-35 pathway in the CP30 Plan will provide a 10-year time planning horizon for the reformed connections queue, thereby providing longer-term investment clarity that will help ensure an efficient transition towards Clean Power targets beyond 2030 (including the 6th Carbon Budget targets), whilst also facilitating an efficient transition to SSEP.

Including this 2035 pathway in the CP30 Plan would allow NESO to issue firm connection dates and queue positions to projects aligned to the 2035 pathway, in the knowledge that this mix of projects aligns with Government's longer-term plan.

If Government does not include a 2035 pathway in the CP30 Action Plan, then the 2030 pathway(s) in the CP30 Action Plan would provide a 5-year time planning horizon. We do not consider that a 5-year time horizon would be sufficient for the reformed connections queue as it would risk hiatus in development of, and investment in, the pipeline of projects needed beyond 2030, ultimately risking our efficient transition towards Net Zero. As such, we consider that we would need to include projects in the reformed connections queue that have a time horizon beyond the 2030 pathway(s) in the CP30 Plan.

Our preferred options under each key building block

2. Approach for managing scope of the new queue (1/6)

Options		
Readiness based	CP30 Plan aligned projects prioritised, then followed by any other 'ready' projects	Only 'ready' CP30 Plan aligned projects or 'ready' projects not known or out of scope of CP30

We recommend that the **new connections queue should be based on 'ready' projects that are aligned to the CP30 Plan**. We consider that this will enable efficient delivery of the Government's strategy to achieve clean power for GB by prioritising the connection of the mix of projects (by technology, capacity and location) that are set out within the pathways in the CP30 Plan.

This leads to two key questions - what arrangements should be in place for 'ready' projects that either:

a) exceed the capacity (by technology and location) set out in the pathways in the CP30 Plan; or

b) were unknown at the time of the CP30 Plan or are beyond its scope, but that would provide material benefits to consumers.

Our preferred options under each key building block

2. Approach for managing scope of the new queue (2/6)

a) 'Ready' projects that exceed the capacity (by technology and location) set out in the pathway in the CP30 Plan

Our position on this element depends on the time horizon for the pathway(s) in the CP30 Plan (as set out in variable 1).

If the CP30 Plan also includes a 2031-35 pathway

If the CP30 Plan also includes a 2031-35 pathway, then our recommendation is that the new reformed connections queue should be primarily formed of 'ready' projects (i.e., projects that meet the readiness element of the Gate 2 criteria) that are aligned to either the 2030 pathway(s) or to the 2035 pathway set out within the CP30 Plan.

This would allow NESO to issue firm connection dates and queue positions to projects aligned to both the 2030 pathway(s) and the 2035 pathway, knowing that this mix of projects aligns with Government's longer-term plan and can therefore help deliver an efficient transition to meeting the 6th Carbon Budget targets and the first SSEP.

Our preferred options under each key building block

2. Approach for managing scope of the new queue (3/6)

Other options considered

Including 'ready' projects in the new reformed connections queue that exceed the capacity (by technology and location) set out in the 2035 pathway within the CP30 Plan would mean that those additional projects would hold a Gate 2 contract, with a confirmed connection date and location. Our accompanying draft impact assessment publication sets out that if we included all such 'ready' projects in the new reformed connections queue between now and the introduction of the first SSEP, this could result in up to c.220GW of 'ready' projects in the new queue beyond the scope of the 2035 pathway, with connection dates potentially into the 2040s. The total queue length could therefore be c500GW at that point.

It is highly unlikely that many, or perhaps even most, of the up to 220GW of projects beyond the scope of the 2035 pathway would align with SSEP, given that:

i. projection from our FES24 Holistic Transition scenario indicates that c380GW of generation, interconnection and storage may ultimately be required by 2050;
ii. SSEP will set spatial parameters and locational elements for the future energy mix, which may differ materially from any projects in the queue beyond the 2035 pathway; and
iii. much of the up to c220GW of additional 'ready' projects in the queue may be short-duration storage, most of which is highly unlikely to be required even by 2050 given the projection from our FES24 Holistic Transition scenario. See our accompanying draft Impact Assessment for more information on this.

Furthermore, in our view, the mix of connections (by capacity, technology and location) required for the period beyond 2035 should be aligned with the SSEP when it is published by Government (late 2026), rather than set in 2025. Before the SSEP, there will be no clarity on the optimal mix, and therefore which projects might be required in the connections queue, beyond 2035. Once SSEP is published, it would be expected to include a clear post-2035 pathway, providing clear signals to investors for the connections queue in the post 2035 period.

We therefore do not consider that it would be in either GB consumers or project developers' interests to allow further 'ready' projects that exceed the capacity (by technology and location) set out in the 2035 pathway within the CP30 Plan into the new reformed connections queue.

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Our preferred options under each key building block

2. Approach for managing scope of the new queue (4/6)

Other options considered (continued)
If we were to retain the connection dates and locations of the up to 220GW of 'ready' projects in the connections queue beyond the 2035 pathway, then any projects required for the SSEP, but not already in the connections queue, would need to take a queue position behind those 2035+ projects. This would delay any additional SSEP aligned projects' connection dates materially beyond 2035 or even beyond 2040, which would not support efficient delivery of SSEP or necessary investment.

Additionally, retaining the contracts and queue positions of projects beyond the 2035 pathway would significantly reduce the benefits SSEP could deliver to consumers by preventing the SSEP from setting the optimal mix of projects to connect beyond 2035, by capacity, technology and location. This could, for example, create significant additional costs or other negative impacts for consumers because of inefficient network build, additional system balancing costs and adverse environmental and community impact.

Therefore, if we were to allow the connections queue to exceed the capacity (by technology and location) in the 2035 pathway in the CP30 Plan, our view is that projects beyond that 2035 pathway would need to take the risk of material misalignment with the SSEP. In practice this would mean that developers of projects in any new, reformed connections queue that included more capacity (by technology and location) than the 2035 pathway in the CP30 Plan may see their project pushed further down the queue once SSEP is introduced (i.e., delaying its connection date, potentially into the 2040s), or removed from the queue entirely (e.g., if a project is in a location or technology not required under SSEP).

We do not consider that this is an appropriate risk for those project developers to take as this would lead to significant uncertainty for investors. It would also require retrospective action (and further code change) once SSEP is introduced to reorder or reduce the post-2035 connections queue.

Our preferred options under each key building block

2. Approach for managing scope of the new queue (5/6)

If the CP30 Plan is only based on 2030 pathway(s):
If the CP30 Plan is only based on 2030 pathway(s), then we would want to mitigate the risk (as set out on page 26) of a 5-year time horizon for the reformed connections queue. To mitigate that risk would be to allow projects that that exceed the capacity (by technology and location) set out in the 2030 pathway(s) into the new queue.

In practice, the most appropriate way to do this might be to first prioritise projects aligned to the CP30 Plan pathway(s) (i.e., prioritise those projects in the connections queue), then populate the remainder of the connections queue with other 'ready' projects.

However, this approach would carry the same risks set out in the previous pages of material misalignment between the projects in the new queue that go beyond the 2030 pathway(s) and the first SSEP, i.e., we could still end up with c500GW of 'ready' projects in the new queue by the time SSEP is introduced, much of which may not align with SSEP.

For the reasons set out earlier, we don't think consumers should take the risk of material misalignment between the new queue and the SSEP. In practice, this would mean that developers of any projects in a new, reformed connections queue that go beyond the capacity (by technology and location) of the 2030 pathway(s) in the CP30 Plan may therefore see their project pushed further down the queue once SSEP is introduced (i.e., delaying its connection date, potentially into the mid 2030s or even 2040s), or removed from the queue entirely (e.g., if a project is in a location or technology not required under SSEP).

In order to reduce the impact of this risk, **If the CP30 Plan is only based on 2030 pathway(s), we could seek to create a material upfront allowance for attrition against the pathway(s) in the CP30 Plan to 2030, e.g., add 20-50% capacity to the top end of the capacity (by technology and location) specified in the CP30 Plan pathway(s), and limit connections to that upfront allowance**. In practice, given the additional network build involved to connect those projects, it would probably ensure a pipeline of projects to connect between 2031-35. However, such an approach would not allow for the variety of different technologies, capacities and locational specificity associated with a 2035 pathway, so it would be a materially sub-optimal approach overall compared to including a 2031-35 pathway within the CP30 plan.

Our preferred options under each key building block

2. Approach for managing scope of the new queue (6/6)

b) 'Ready' projects that were not known at the time of the CP30 Plan or that are otherwise outside the scope of the CP30 Plan:
The following types of project fit into this category:

i. **Demand projects**[17]**:** many types of demand project may sit outside the scope of the CP30 Plan, as it is based primarily on modelling of generation and storage technologies, and mostly considers demand at an overall GB level. Despite being outside the scope of the CP30 Plan, these demand projects support GB's industrial strategy and ensure a quicker transition towards net zero across all areas of the GB economy;

ii. **Projects that are critical to security of supply or system operability, including projects procured by NESO via competitive tender (e.g., Network Services Procurement**): there may be projects that are identified after the CP30 Plan is published that are not included within its scope, but that would deliver material benefits to GB consumers, for example in terms of managing security of supply or system operability. This includes projects that NESO procures via competitive tenders; due to the competitive nature of the procurement exercise to determine these sorts of projects, the specific nature of the projects may not be known at the time of the CP30 Plan;

iii. **New technologies and/or highly innovative projects:** projects may come forward seeking inclusion within the connections queue that either: a) do not correspond with a technology that has been specified within the CP30 Plan (if for example the technology is new or was not expected to be deliverable by 2030 or 2035) but would provide benefits for GB consumers; and/or b) are within a technology, (e.g. 'Wind' or 'Nuclear') that has been specified within the CP30 Plan but is a novel sub-type which has been successfully developed and demonstrated, is considered commercially viable and would provide benefits for GB consumers.

iv. **projects with very long lead time times (i.e., long design, consenting and construction periods) that may be needed beyond the time horizon of the pathway(s) in the CP30 Plan:** before the first SSEP, projects may come forward seeking inclusion within the connections queue that have very long lead times (i.e., long design, consenting and construction periods) that may be needed beyond the pathways within the CP30 Plan. Potential examples might be nuclear projects (for example potentially Sizewell C) or long duration storage projects. If these projects can provide benefits to GB consumers, then they should be allowed into the connections queue.

We therefore propose:

i) that types of directly connected transmission demand projects that are outside the scope of the CP30 Plan can be included within the new reformed connections queue if they also meet the readiness element of the Gate 2 criteria; and

ii) to use the Designated Projects methodology to identify any projects in categories ii), iii) and iv) above. If designated by NESO, any such projects would be included within the new reformed connections queue if they also meet the readiness element of the Gate 2 criteria.

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[17] Distribution-connected (embedded) demand projects are outside the scope of connections reform and therefore wouldn't go through the TMO4+ process and therefore do not need to be considered here

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5. Our overall preferred connections reform design

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Combining the building blocks into an overall design

We created a range of possible designs based on different combinations of options across the two building blocks set out earlier (variables 1 and 2). We set out below three of these designs:

Three potential overall designs

1

New queue formed of:

i) 'ready' projects already in the queue

ii) 'ready' NESO designated projects

iii) then, any new 'ready' projects that 'align with' the CP30 Plan are prioritised In future Gate 2 windows

2

New queue is formed of:

i) 'ready' projects 'aligned with' the CP30 Plan

ii) 'ready' projects not known at time of the CP30 Plan or otherwise outside scope of CP30 Plan

Our preferred design

3

New queue is formed of:

i) 'ready' projects 'aligned with' the CP30 Plan

ii) 'ready' projects not known at time of the CP30 Plan or otherwise outside scope of CP30 Plan

iii) any other 'ready' projects

Choosing how to align with strategic energy plans

There are different routes to aligning the connections process with strategic energy plans. NESO's view is that the reformed connections process should limit projects in the reformed queue to those which are 'ready' and aligned with the strategic energy plan in place at the time (initially the CP30 Plan and later SSEP) or to 'ready' projects that were not known at the time of the CP30 Plan or that are otherwise outside the scope of the CP30 Plan.

This is overall design 2.

The alternatives are:

- 'ready' projects in the current queue are offered a connection in the reformed queue and new 'ready' projects must align with the plan (this is overall design 1); or
- connections offers would be made on a prioritised basis to projects which are aligned with the CP30 Plan. Other projects that are 'ready' but not aligned with the plan, would be offered a Gate 2 connection offer and a place in the new reformed queue, but behind projects aligned with the plan (this is overall design 3).

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Combining the options into an overall design

We have assessed these three overall designs against the CDB's assessment criteria, along with supplementary criteria, to ensure a holistic end-to-end analysis to inform our final recommendation. This assessment is shown in Appendix E.

In September 2024, we presented our views to CDB along with our **recommendation for overall design 2**.

In this document and the associated connections methodologies, our primary focus is therefore on overall design 2, as we believe it establishes the right balance between readiness and strategic requirements. However, we have also included analysis on overall designs 1 and 3, to enable informed consultation responses.

The following pages outline how overall designs 2 and 3 would work in practice, including an analysis of the potential impacts, benefits, and risks associated with each. While further information on overall design 1 can be found in Appendix D, it is not discussed extensively in the main body of this document due to the significant risks and challenges associated with it.

Overall design 2: Overview (our preferred option)

New queue is formed of i) 'ready' projects aligned to the pathways in the CP30 Plan; ii) 'ready' projects that were not known at the time of the CP30 Plan or that are otherwise outside the scope of the CP30 Plan;

Under overall design 2, alignment to the CP30 Plan pathways would apply to the "Gate 2 to the whole queue" exercise beginning in Q2 2025. More specifically, the new queue would be formed only of 'ready' projects aligned to the pathways in the CP30 Plan, 'ready' designated projects and 'ready' transmission-connected demand projects outside the scope of the CP30 Plan.

Any other 'ready' projects, i.e., 'ready' projects of a capacity, technology and location outside of the pathways from the CP30 Plan (as well as any other projects that do not meet the Gate 2 readiness requirement) would receive a Gate 1 contract [18].

In line with our preferred options under each key building block, we have based overall design 2 on **the CP30 Plan including a pathway from 2031 to 2035,** which can be used as the basis for issuing connections offers for projects in that period[19].

As such, the new reformed **connections queue under overall design 2 would be primarily formed of 'ready' projects** (i.e., projects that meet the readiness element of the Gate 2 criteria) **that are aligned to the 2030 pathway(s) or to the 2035 pathway set out within the CP30 Plan**. In practice the combination of these pathways would allow for a queue of up to c285GW by 2035 (excluding any projects in category ii) above).

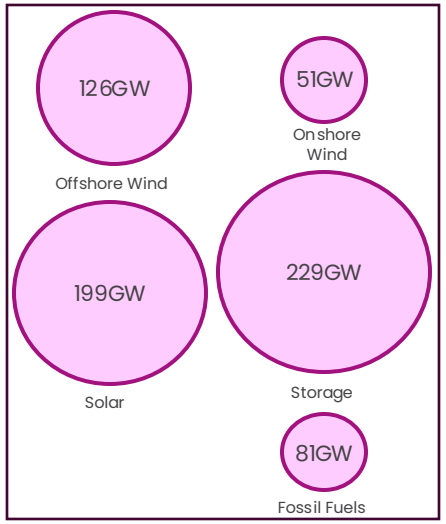
Note that under overall design 2, NESO will ensure that projects already under construction and due to commission in 2026 or earlier will not be adversely impacted by aligning the queue to the CP30 Plan. Further details are set out in the CNDM.

[18] DNOs/Transmission Connected iDNOs applying on behalf of Small/Medium Embedded Generators will not receive a Gate 1 contract if they do not meet the Gate 2 readiness requirements.

[19] We have set out on pages 41 and 42 the mitigations we could take if the CP30 Plan does not include a 2031-35 pathway.

Overall design 2: How Gate 2 to the whole queue would work

Current queue

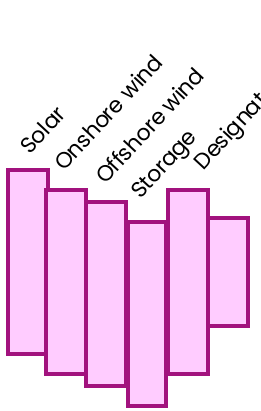


Projects assessed by technologies & locations

Projects ordered based on their relative current queue order in line with technology/location/capacity pathways set by CP30 Plan

1. Projects apply to Gate 2

2. Apply Gate 2 Readiness criteria



3. Apply technology / capacity / locational limits in line with CP30 Plan pathways

Projects outside of the limits in the CP30 Plan 2031-35 pathway or that don't meet other Gate 2 criteria receive a Gate 1 indicative offer

Other projects are at Gate 1 and have indicative dates.

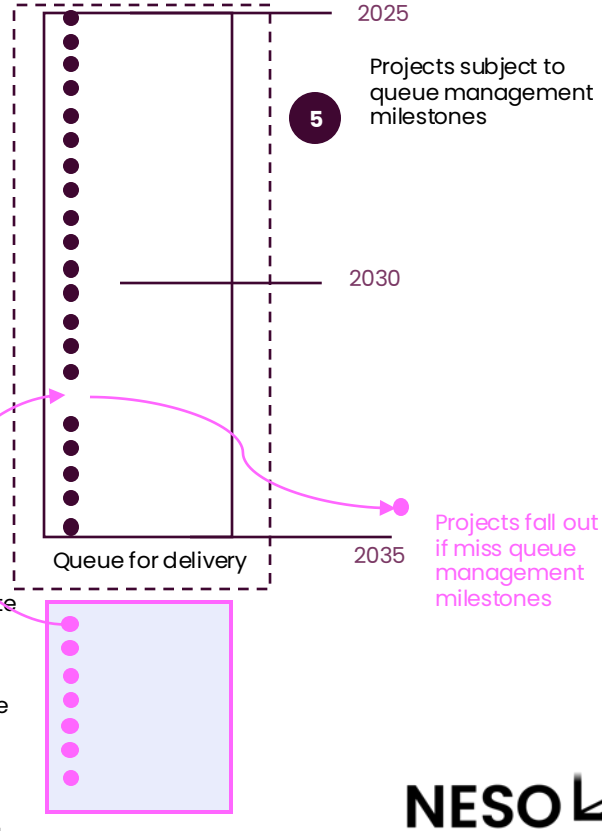
Projects can pass Gate 2 in future windows and receive a firm date / queue position if meet Gate 2 'readiness' criteria and:

i. Fill an undersupplied technology ; or
ii. Designated project; or
iii. Transmission-connected demand outside scope of CP30; or
iv. Needed for SSEP1 pathway

New queue

Provide Connection Dates

4. Establish Connection Date



5. Projects subject to queue management milestones

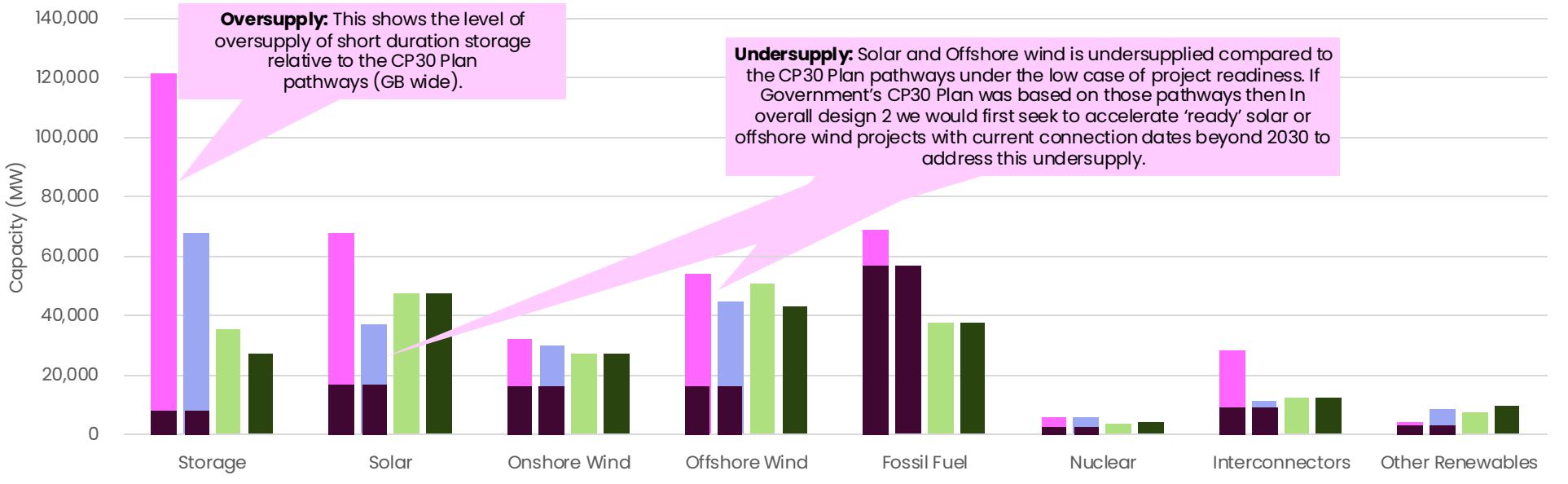
Projects fall out if miss queue management milestones

Note that this diagram also shows how additional variables (e.g., managing oversupply or undersupply) could work.

Overall design 2: Alignment with CP30 Plan pathways to 2030 in our CP30 Report

This graph shows the potential "ready" queue with connection dates to 2030 compared to the 2030 pathways in NESO's CP30 Report. It includes a high case (full current queue) and low case (RFI respondents who said they met the readiness criteria in June) 'readiness' estimate of the revised connections queue. Note this graph does not take account of ready projects with current post-2030 connection dates that could be accelerated to fill any undersupply. Please see the accompanying draft impact assessment for further graphs that take this and other factors into account.

Figure 3. Connections Queue to 2030, compared to 2030 pathways in NESO's CP30 report



Current Built Capacity: Current built generation capacity [20]

Full Queue to 2030: The connections queue with connection dates from now until the end of 2030 including transmission and distribution.

Low case: The connections queue until the end of 2030, based on project capacity for those that responded to the RfI and stated that they had land at time of RfI (June 24) [21]

CP30 Plan pathways: CP30 Plan pathways generation capacity per technology

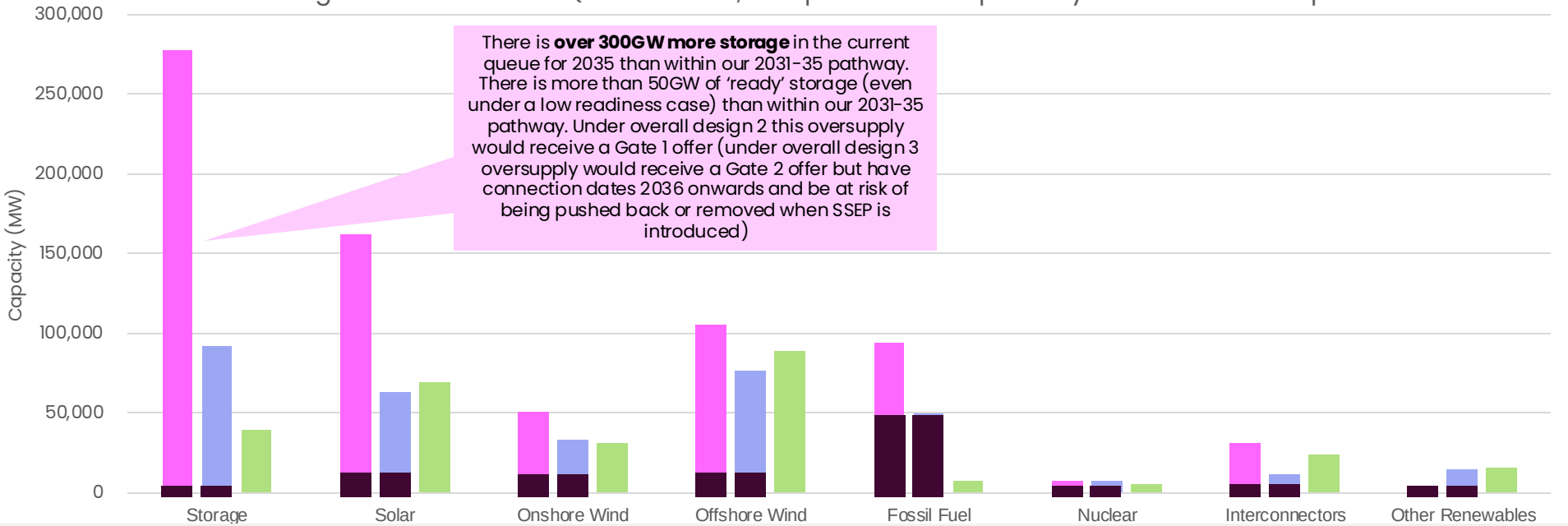
[20] *Exception for Nuclear. Built projects is adjusted to only include Sizewell B (only project online in 2030). For low case, known Nuclear projects with land which is deemed more accurate than RFI.*
[21] *Exception for low case; for offshore wind, crown estate lease data has overridden RfI data as is deemed to be more accurate. Low case only includes projects with a full seabed lease.*

Data journey: *The data modelling is based on a variety of data sources which NESO have collected for connections – see in Appendix C*
Assumptions: *The data model does have limitations and has assumptions applied - see Appendix C*

Overall design 2: Alignment with CP30 pathway to 2035 in our CP30 report

This graph shows the estimated "ready" queue with connection dates to 2035 compared to the 2035 pathway in NESO's CP30 report. It includes a high case (full current queue) and low case (RFI respondents who said they met the readiness criteria in June) 'readiness' estimate of the revised connections queue. Note, this graph does not take account of ready projects with current post-2035 connection dates that could be accelerated to fill any undersupply. Please see the accompanying draft impact assessment for further graphs.

Figure 4. Connections Queue to 2035, compared to 2035 pathways in NESO's CP30 report



Current Built Capacity: Current built generation capacity [22]

Full Queue to 2035: The connections queue with connection dates from now until the end of 2035 including transmission and distribution.

Low case: The connections queue until the end of 2035, based on project capacity for those that responded to the RfI and stated that they had land at time of RfI (June 24) [23]

2035 pathway: Capacity in 2035 from the 2035 pathway in NESO's CP30 report

[22] *Exception for Nuclear. Built projects is adjusted to only include Sizewell B (only project online in 2035). For low case, known Nuclear projects with land which is deemed more accurate than RFI.*
[23] *Exception for low case; for offshore wind, crown estate lease data has overridden RfI data as is deemed to be more accurate. Low case only includes projects with a full seabed lease.*

Data journey: *The data modelling is based on a variety of data sources which NESO have collected for connections – see in Appendix C*
Assumptions: *The data model does have limitations and has assumptions applied - see Appendix C*

The current queue to 2035 has over **double the capacity** than what is required within our **proposed 2031-2035 pathway** (c285GW).

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Overall design 2: Benefits

As set out earlier, NESO's recommendation is for **overall design 2.** We consider that this recommendation, if taken forward, would ensure better outcomes for GB consumers.

Benefits
Ensures **projects aligned with strategic energy plans** (CP30 Plan and in due course SSEP) are **prioritised** in the new connections queue to deliver an **efficient, secure and operable system for Clean Power by 2030** and an efficient **transition to the 6th Carbon Budget targets** (if the CP30 Plan includes a 2031-35 pathway).
Provides project developers and investors with **clarity on the types of projects that will most efficiently deliver GB's net zero ambitions** (to the period covered by the pathways in the CP30 Plan), within a **transparent, objective, and simple end-to-end process**, whilst minimising and coordinating interventions to the connections queue and process.
Ensures **network companies design and build economic and efficient coordinated networks** (to the period covered by the pathways in the CP30 Plan), focusing on the projects most aligned to the CP30 Plan, ensuring that those **projects can connect more quickly**.
Supports an **efficient transition to SSEP** by not allowing the new reformed connections queue to exceed the capacity (by technology and location) set out in the 2035 pathway in the CP30 Plan. This therefore: • **Protects consumers** from the risk of projects that align with / are needed by SSEP sitting behind other projects / being **delayed** by those projects. • Ensures **efficient network design and build**, lowering system balancing costs and appropriately managing environmental and community impact. • **Protects project developers** from the risk of retrospective action to the new queue to remove or deprioritise projects that are not aligned with / not needed by SSEP.

Overall design 2: Risks and Mitigations (1/2)

Although overall design 2 offers significant benefits, we must also acknowledge and address the associated risks, for which we have outlined corresponding mitigation actions:

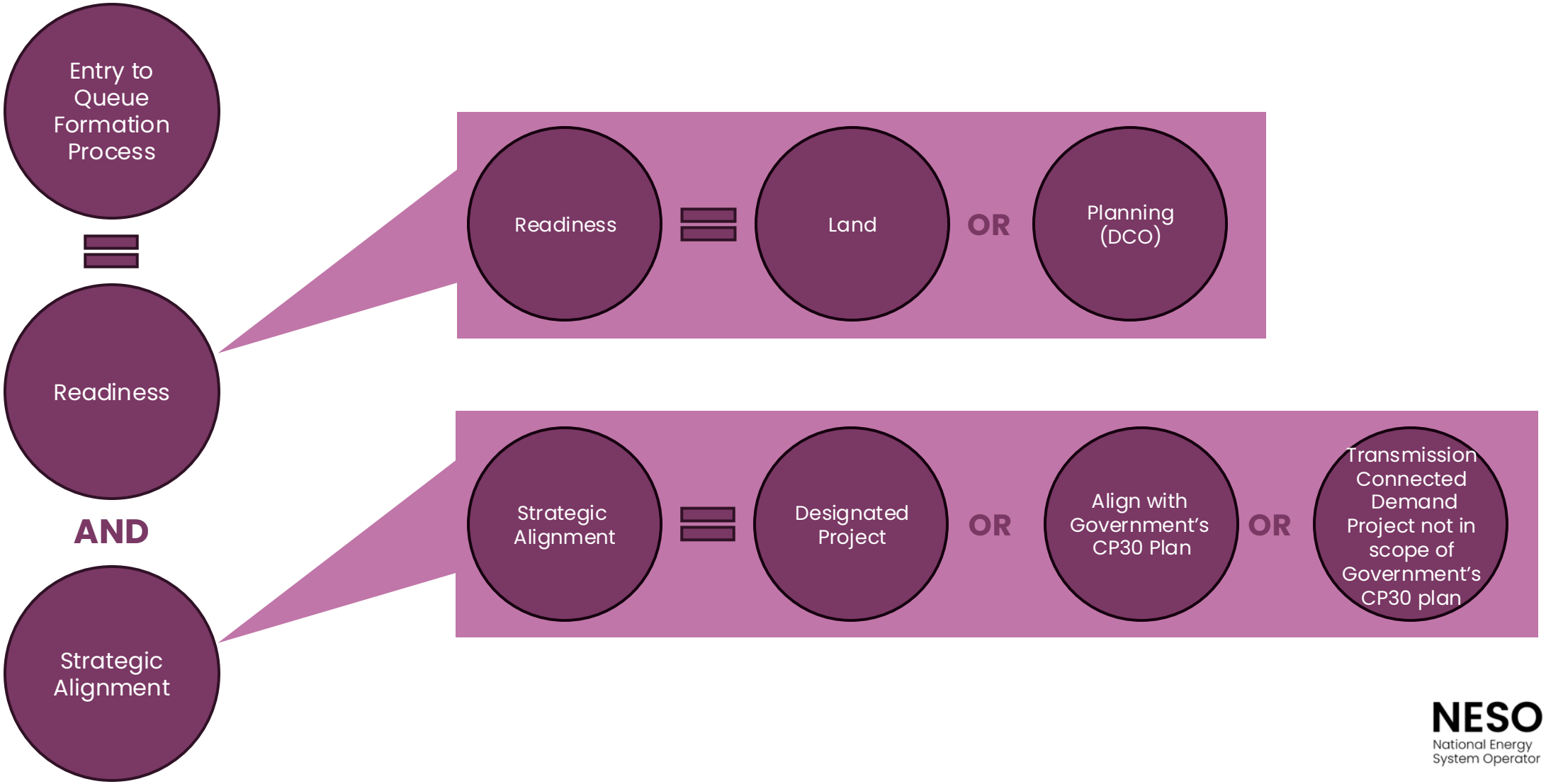
Risks	Mitigation actions
Risk of **reducing overall investment appetite and liquidity** in certain project technologies (those technologies / locations / capacities not aligned with the CP30 Plan), which may be valuable for stimulating competition and delivering savings/innovation to consumers.	• The **inclusion of projects aligned to the 2031-35 pathway**, and arrangements to manage undersupply against the 2030 pathway(s), should mitigate this risk as this increases the number of projects that can connect in the late 2020s or early 2030s (e.g., it is possible that some projects in the 2031-35 pathway could be connected earlier than 2031). Also important to note that NESO's proposes to use the top of the range figure if Government chooses more than one 2030 pathway and the 2035 pathway itself reflects the highest FES scenario, thereby adding more projects and liquidity to the new queue. • **SSEP's introduction**, and the creation of new/additional pathway should create **additional liquidity** between 2031-2035 and beyond. *Note: while overall designs 1 and 3 include more projects in the new queue than overall design 2, this does not necessarily mean that those additional projects could compete in the market with projects in the 2030 pathway(s) in the new queue. For example, under overall design 3, additional projects would be at the back of the queue (with 2036+ dates) and be unable to compete in the market with projects towards the front of the queue (with pre 2030 dates).*
Risk of **undermining investment appetite** in certain technologies and/or **increasing financing costs** by not including all 'ready' projects in the new connections queue.	We consider that this is mitigated by various factors: • Positive effect for investors of the accelerated connection of significant capacity (280GW+) of 'ready' projects that align with the CP30 Plan pathway to 2035. • Clear criteria and information provision for how projects can meet the Gate 2 criteria in future to address undersupply or replace projects that have exited the queue, or be designated by NESO. • 10-year investment horizon of the new connections queue and the relatively short period until SSEP is introduced and sets a new/additional pathway.

Overall design 2: Risks and Mitigations (2/2)

Although overall design 2 offers significant benefits, we must also acknowledge and address the associated risks, for which we have outlined corresponding mitigation actions:

Risks	Mitigation actions
Risk of **challenge from project developers** or **uncertainty in the industry**, reducing **overall investment appetite** due to lack of clarity on which projects align to the CP30 Plan pathways (and in due course SSEP). This needs to be **justifiable and transparent.**	We consider that this risk is mitigated through a combination of the CP30 Plan (once published), this document and the connections methodologies: Gate 2 Criteria Methodology, Project Designation Methodology and Connections Network Design Methodology (CNDM).
Risk that the **CP30 Plan does not include a 2031-2035 pathway**	If the CP30 Plan does not include a pathway beyond 2030, we will **re-consider our approach to the overall connections reform design** that we recommend to Ofgem. Our options include: • Create a material **upfront allowance for attrition** against the pathway(s) in the CP30 Plan to 2030, e.g., add 20-50% capacity to the top end of the capacity (by technology and location) specified in the CP30 pathway(s). In practice, given the additional network build involved to connect those projects, it would ensure a pipeline of projects to connect between 2031-35; or • **Recommend overall design 3** to Ofgem, to ensure that the new connections queue has sufficient projects to meet the potential needs between 2031-35 (we would only recommend this if we found appropriate mitigations to the risks associated with overall design 3 as set out on pages 52-53).

Overall design 2: Overview of the Connections methodologies: Entry to reformed queue



Overall design 2: Overview of the Connections methodologies (1/3)

Overall design 2 would be implemented in the following way through the connections methodologies[24]:

Gate 2 Criteria Methodology

Sets out the Gate 2 criteria that projects need to meet and sets out how projects will need to demonstrate that they have met these criteria, to be allocated a confirmed connection date and location in the new connections queue.

1. Readiness criteria:
Land:
- Meet Minimum acreage requirements (or Offshore equivalent); and
- Provision of Original Red Line Boundary for site on which project is located; and
- Secured Land Rights

Or Planning :
- Submission of (and validation of) application for planning consent for projects following the Development Consent Order (DCO) process.
- If following the Planning route, the meeting Minimum acreage and provision of Original Red Line Boundary for site on which project is located requirements must be provided as part of evidence of meeting Queue Management Milestone M2.

And

2. Strategic alignment criteria:
- Be aligned with the pathways within the CP30 Plan; or
- Be a designated project under the Project Designation Methodology; or
- Be a transmission connected demand project not in the scope of the pathways within the CP30 Plan

3. Once a project has met Gate 2 and the project developer has signed the Gate 2 Connection Offer, there will be ongoing compliance requirements regarding the land and planning. These obligations are set out in CUSC Section 16 and expanded on further in the Queue Management Guidance. However, Embedded Power Stations' Queue Management Milestones and ongoing land compliance requirements will continue to be managed by DNOs or Transmission Connected iDNOs.

[24] The details behind each methodology can be found in the technical detailed specification documents.

Overall design 2: Overview of the Connections methodologies (2/3)

Project Designation Methodology

NESO considers that a project designation process is necessary to ensure that projects that demonstrate significant additional consumer, net zero and/or wider economic and/or societal benefits are capable of being included within the reformed connections queue and/or of being accelerated under the reformed connections process, due to the significant associated benefits that they can provide to GB consumers.

The Project Designation Methodology sets out how projects may be designated by NESO within the reformed electricity transmission connection process.

Designated projects can:
- be included within the reformed connections queue (providing they meet the readiness element of the Gate 2 criteria); and
- be prioritised for queue position within a Gate 2 assessment process (including the Gate 2 to the whole queue exercise from Q2 2025).

NESO considers that the following categories of projects are most likely to provide additional consumer, net zero and/or wider economic and/or societal benefits,. NESO therefore only intends to designate individual projects that fall within one or more of the below categories:

- Projects that are critical to Security of Supply
- Projects that are critical to System Operation
- Projects that materially reduce system and/or network constraints
- Projects that are new technologies and / or highly innovative, that are not included within the scope of the pathways in the CP30 Plan
- Projects with very long lead times (i.e., long design, consenting and construction periods) that may be needed beyond the 2035 pathway within CP30

NESO only envisages designating projects in exceptional circumstances, where those projects demonstrate that they meet the detailed criteria set out in the accompanying Project Designation Methodology.

Overall design 2: Overview of the Connections methodologies (3/3)

Connections Network Design Methodology (CNDM)

Sets out how projects within scope of TMO4+ will be assessed and strategically designed in alignment with wider network planning activities. It defines the process by which NESO and the Transmission Owners (TOs) will technically assess connection applications and determine:

- the indicative connection date and indicative connection location included in a Gate 1 offer;
- the connection date and connection point included in a Gate 2 offer, or the reserved connection date and connection point included in a Gate 1 offer for eligible projects;
- potential proposals for connections-related anticipatory investment.

The methodology also:

- Describes the approach being taken to apply the Gate 2 criteria to the existing queue, and how existing and transitional projects will be assessed for advancement where this is requested;
- Describes how capacity will be reallocated to other projects if a project exits the queue
- Describes how the connections network design process will interact with both Government's (CP30, SSEP) and NESO's (CSNP, RESP) strategic energy plans
- Signposts to other relevant documentation about strategic energy planning and the reformed connections process.

Rationale for NESO's overall design recommendation (1/2)

Based on the analysis on the previous pages, and the sections covering the other designs considered (Section 6. "Assessment of alternative design for connection reform" and Appendix D: "Overall Design 1 in practice"), we consider that overall design 2 performs above the other designs to deliver the stated outcomes of connections reform.

NESO's recommendation is therefore for overall design 2:

Overall Design 2: New queue is formed of i) 'ready' projects aligned to the pathways in the CP30 Plan; ii) 'ready' projects that were not known at the time of the CP30 Plan or that are otherwise outside the scope of the CP30 Plan

Neither overall design 1 nor overall design 3 reduces the current queue of 'ready' projects compared to the originally proposed TMO4+ 'readiness' approach. Based on our analysis, there is likely to be significantly more 'ready' capacity in the queue than is likely to be required by 2035 (particularly in certain technologies, e.g., short duration storage) unless overall design 2 is taken forward. Any significant excess capacity in the connections queue is likely to block projects that are both ready and aligned with Government's CP30 Plan and/or the first SSEP. Therefore, there is a need to remove or deprioritise non-aligned projects in the current queue. **This alone discounts overall design 1 as a feasible option to deliver on the objectives of reform.**

Whilst prioritising projects that align with the CP30 Plan will go some way towards delivering Clean Power in 2030, overall design 3 has the potential to cause problems in the longer term. Either offers will need to be withdrawn or materially changed when a subsequent plan is implemented, leaving project developers holding a risk, or all projects in the queue will need to be connected, meaning we would ultimately invest inefficiently, which is a significant risk to the consumer. **Overall design 3 would therefore either significantly delay or reduce the benefits of SSEP and risk GB's ability to efficiently meet strategic energy goals or create significant uncertainty for investors which may materially impact investment costs and/or appetite.**

Overall designs 1 and 3 therefore fall short in fully integrating and prioritising projects that would align with, and help efficiently deliver, the CP30 Plan and/or the first SSEP.

In our view, **overall design 2 is the only option available that 'right sizes' the queue to the requirements of Government's CP30 Plan, while allowing for an efficient transition to SSEP.** It is the only overall design that will ultimately allow networks to invest efficiently to deliver the needed connections as quickly as possible. Finally, it balances the need to give project developers certainty whilst managing the cost to the consumer.

Rationale for NESO's overall design recommendation (2/2)

NESO considers that overall design 2, if taken forward, would ensure better outcomes for GB consumers by:

Prioritising projects aligned to strategic energy plans: this design prioritises projects aligned to CP30, and in due course SSEP, this will **deliver an efficient, secure and operable system for Clean Power by 2030** and manage the **transition to 6th Carbon Budget targets** (if the CP30 Plan includes a 2031-35 pathway).

Supporting an efficient transition to SSEP: this design **protects consumers from the risk of projects** that align with the pathway for SSEP being materially delayed by other projects. It also protects project developers from the **risk of further retrospective action to the new queue** to **remove or deprioritise projects** that are not aligned with the pathway for SSEP.

Providing project developers and investors with clarity: this design provides a **transparent, objective, and simple end-to-end process**, bringing clarity to project developers and investors on the types of projects that will most efficiently deliver GB's net zero ambitions (to the period covered by the pathways in the CP30 Plan). This also **minimises and coordinates interventions** to the connections queue and process.

Ensuring network companies design and build economic and efficient coordinated networks: this design ensures a dedicated focus on the projects most aligned to the CP30 Plan, ensuring that those projects can connect more quickly (to the period covered by the pathway(s) in the CP30 Plan).

We consider that the risks associated with overall design 2 can be efficiently mitigated, particularly through the inclusion of a 2031-2035 pathway within the CP30 Plan. However, if the CP30 Plan does not include a 2031-2035 pathway then we will consider the mitigations set out in page 42 when we submit final recommendations to Ofgem.

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6. Assessment of alternative design for connections reform

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Overall design 3: Overview

Overall design 3: New queue is formed of i) 'ready' projects 'aligned to the pathway(s) in the CP30 Plan; ii) 'ready' projects not known at time of the CP30 Plan or otherwise outside scope of CP30 Plan; and iii) any other 'ready' projects.

Under overall design 3, alignment to the CP30 pathways would apply to the 'Gate 2 to the whole queue' exercise beginning in Q2 2025. More specifically, the new queue would be formed of all 'ready' projects, but the queue order of projects aligned to the CP30 pathways, or designated by NESO, would be prioritised (i.e., those projects would be earlier in the queue order / receive an earlier connection date).

Any other 'ready' projects that exceed the capacity (by technology and location) set out in the pathways in the CP30 Plan would be added to the back of the new queue and hold a Gate 2 contract. As those projects would be at the back of the queue, they would likely have a connection date beyond 2035 (e.g., 2036-2040). As set out in our accompanying draft Impact Assessment, this could amount to up to an additional 220GW beyond the 2035 pathway.

Any projects that do not meet the Gate 2 readiness criteria would receive a Gate 1 offer: indicative date and location [25].

In line with our preferred options under each key building block, we have based overall design 3 on the basis of **the CP30 Plan including a pathway from 2031 to 2035,** which can be used as the basis for issuing connections offers for projects in that period [26].

As such the new reformed **connections queue under overall design 3 would prioritise 'ready' projects** (i.e., projects that meet the readiness element of the Gate 2 criteria) **that are aligned to the 2030 pathway(s) or the 2035 pathway set out within the CP30 Plan, aswell as ready' projects not known at time of the CP30 Plan or otherwise outside scope of CP30 Plan; and iii) any other 'ready' projects.**

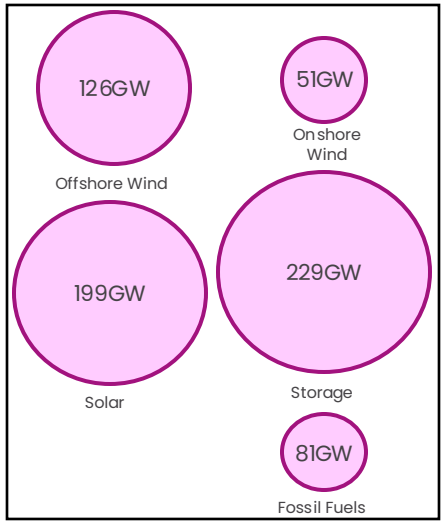
Note that under overall design 3 (if it were taken forward) NESO would ensure that projects already under construction and due to commission in 2026 or earlier will not be adversely impacted by aligning the queue to the CP30 Plan.

[25] DNOs/Transmission Connected iDNOs applying on behalf of Small/Medium Embedded Generators will not receive a Gate 1 contract if they do not meet the Gate 2 readiness criteria

[26] We have set out on pages 41/42 the mitigations we could take if the CP30 Plan does not include a 2031-35 pathway.

Overall design 3: How Gate 2 to the whole queue would work

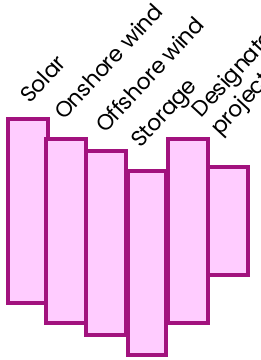
Current queue



Projects assessed by technologies & locations

Projects ordered based on their relative current queue order in line with technology/location/capacity pathways set by CP30 Plan

1. Projects apply to Gate 2
2. Apply Gate 2 Readiness criteria
3. Prioritise projects by technology / capacity / locational aligned to CP30 Plan pathways



Projects outside of the limits in CP30 Plan or not designated receive a Gate 2 offer but are lower priority in the queue.

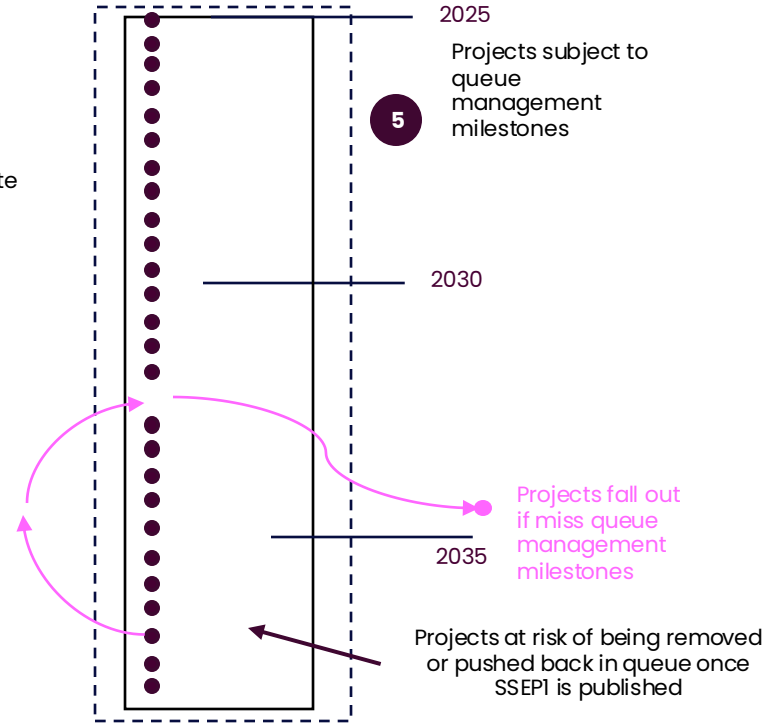
New queue

4. Establish Connection Date

Other projects are at Gate 1 and have indicative dates.

Projects can pass Gate 2 in future windows and receive a firm date / queue position if meet Gate 2 'readiness' criteria

Provide Connection Dates



Queue for delivery:
Capacity in the queue is likely more than needed for 2030 (and may be more than needed in 2050 in some locations / technologies)

Overall design 3: Benefits

This design would deliver the following benefits:

Benefits
Ensures projects **aligned with strategic energy plans (CP30) are prioritised** in the new connections queue to deliver an efficient, secure and operable system for Clean Power by 2030 and the transition to 6h Carbon Budget targets (if the CP30 Plan includes a 2031-35 pathway).
Provide **investors with clarity** on the types of projects that will most efficiently deliver GB's net zero ambitions (to the period covered by the pathways in the CP30 Plan), within a transparent, objective, and simple end-to-end process.

Overall design 3: Risks and Mitigations (1/2)

Although overall design 3 offers some benefits, there are associated risks, for which we have outlined corresponding potential mitigation actions.

Risks	Mitigation actions
Risk that **projects in the new queue beyond the CP30 2035 pathway may not be aligned with SSEP** – this uncertainty may significantly **impact investor appetite** in those projects, e.g., due to the risk of needing further retrospective action to reduce/reorder the post 2035 queue because of SSEP.	• A potential mitigation of this risk for project developers would be **early sight of the SSEP pathway and enhanced communication with project developers and investors**, being transparent about the risks involved with misalignment. Under overall design 3.
Risk that this reduces **overall investment appetite and liquidity** in certain technologies / locations (those technologies / locations / capacities not aligned with the CP30 Plan), which may be **valuable for stimulating competition** and **delivering savings/innovation** to consumers.	• The **inclusion of projects aligned to the 2031-35 pathway**, and arrangements to manage undersupply against the 2030 pathway(s), should mitigate this risk as this increases the number of projects that can connect in the late 2020s or early 2030s (e.g., it is possible that some projects in the 2031-35 pathway could be connected earlier than 2031). Also important to note that NESO's proposes to use the top of the range figure if Government chooses more than one 2030 pathway and the 2035 pathway itself reflects the highest FES scenario, thereby adding more projects and liquidity to the new queue. • **SSEP's introduction**, and the creation of new pathway(s) should **create additional liquidity** between 2031-2035 and beyond. *Note: while overall design 3 includes more projects in the new queue than overall design 2, this does not necessarily mean that those additional projects could compete in the market with projects in the 2030 pathway(s) in the new queue. For example, under overall design 3, additional projects would be at the back of the queue (with 2036+ dates) and be unable to compete in the market with projects towards the front of the queue (with dates up to the early 2030s).*

Overall design 3: Risks and Mitigations (2/2)

Although overall design 3 offers some benefits, there are associated risks, for which we have outlined corresponding potential mitigation actions.

Risks	Mitigation actions
Risk of **challenge from project developers** or **uncertainty in the industry**, reducing **overall investment appetite** due to lack of clarity on which projects align to the CP30 pathways (and in due course SSEP). This needs to be **justifiable and transparent.**	• We consider that this risk is **mitigated to some extent through a combination of the CP30 Plan (once published), this document and the connections methodologies**: Gate 2 Criteria Methodology, Designated Projects Methodology and Connections Network Design Methodology (CNDM). • However, the **risk of retrospective action** via the SSEP (as referred to above) means that there may be a **greater risk of challenge once SSEP is introduced.**
Risk of **network companies designing and building uneconomic and inefficient networks** for the period beyond the 2035 pathway in the CP30 Plan for projects that don't align with the SSEP.	• As the networks needed to connect projects beyond the 2035 pathways would not be needed for some time, **progress could be limited and expenditure could be kept relatively low for a few years, perhaps until the SSEP** is introduced. • However, **unless the connections agreements for projects beyond the 2035 pathway that are not aligned with SSEP were removed then network companies would ultimately be compelled to deliver additional transmission reinforcements.**

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7. Further variables and options to align connections

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Further variables and options to align connections reform to strategic energy planning

The below diagram sets out additional variables and options we have considered, in order to align the reformed connections process to strategic energy plans. NESO's preferred option is highlighted, having considered the pros and cons of each..

Our preferred options are based on our recommendation for overall design 2 as they would help most efficiently implement that design. The following pages, where we provide more detail on the recommended option under each variable and the rationale for discounting the other options, should therefore be read in that context.

Appendix B sets out our view on the combination of preferred options to implement overall design 3 if that design were to be taken forward.

	Variable	Definition	Options		
3	**Approach for demand projects**	How we treat demand projects in the queue	Strategic demand identified by government	'Ready' demand types in scope of CP30 included in new queue	Other 'ready' demand project types outside scope of CP30 can be included in the queue
4	**Approach to oversupply**	How to manage too much of a technology in the queue compared to a strategic plan	No limits (status quo)	Limits to align with any existing government targets	Limits based on project technologies / locations in scope of agreed plan (e.g., CP30 / SSEP)
5	**Approach to undersupply**	How to manage too little of a technology in the queue compared to a strategic plan	No correction of undersupply (status quo)	Potential substitution to meet under-supply – in adjacent locations	Reserve bay and network capacity for undersupplied technology type
6	**Approach to project attrition**	How to manage rates of project attrition in the queue	No replacement of 2035 pathway projects until SSEP1	No upfront attrition built in, but replacement of 2030 pathway(s) projects	[10%] upfront attrition built in
7	**Optimal use of the network** [27]	Treatment of projects based on substation / bay utilisation efficiency	Any project of any size can connect at any substation / bay (status quo)	Allocate projects to either Transmission / Distribution based on project capacity	Allocate projects to a voltage level based on MW capacity
8	**Transition to SSEP1**	To what extent the queue may align with SSEP1 or potentially need to be reduced / reordered	No reduction or reordering of the new queue because of SSEP1	Some limited reduction or reordering of the new queue because of SSEP1 (e.g., pre planning consent)	No limits to reduction or reordering of the new queue because of SSEP1

Final recommendation, as included in consultation | Other assessed options

[27] NESO has not made a recommendation on variable 7 at this stage as further work is required to determine the most efficient approach. NESO's view is that any option that differs from the status quo under variable 7 would only be taken forward for new project applications, i.e., any eventually preferred option should not be applied retrospectively

Our preferred options under each variable

3. Approach for demand projects (1/2)

Options		
Strategic demand identified by government	'Ready' demand types in scope of CP30 included in new queue	Other 'ready' demand project types outside scope of CP30 can be included in the queue

Our CP30 report to Government does not include all types of demand projects in scope. More specifically, it only includes certain types of demand projects[28]: those that provide energy system benefits, such as hydrogen electrolysers.

Arrangements for demand projects in scope of CP30
As set out on page 32, **where a demand project is of a type that is within the scope of the pathways within the CP30 Action Plan, we propose that itis treated in the same way as any other project, i.e., it would need to align (by location and capacity) with the relevant CP30 pathway(s).** Where there is oversupply or undersupply of that project type against the CP30 pathway(s), then the arrangements under variables 4 or 5 would apply.

Arrangements for demand projects outside the scope of CP30
As set out above and on page 32, many types of demand project may be outside the scope of the pathways within the CP30 Plan. However, connecting those types of projects will be important to GB's industrial strategy and to ensuring a quicker transition towards net zero across all areas of the GB economy. We consider that the reformed connections process should have flexibility to include such projects within the new reformed connections queue, so long as those projects meet the readiness element of the Gate 2 criteria. By allowing 'ready' demand projects outside the scope of the pathways within the CP30 Plan to enter the queue, we introduce flexibility and adaptability, which are crucial for responding to dynamic market conditions and capturing emerging opportunities. We believe this approach can lead to a more resilient and responsive network, capable of prioritising the most impactful projects while maintaining strategic alignment.

We therefore propose that types of directly connected transmission demand projects that are outside the scope of the pathways within the CP30 Plan can be included within the new reformed connections queue as and when they meet the readiness element of the Gate 2 criteria.

Where the capacity of demand projects seeking to connect to the system exceeds that which is planned for, there may be a need to increase the amount of generation connecting to the system as a result.

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[28] Distribution-connected (embedded) demand projects are outside the scope of connections reform and therefore wouldn't go through the TMO4+ process and therefore do not need to be considered here

Our preferred options under each variable

3. Approach for demand projects (2/2)

Options not recommended

We explored with Government whether there could or should be specific / different arrangements for strategic demand projects identified by Government. We jointly concluded that this would not be appropriate at this time, particularly as there may be the potential to designate specific demand projects that provide material constraint cost benefits to the transmission system (as per our accompanying Project Designation Methodology).

Our preferred options under each variable

4. Approach to oversupply

Options		
No limits (status quo)	Limits to align with any existing government targets	Limits based on project technologies / locations in scope of agreed plan (e.g., CP30 / SSEP)

As set out earlier, we intend to use the pathways in the CP30 Plan to set the requirements (by technology, capacity and location) for projects in the new reformed connections queue.

Where there is oversupply (by technology, capacity and location) of 'ready' projects against the 2030 pathway(s), we propose that any oversupplied projects will be considered against the 2031-35 pathway instead.

Where there is oversupply of 'ready' projects against the 2031-35 pathway, then we propose that any oversupplied projects will not receive a Gate 2 offer (this reflects our approach under preferred overall design 2). This is subject only to any potential substitutions that may balance oversupply in one location with undersupply in an adjacent location (i.e., potentially filling undersupply with oversupply, as per variable 5).

The CNDM sets out further details on this, including how we propose to determine the relative order of projects that contribute towards the pathways and ultimately determine which specific projects represent any oversupply.

Options not recommended

We do not recommend setting no limits on oversupplied technologies relative to the CP30 Plan pathways. This would represent either overall design 1 or 3, depending on whether any oversupply was positioned behind projects aligned to the CP30 Plan pathways in the reformed connections queue. We have set out earlier in this document why we do not recommend overall design 1 or 3.

We have not recommended setting any limits to align with existing government targets as we consider that the Government CP30 Plan, including any pathway to 2035, is a more appropriate tool for aligning the connections queue to strategic energy plans.

Our preferred options under each variable

5. Approach to undersupply (1/2)

Options		
No correction of undersupply (status quo)	Potential substitution to meet undersupply – in adjacent locations	Reserve bay and network capacity for undersupplied technology type

As set out earlier, we intend to use the CP30 pathways to 2030 and 2035 in the CP30 Plan to set the requirements (by technology, capacity and location) for projects in the new reformed connections queue.

Where there is undersupply (by technology, capacity and location) of 'ready' projects against the 2030 pathway(s), we propose to manage that undersupply in one of two possible ways:

1) **Allow substitution from an adjacent location of oversupply**. There are benefits in general of using oversupply to fill an area of undersupply as this may help us meet our 2030 ambitions more quickly. However, to preserve the benefits of the CP30 Plan (e.g., through alignment against network plans), any substitution from an area of oversupply to an area of undersupply would need to be limited in scope. Our view is that any substitution would need to be of the same technology type, with the same or closely comparable capacity, from an adjacent location.
2) **Reserve bay and network capacity for undersupplied technology type**. Where substitutions are not possible, we would look to reserve network capacity and a bay where possible for the undersupplied technology type. Any such non-project specific reservation would be communicated to industry. The relevant capacity and bay would be allocated to a project of the specified technology type, with the same or closely comparable capacity, that meets the Gate 2 criteria within the next Gate 2 window.

The CNDM sets out further details on both areas above.

Where there is undersupply (by technology, capacity and location) of 'ready' projects against the 2035 pathway, we propose to manage that undersupply by communicating that area of undersupply to industry and inviting applications to fill that undersupply (by matching technology, location, and by matching capacity as closely as possible) at the next Gate 2 window.

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Our preferred options under each variable

5. Approach to undersupply (2/2)

Options not recommended

We have not recommended 'no correction for undersupply' as that would mean that where there was material undersupply in any technologies or locations against the pathways in the CP30 Plan, then projects of a different technology or location (e.g., from the 2031-35 pathway) would instead be prioritised and receive earlier connection dates, which would risk efficient delivery of the full mix of projects aligned to the CP30 Plan.

Our preferred options under each variable

6. Approach to project attrition (1/2)

Options		
No replacement of 2035 pathway projects until SSEP1	No upfront attrition built in, but replacement of 2030 pathway(s) projects	[10%] upfront attrition built in

Project attrition associated with the 2030 pathway(s)
If projects aligned to the 2030 pathway(s) in the CP30 Plan exit the connections queue (e.g., through self-termination, queue management milestones, due to market or planning issues, resulting in connection contract termination), we must replace those projects as soon as possible to meet the ambitions of the 2030 clean power plan.

We propose 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) in the connections queue within the 2031-2035 pathway could accelerate their delivery timetable to replace the project that has exited the queue. If this were not possible, then we would look for other ways to replace the project that has exited; this could include reserving capacity that can be allocated to a replacement project when it meets the Gate 2 criteria.

Project attrition associated with the 2031-2035 pathway
If projects in the connections queue that are aligned to the 2031-35 pathway in the CP30 Plan exit the connections queue, we will assess the reason for the project exiting the queue and the optimal replacement for this capacity will be informed by the SSEP.
A project may have exited the queue due to their project being unviable or uneconomic at its particular location. Where this could be the case, the project will not be replaced automatically and any projects aligned with the SSEP pathway will be progressed once known.

The exception to this is where a project in the 2031-2035 pathway has been advanced to replace a project from the 2030 pathway that has exited the queue. In this case, the project in the 2031-2035 pathway will be replaced in accordance with the guidelines contained in the CNDM.

Our preferred options under each variable

6. Approach to project attrition (2/2)

Options		
No replacement of 2035 pathway projects until SSEP1	No upfront attrition built in, but replacement of 2030 pathway(s) projects	[10%] upfront attrition built in

Options not recommended

We have considered whether we should build in an upfront additional allowance (by capacity, technology and location) to account pre-emptively for potential project attrition post Gate 2. However, our view is that this is neither necessary nor appropriate, because:

- accelerating projects in the connections queue within the 2031-35 pathway or reserving capacity can address undersupply within the 2030 pathway(s); and
- pre-emptively including additional capacity above the 2030 pathway(s) in the CP30 Plan would not be efficient if the level of capacity that exited the queue ended up lower than that upfront additional capacity allowance. In that scenario, this would delay the connection of other projects in the 2030 or 2031-35 pathways due to additional network build and would also introduce additional costs and impact for consumers; and
- pre-emptively including additional capacity above the 2035 pathway in the CP30 Plan would reduce the benefits that the SSEP can deliver consumers (as projects in the new SSEP pathway would be lower in the queue and have later connection dates because of the additional capacity built into the 2035 pathway).

Our preferred options under each variable

7. Optimal use of the network

Options		
Any project of any size can connect at any substation / bay (status quo)	Allocate projects to either Transmission / Distribution based on project capacity	Allocate projects to a voltage level based on MW capacity

Implementing this variable could involve allocating connections to different points on the network depending on their capacity to facilitate making most efficient use of the network. The options under this variable range from maintaining the status quo (on the left) to introducing specific capacity requirements for projects connecting to each voltage on the network – or introducing maximum capacity requirements for connecting at distribution and/or minimum capacity requirements for connecting at transmission.

We have not made a recommendation on the most appropriate and efficient option under this variable as further work is needed to determine this.

Our view is that any option that differs from the status quo would only be taken forward for new project applications, and not applied retrospectively.

Our preferred options under each variable

8. Transition to SSEP1

Options		
No reduction or reordering of the new queue because of SSEP1	Some limited reduction or reordering of the new queue because of SSEP1 (e.g., pre planning consent)	No limits to reduction or reordering of the new queue because of SSEP1

Our preferred approach to managing an efficient transition to the first SSEP is to ensure that the new reformed connections queue does not exceed the capacity (by technology and location) set out in the 2035 pathway in the CP30 Plan. This represents overall design 2. Aligning the reformed connections queue with the CP30 Plan will provide confidence that the mix of technologies (by capacity and location) is in line with strategic energy plans and that no retrospective action is required once SSEP is introduced to bring the connections queue back into alignment with strategic priorities.

As such, if overall design 2 is taken forward, we propose that SSEP (once it is introduced), would not seek to remove or reorder any contracted projects from the reformed connections queue that are aligned to the 2030 pathway(s) or to the 2031-35 pathway in the CP30 Plan.

Once SSEP is published, this would set a new/additional pathway to provide a clear longer-term investment signal to investors.

So that SSEP can optimise the future energy system (in terms of capacity, technology and location) it is important that SSEP does not include projects that would not enable an economic and efficient transition towards net zero. For that reason, and as set out within variable 6, we propose that if projects in the connections queue aligned to the 2031-35 pathway within the CP30 Plan exit the connections queue (e.g., due to market or planning issues, resulting in connection contract termination) then we will not automatically seek to replace them like-for-like via the next Gate 2 window. Instead, we will assess the reason for the project exiting the queue to determine whether replacing it on a like for like basis via a future Gate 2 window is appropriate.

A project may have exited the queue due to their project being unviable or uneconomic at its particular location. Where this is the case, the project will not be replaced automatically and SSEP will consider the optimal location and specification of a replacement project. The first SSEP may therefore optimise any spare/unallocated capacity within the 2031-35 pathway.

Options not recommended
If overall design 2 is taken forward, we do not recommend any form of reduction or reordering of the contracted projects in the new queue because of the first SSEP. This is because the connections queue would already be aligned with the CP30 Plan.

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We have assessed additional variables to further inform our recommendations

Variable	Options		
9 **Does CP30 alignment apply to Transmission and Distribution?**	Applies to T only	Applies to T and some D (i.e., to D that is in scope of TMO4+)	Applies to T and all D
10 **Is there a spatial element to CP30 alignment?**	Yes - FES zones	Yes – CP30 zones	No
11 **How do we order projects in the new queue to determine CP30 alignment**	Existing queue position	Planning status	Combination of existing queue position and planning status

Final recommendation, as included in consultation Other assessed options

Our preferred options under each detailed variable

9. Does CP30 alignment apply to Transmission (T) and Distribution (D)? (1/2)

Options		
Applies to T only	Applies to T and some D (i.e., to D that is in scope of TMO4+)	Applies to T and all D

Our recommended approach is that **CP30 Plan alignment should apply to all Transmission connected and some Distribution connected projects, specifically those Distribution connected generation or storage projects that are in scope of TMO4+ as set out in the proposed code modifications**. This ensures consistency with the overall TMO4+ approach and removes potential incentives for projects to find loopholes in the process and instead connect at a distribution level. It is also proportionate to impact and provides flexibility to small projects that would not need to go through the TMO4+ process, such as rooftop solar.

Policy implementation of this variable would be carried out via the Gate 2 Criteria Methodology along with the TMO4+ code modifications, which encompasses the full TMO4+ scope.

We propose that the reformed connections process and reformed connections queue should align with the technology, capacity and regional requirements for clean power as set out within Government's CP30 Plan - at both a transmission and distribution level. This will improve the efficacy of the new connections queue so that the first 'ready' and strategically aligned projects are connected efficiently to achieve clean power, across both transmission and distribution networks.

We have recommended to Government that the CP30 Plan includes capacity requirements for different technologies connecting at transmission and distribution networks. We have recommended that the pathways within the CP30 Plan (to 2030 and to 2035) therefore clearly separate the proposed mix of transmission and distribution technologies, by capacity and location. **We propose Distribution Network Operators (DNOs) determine the 'ready' projects within their Distribution Services Area which align with the distribution mix set out within the pathways in Government's CP30 Plan prior to assessment of the combined queue.**

We consider that this approach is consistent with the overall strategic direction of travel, for example under SSEP and Regional Energy System Planning (RESP) when this is introduced and is also aligned with whole system thinking and the transition to Distribution System Operators (DSOs).

Our preferred options under each detailed variable

9. Does CP30 alignment apply to Transmission (T) and Distribution (D)? (2/2)

Options not recommended
Aligning with the CP30 Plan only at transmission level, while overlooking the consequential impacts of distribution-connected generation, risks an incomplete approach to addressing system design, leading to risks around system operability and constraints. In contrast, extending the alignment to encompass both transmission and distribution connections in their entirety could entail substantial administrative and regulatory efforts, for little if, any gain and may unnecessarily delay local small low carbon flexibility sources.

Our preferred options under each detailed variable

10. Is there a spatial element to CP30 alignment?

Options		
Yes - FES zones	Yes – CP30 zones	No

As set out previously, we propose that the reformed connections process and revised connections queue should align with the technology, capacity and regional requirements for clean power as set out within Government's CP30 Plan (at both a transmission and distribution level).

More specifically in terms of location, NESO's recommendation is that zones should be included within the Government's plan for both relevant distribution (based on Distribution Services Areas) and transmission connected projects (based on zones which align with strategic planning exercises). These zones will be used by NESO and DNOs to determine alignment of projects with the pathways within Government's CP30 Plan as part of the Gate 2 Strategic Alignment criteria. This is so that projects are located where they would support the economic and efficient development of the whole system, as aligned to Government's CP30 Plan. NESO will work to ensure these zones align with future strategic planning processes as much as possible.

Policy implementation of this variable would be carried out via the Gate 2 Criteria Methodology and Connections Network Design Methodology.

Options not recommended
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. As such we also consider it necessary to align connections criteria and decisions with the specific zones set out in Government CP30 Plan, rather than any other zones.

Our preferred options under each detailed variable

11. How do we order projects to determine CP30 alignment? (1/2)

Options		
Existing queue position	Planning status	Combination of existing queue position and planning status

NESO's recommendation is to preserve the current relative positions of 'ready' projects within the queue, within the CP30 pathway they align to.
This is largely for two reasons:

1. To ensure that the contracted connection date serves as an accurate indicator of alignment with CP30 Plan objectives;
2. To increase 2030 pathway projects' chances of securing a comparable or better date following the Gate 2 to Whole Queue exercise.

Additionally, we propose that the planning status of each project will play an important role in identifying those projects that align with the 2030 pathway(s). We propose to initially sort projects based on their planning status to assess their alignment with the 2030 pathway within the CP30 Plan, after which they will be returned to their initial relative queue positions for further analysis.

We consider that this combined approach will help maximise the chances of projects delivering successfully by 2030 whilst also increasing projects' chances of securing a comparable or better date following the Gate 2 to Whole Queue exercise.

Policy implementation of this variable would be carried out via the Connections Network Design Methodology.

Our preferred options under each detailed variable

11. How do we order projects to determine CP30 alignment? (2/2)

Options not recommended
Option 1, which relies solely on existing queue position, does not account for the planning status that is important for assessing a project's readiness and its alignment with the CP30 Plan objectives, as it will impact on how likely it is for a project to deliver successfully by 2030.

While Option 2 considers planning status, it overlooks the importance of the contracted connection date as an indicator of a project's progress and its potential to meet the CP30 Plan objectives. Ordering the queue only by planning status also risks significant changes to the relative queue positions of a much larger number of projects during the Gate 2 to the whole queue exercise, which could push back the connections dates of a significant number of 'ready' projects that are aligned with the CP30 pathways, as well as risking more changes to the transmission reinforcement works associated with those projects, which could further delay their connection and/or significantly change their user commitment charging requirements.

Finally, introducing significant changes to the relative queue positions of a much larger number of projects during the Gate 2 to the whole queue exercise would necessarily make that process take longer and be more complicated, which in turn could materially delay the date by which offers are issued to Gate 2 projects, which would not support the CP30 Plan ambitions.

Public

8. Plan & Next steps

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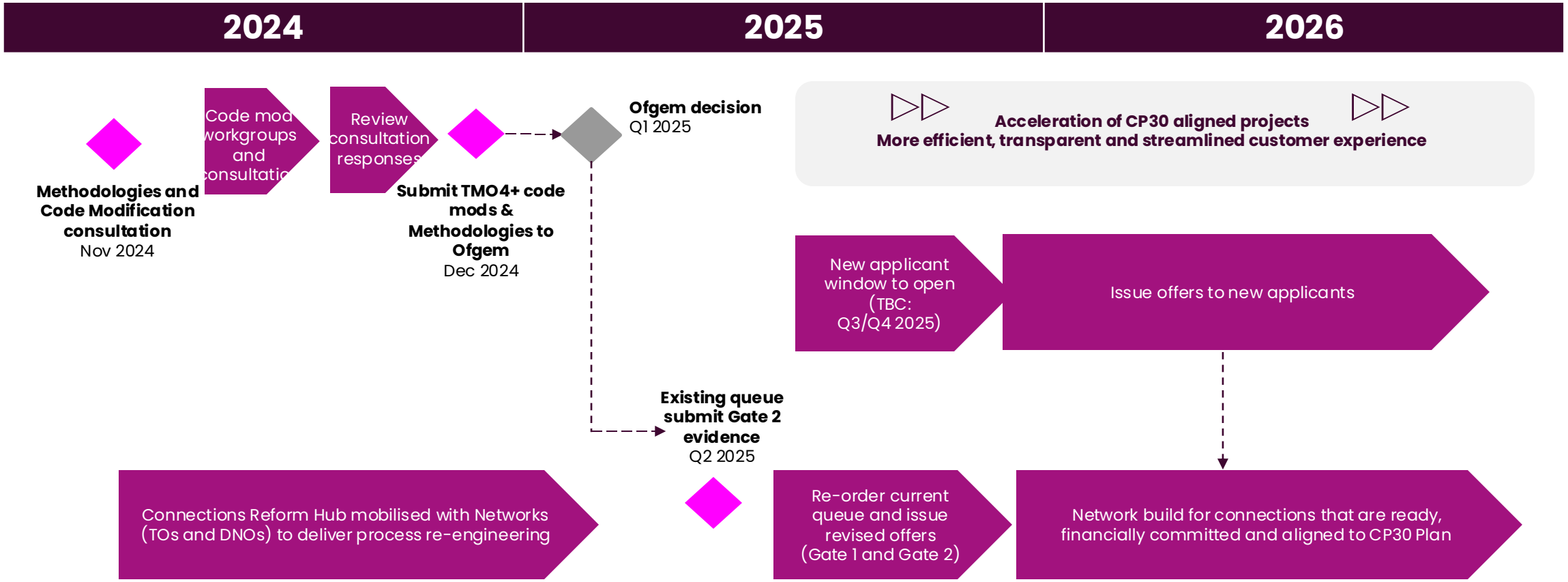
High level Implementation Plan

The following plan demonstrates the key milestones to implement the connections reform process. It serves as a strategic guide, outlining the sequence of events that must unfold to facilitate a smooth transition and effective integration of the new process.

Please note: This plan is indicative and subject to change. NESO will continue to work closely with Networks to define Implementation timelines.



More detailed next steps (1/2)

Methodologies	• Following this consultation, we will review the responses, refine the connections methodologies as appropriate, and formally submit them to Ofgem by the end of 2024, alongside our impact assessment. • Ofgem will then consider the proposals, with a decision expected by the end of Q1 2025.
Code modifications	• Following the code administrator consultation and following consideration of responses, we will submit the Final Modification Reports to Ofgem by the end of 2024. • Ofgem will then consider the proposals, with a decision expected by the end of Q1 2025. • We may also introduce a financial instrument code modification – see slide 21 and recently published Call for Input.
CP30 Plan	• Government is expected to publish its CP30 Plan by end of 2024.
Strategic Spatial Energy Plan	• As set out in the SSEP commission, NESO's first public-facing milestone is the SSEP draft methodology, which will be published for consultation in December. It will provide further detail on how we intend to deliver the SSEP.

More detailed next steps (2/2)

Implementation of connections reform

- Following Ofgem's decision (assuming a positive decision) at end Q1 2025, project developers in the current queue will be provided with a period of time (no less than 2 weeks, occurring no less than 4 weeks after the implementation date into the codes) to submit a Gate 2 declaration/application and to provide evidence that they consider they have met the readiness element of the Gate 2 criteria.
- NESO will review evidence submitted by project developers and work with TOs and DNOs to establish the new connections queue – this is referred to as the 'Gate 2 to the whole queue' exercise. Customers must also meet one of the Gate 2 Strategic Alignment Criteria—aligning with CP30 Plan pathways, being a NESO designated project, or being a Transmission connected demand project outside the CP30 Plan scope—although they are not required to provide evidence themselves.
- We intend to start to issue offers under the Gate 2 to the whole queue exercise by the end of 2025. and to start to issue offers to Gate 1 projects from Q2 2025.

Other Connections Action Plan activities

- Queue reform is one element of the overarching connections reforms required. Other work ongoing by NESO includes:
  - Improvement to Construction Planning Assumptions (CPAs) to make them more robust for thermal studies in connections.
  - Creation of CPAs for assessing fault levels.
  - Reach an agreement with TOs on how to classify enabling works for customer offers.
  - Following implementation of CMP376 (queue management milestones) we will continue to actively monitor and manage the achievement of queue management milestones for all contracted projects within the queue and seek remedy where evidence is insufficient.
  - Connections 360 has been launched to provide customers with greater insight into the GB connections landscape, allowing for more informed applications.

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How to get involved

We would like to hear your views

We introduced our consultation questions at the start of this document (pages 9 and 10) and welcome your views on each of these questions. Please use the detailed documents on each of the methodologies to inform your responses.

Please provide your feedback by completing this Connections Reform Consultation Response Form or by completing this Connections Reform: Consultation Response Proforma and sending an electronic copy to box.connectionsreform@nationalenergyso.com by 5pm on the closing date of 2nd December 2024.

We will publish all consultation responses unless they are marked confidential. If you do not wish your response to be published, please clearly mark it as confidential. Please note even confidential responses will be shared with Ofgem. By responding you agree to our sharing your response with Ofgem.

To support you in your response and to answer any questions, we will be holding at least one webinar in November, which we encourage you to attend.

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Public

9. Appendix

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List of Appendices

A. Further, more detailed variables

B. Key changes in the detail of the methodologies if overall design 3 were taken forward

C. Our data journey and assumptions

D. How overall design 1 might work in practice

E. Assessment of overall designs 1, 2 and 3 against CDB's criteria

Appendix:
(A) Further, more detailed variables

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We have assessed additional variables to further inform our recommendations

	Variable	Options			
12	**Are the categories for technologies within pathways the same as in Government's CP30 Plan?**	Yes	No		
13	**Does a project that has a Connection Point and Capacity reserved at Gate 1 count towards CP30 Plan alignment?**	Yes	No		
14	**Should capacity limits by technology/location be set for each year of a pathway?**	Year by Year	5 yearly blocks: 2025 - 2030 and 2031 - 2035		
15	**Are capacity limits based on installed capacity?**	Installed capacity	Contracted export capacity		
16	**How do we replace projects that exit the queue?**	Offer acceleration of connection date to like for like project lower in new queue	Offer capacity to next like for like project that meets Gate 2 criteria	Open to next project of any technology that meets Gate 2 criteria	
17	**What happens where part of a project's capacity exceeds a pathway limit?**	Allow the full capacity to connect	Allow capacity up to the limit to connect [29]	Allow non-firm access for capacity above the limit	Phased connection – capacity out with plan connecting later
18	**What is the approach for hybrid projects?**	Treat as all technologies irrespective of system behaviour	Treat as a single technology irrespective of system behaviour	Treat in line with system behaviour	

Final recommendation, as included in consultation | Other assessed options

[29] Recommended option to apply for 2031- 2035 period, to ensure alignment with SSEP

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Our preferred options under each detailed variable

12. Are the categories for technologies within pathways the same as in Government's CP30 Plan?

Options	
Yes	No

The **categorisation of technologies within our connections reform arrangements will be directly linked to Government's CP30 Plan**, as we require clear alignment for consistent project allocations and transparency to industry. This alignment ensures consistency and facilitates a more seamless integration of our analysis with national strategies and policies. Our CP30 report and the **Future Energy Scenarios (FES)** provide a broad spectrum of technology categories, yet it is important to note that the analysis delves deeper, assessing the nuances and specifics of sub-technologies as indicated on page 82.

By aligning the technology categories used for connections reform with the categories within the Government's CP30 Plan (including any sub-categories), we aim to provide a detailed and precise understanding of the technology landscape. This alignment is essential for accurately assessing progress and identifying opportunities for connection that align with the objectives of the Government's CP30 Plan.

Policy implementation of this variable would be carried out via the Government CP30 Plan, Connections Network Desing Methodology and Gate 2 Criteria Methodology.

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Technology categories and subcategories used in CP30 report / FES24

The following table outlines the technology types and sub-categories in our CP30 report to Government. Government's CP30 plan may amalgamate technology types or use different technology groupings. Our intention is to align with the technology categorisations used in Government's CP30 Plan.

Technology Type	Sub-categories			
Biomass	Biomass	Biomass CHP		
Hydro	Hydro			
Marine	Marine			
Other Renewables	Other Renewables			
Solar	Solar PV			
Waste	Waste	Waste CHP		
Storage	Battery	Compressed Air	Liquid Air	Pumped Hydro
Gas	CCGT	Gas CHP	Gas Reciprocating Engines	
Hydrogen	Hydrogen	Hydrogen CHP		
Other Thermal	Diesel	Fuel Oil	OCGT	
Onshore Wind	Onshore wind			
Interconnectors	Interconnectors			
CCS	CCS Biomass	Gas		
Nuclear	Nuclear Large	Nuclear - SMR		
Coal	Coal	OCTG		
Demand Side Response (DSR)	DSR			

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Our preferred options under each detailed variable

13. Does a project that has a Connection Point and Capacity reserved at Gate 1 count towards CP30 Plan alignment?

Options	
Yes	No

Our proposal is that **projects that have a Connection Point and Capacity reserved at Gate 1 should count towards alignment with Government's CP30 Plan pathways**, as they will have been factored into network design and the reservation is effectively holding a queue position.

This reservation indicates a level of commitment and planning from network companies that aligns with the objectives of Government's CP30 Plan. Since these projects are treated similarly to Gate 2 projects in terms of their impact on the network and their role in the planning process, they should logically contribute towards the CP30 pathway.

Policy implementation of this variable would be carried out via the Connections Network Desing Methodology.

Options not recommended

To exclude projects that have capacity/ bay reserved at Gate 1 would be to ignore their significance in the network's future capacity and strategic planning.

Our preferred options under each detailed variable

14. Should capacity limits by technology/location be set for each year of a pathway?

Options	
Year by Year	5 yearly blocks: 2025 - 2030 and 2031 - 2035

NESO's recommendation is that for the purposes of aligning with Government's CP30 Plan it is most appropriate to align the connections queue with the CP30 pathways in five year blocks. This allows NESO and network companies to develop designs that take account of the overall requirements over a five year period. This means that an economic and efficient network can be developed for the end goal of a pathway, rather than incrementally for any point in between. It also provides more flexibility to accommodate all those projects that align with those 5 yearly blocks.

The first block would be to 2030, as per the pathway(s) in Government CP30 Plan, with the second block from 2031 to 2035, as per the 2035 pathway we have recommended to Government for issuing connections offers.

Policy implementation of this variable would be carried out via the Connections Network Design Methodology.

Options not recommended
Our perspective is that setting capacity limits per year could be too specific and put at risk delivery of the overall CP30 plan. Aligning the connections process with the plan year on year is likely to introduce additional complexity and potential unintended consequences that could put at risk achievement of the overall CP30 plan.

Our preferred options under each detailed variable

15. Are capacity limits based on installed capacity?

Options	
Installed capacity	Contracted export capacity

When allocating projects against the pathways within Government's CP30 Plan, we intend to use each project's contracted export capacity in the majority of cases (i.e., for projects that are not hybrids) as this is the instantaneous export capability. However, for hybrid projects we will use contracted export capacity or the installed capacity, where that is lower than the contracted export capacity.

Policy implementation of this variable would be carried out via the Gate 2 Criteria Methodology and the Connections Network Design Methodology.

Options not recommended
Installed capacity may not accurately reflect the actual amount of energy that projects can export, leading to potential discrepancies and inefficiencies in allocation against Government's CP30 Plan. Additionally, using installed capacity may overlook the contractual agreements that define the export limits of projects, which are more relevant for aligning with the strategic objectives of the CP30 Plan.

Our preferred options under each detailed variable

16. How do we replace projects that exit the queue? (1/2)

Options		
Offer acceleration of connection date to like for like project lower in new queue	Offer capacity to next like for like project that meets Gate 2 criteria	Open to next project of any technology that meets Gate 2 criteria

Projects aligned to the 2030 pathway(s) in the CP30 Plan
As set out under variable 6, we propose that if projects aligned to the 2030 pathway(s) exit the connections queue (e.g., through queue management, self-termination, or not accepting their Gate 2 offer), we should replace those projects with 2035 pathway projects where possible, in a way that ensures continued alignment to the CP30 Plan.

NESO's recommendation[30] is to align replacements of projects that exit the queue as much as possible with CP30 pathways. As such, the following two options are our preference:

- **Offer acceleration to a 'like for like' project lower in new queue** in cases where a 2030 pathway project can be replaced by a 2035 pathway project
- **Offer capacity to next 'like for like' project that meets Gate 2 criteria** only where there is not currently a suitable project in the queue to replace a 2030 pathway project

In terms of the approach to replacing the project, we recommend:

- Determining the 'like for like' project using the guidance and exceptions outlined in the Connections Network Design Methodology
- That NESO is responsible for managing replacements at a transmission level, and that DNOs are responsible for managing replacements at a distribution level.

Policy implementation of this variable would be carried out via the Connections Network Design Methodology.

[30] Recommended option to apply for 2031- 2035 period, to ensure alignment with SSEP

Our preferred options under each detailed variable

16. How do we replace projects that exit the queue? (2/2)

Projects aligned to the 2035 pathway in the CP30 Plan
As set out under variable 6, where projects in the connections queue that are aligned to the 2031-35 pathway in Government's CP30 Plan exit the connections queue, **we will assess the reason for the project exiting the queue and allow SSEP to determine the optimal replacement for this capacity.**

A project may have exited the queue due to their project being unviable or uneconomic at its particular location. Where this could be the case, the project will not be replaced automatically and SSEP will consider the optimal location and specification of a replacement project. The first SSEP may therefore optimise any unallocated capacity within the 2031-35 pathway. As the project exiting the queue would be further back in the queue in this scenario it is less urgent to replace it as soon as possible, and waiting until SSEP should not have any material negative impact – particularly if we offer the freed-up capacity to appropriate other projects in the 2031-35 pathway that may be capable of accelerating their connection date.

The exception to this is where a project in the 2031-2035 pathway has been advanced to replace a project from the 2030 pathway that has exited the queue. In this case, the 2031-2035 pathway project will be replaced in accordance with the guidelines contained in the CNDM.

Options not recommended
Replacing projects that exit the queue on a non-'like for like' basis, or automatically replacing a project in the 2035 pathway that has exited the queue could materially undermine strategic energy plan requirements.

Our preferred options under each detailed variable

17. What happens where part of a project's capacity exceeds a pathway limit? (1/2)

Options for 2025-2030 pathway(s)			
Allow the full capacity to connect	Allow capacity up to the limit to connect	Allow non-firm access for capacity above the limit	Phased connection – capacity beyond plan connecting later

The period leading up to 2030 can be viewed as a critical transition phase in the energy sector, where the grid is adapting to new technologies and shifting away from older, less sustainable power sources. It is also the period where strategic energy planning is being introduced. During this time, it may be beneficial to be more flexible with capacity to encourage the development and integration of renewable energy projects that can help stabilise the grid and accelerate the transition to a low-carbon energy system. Additionally, the 2035 pathway in Government's CP30 Plan provides some reassurance of an efficient transition towards longer-term targets and strategic energy plans.

As such, we consider that it would not be appropriate to restrict projects in the 2030 pathway(s) too tightly to all the detailed and specific aspects of the Government CP30 Plan. For example, we set out under variable 5 that we could potentially utilise substitution of a technology from an oversupplied location against the 2030 pathway(s) to meet undersupply of that technology in an adjacent location.

Under this variable, we therefore propose that **where the capacity of the final project to meet the 2030 pathway(s) (by technology and location) partially meets the capacity of the pathway(s), but in so doing exceeds the capacity of the pathway(s), then this should be permitted**. We do not consider that it would be necessary or appropriate to seek to restrict that capacity so that it does not exceed the capacity of the pathway(s), as even by including additional capacity relative to the 2030 pathway(s), residual capacity would remain available in the 2031-35 pathway.

Our preferred options under each detailed variable

17. What happens where part of a project's capacity exceeds a pathway limit? (2/2)

Options for 2031-2035 pathway(s)

Allow the full capacity to connect	Allow capacity up to the limit to connect	Allow non-firm access for capacity above the limit	Phased connection – capacity beyond plan connecting later

However, including any additional capacity (by location and technology) to connect beyond the 2035 pathway, would reduce the scope of capacity that can be optimised by the SSEP. Depending on the extent of any additional capacity, this might undermine the cost-effectiveness and strategic objectives of the SSEP.

We therefore propose that **where the capacity of the final project to potentially meet the 2035 pathway (by technology and location) partially meets the capacity of the 2035 pathway, but in so doing would exceed the capacity of the 2035 pathway, then only the capacity up to the pathway should be permitted**. In practice this means that the final project would be offered a Gate 2 contract limited to the capacity of the 2035 pathway. That project would not have to sign the contract with the reduced capacity, but if it did not, then the remaining capacity would be offered to the next Gate 2 'ready' project (whether in the same or next Gate 2 window).

We propose that NESO for transmission-connected projects (or DNOs for embedded projects) should be able to exercise some limited discretion in this (for example where any additional capacity is very small).

Options not recommended

We have considered whether in the case above, the final project to potentially meet the 2035 pathway could instead be offered temporary restrictions on availability for the capacity above the pathway (until the necessary additional transmission reinforcement is built), or if the connection could be phased so that capacity out with the plan could connect later. However, under both those options this would involve a commitment from NESO and network companies to build additional network reinforcements. This reinforcement may not align with the SSEP (e.g., it may be in a location where no further reinforcement is planned due to environmental or community constraints) so we do not think it would be appropriate to commit to build it.

Our preferred options under each detailed variable

18. What is the approach for hybrid projects? (1/2)

Options		
Treat as all technologies irrespective of system behaviour	Treat as a single technology irrespective of system behaviour	Treat in line with system behaviour

NESO's recommendation is that hybrid projects (i.e. projects that have a combination of more than one technology) should be managed based on their system behaviour and impact.

There is a significant number and capacity (~260GW) of hybrid projects in the connections queue, almost all of which include generation (export) as well as storage (import & export) elements. We recommend that, if for example a hybrid project involving storage wishes to both import and export from/to the transmission system, it will be considered as contributing to both the storage element of the CP30 Plan pathways (by capacity and location) and the relevant generation technology element of the CP30 Plan pathways (by capacity and location).

Alternatively, if a project with storage does not wish to import from the network and wishes to use that storage instead to, for example, change the profile of its export capacity (so long as this is within the overall contracted export capacity), then the project would not be behaving as storage on the transmission system and the storage capacity would not contribute towards the storage capacity of the CP30 Plan pathways.

Where a hybrid project wishes to behave as more than one technology on the transmission system (e.g., import and export capacity) and where the capacity of one or more technologies within a hybrid project exceeds the capacity within the CP30 Plan 2035 pathway (by location), then that technology element of the hybrid project would receive a Gate 1 contract. This represents the same treatment as any other project that exceeds the capacity within the CP30 Plan 2035 pathway (by capacity, technology and location).

There may also be hybrid projects that include multiple generating technologies but no storage. The amount of capacity contributing towards technology limits in this scenario would be the lower of the export capacity or installed capacity of each technology.

Policy implementation of this variable would be carried out via the Connections Network Design Methodology and Gate 2 Criteria Methodology.

Our preferred options under each detailed variable

18. What is our approach for hybrid projects? (2/2)

Options not recommended
We have considered alternative options, for example whether we should prioritise hybrid projects in the connections queue, or whether we should only consider the system behaviour and impact of the largest technology element of a hybrid project, or whether we should treat any hybrid project as all its constituent technologies irrespective of system behaviour.

We do not think that there is a good case to prioritise hybrid projects (as this would result in other projects being deprioritised), although we are interested in views as to whether there should be any case for prioritising hybrid projects.

With regards the other options above, we think that the full system impact of a project should be considered, regardless of whether it is a hybrid or non-hybrid project. To do any differently may risk significant system operation issues and/or additional balancing costs.

Appendix:
(B) Key changes in the detail of the methodologies if overall design 3 were taken forward

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Key changes in the detail of the methodologi within overall design 3 (1/3)

The table below outlines the principal distinctions between overall design 3 and overall design 2 when the applying the variables

Variable	Approach under overall design 3
1. Time horizon for determining "aligned" project	• We have recommended to Government in our NESO CP30 report that in addition to pathway(s) to 2030, the Government CP30 Plan should also include a pathway from 2031 to 2035, which can be used as the basis for issuing connections offers for projects in that period – same as overall design 2
2. Approach for managing scope of the new queue	• We would include all 'ready' projects that were not known at the time of the CP30 Plan or that are otherwise outside the scope of the CP30 Plan - same as overall design 2 • We would also include all 'ready' projects that exceed the capacity (by technology and location) set out in the 2035 pathway in the CP30 Plan ***– key difference to overall design 2***
3. Approach for demand projects	• Arrangements for demand projects in scope of CP30 Plan - same as overall design 2 • Arrangements for demand projects outside the scope of CP30 Plan – same as overall design 2 • Note however that any new 'ready' demand projects that join the new queue in future Gate 2 windows would sit behind all other 'ready' projects that go beyond the 2035 pathway that were added in a previous Gate 2 window ***– key difference to overall design 2***
4. Approach to oversupply	• Where there is oversupply against the 2035 pathway, any oversupplied projects would receive a Gate 2 offer for connection at the back of the queue (i.e., likely connection dates 2036+). That offer may also be at risk of being pushed back or potentially removed entirely once SSEP is in place ***– key difference to overall design 2***
5. Approach to undersupply	Where there is undersupply (by technology, capacity and location) of 'ready' projects against the 2030 pathway(s): • Allow substitution from an adjacent location of oversupply: any substitution would need to be of the same technology type, with the same or closely comparable capacity, from an adjacent location - same as overall design 2 • Reserve bay and network capacity for undersupplied technology type - same as overall design 2 Where there is undersupply (by technology, capacity and location) of 'ready' projects against the 2035 pathway: • Reserve bay and network capacity for undersupplied technology type ***– key difference to overall design 2***
6. Approach to project attrition	Project attrition associated with the 2030 pathway(s): • determine if any appropriate projects (i.e., as close to like-for-like replacement as possible) in the connections queue within the 2031-2035 pathway could accelerate their delivery timetable to replace the project that has exited the queue - same as overall design 2 • Project attrition associated with the 2031-35 pathway – we would accelerate appropriate projects (by technology, location and capacity) from the 2036+ queue ***– key difference to overall design 2***
7. Optimal use of the network	• No recommendation as yet **–** *same as overall design 2*

Key changes in the detail of the methodologi within overall design 3 (2/3)

The table below outlines the principal distinctions between overall design 3 and overall design 2 when the applying the variables

Variable	Approach under overall design 3
8. Transition to SSEP1	• Projects in the new, reformed connections queue that go beyond the capacity (by technology and location) of the 2035 pathway in the CP30 Plan may see their project pushed further down the queue once SSEP is introduced (i.e., delaying its connection date, potentially into the 2040s), or removed from the queue entirely (e.g., if a project is in a location or technology not required under SSEP) ***- key difference to overall design 2*** • This would require retrospective action (and further code change) once SSEP is introduced to reorder or reduce the post-2035 connections queue ***- key difference to overall design 2***
9. Does Government CP30 Plan alignment apply to Transmission and Distribution?	• CP30 Plan alignment should apply to all Transmission connected and some Distribution connected projects, specifically those Distribution connected projects that are in scope of TMO4+ as set out in the proposed code modifications – same as overall design 2 • DNOs determine the 'ready' projects within their network regions which align with the distribution mix set out within the pathways in Government's CP30 Plan prior to assessment of the combined queue – same as overall design 2
10. Is there a spatial element to Government CP30 Plan alignment?	• Zones should be included within the Government's plan for both relevant distribution (based on DNOs' licence areas) and transmission connected projects (based on zones which align with strategic planning exercises) – same as overall design 2
11. How do we order projects in the new queue to determine alignment with CP30 Plan	• Preserve the current relative positions of 'ready' projects within the queue; but the planning status of each project will play an important role in identifying those projects that align with the 2030 pathway(s) – same as overall design 2
12. Are the categories for technologies within pathways the same as in Government CP30 Plan?	• Categorisation of technologies within our framework will align to Government's CP30 Plan – same as overall design 2
13. Does a project that has a Connection Point and Capacity reserved at Gate 1 count towards Government CP30 Plan alignment?	• Projects that have a Connection Point and Capacity reserved at Gate 1 should count towards alignment with CP30 Plan pathways – same as overall design 2

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Key changes in the detail of the methodologi within overall design 3 (3/3)

The table below outlines the principal distinctions between overall design 3 and overall design 2 when the applying the variables

Variable	Approach under overall design 3
14. Should capacity limits by technology/location be set for each year of a pathway?	• it is most appropriate to align the connections queue with the CP30 Plan pathways in five-year blocks. The first block would be to 2030, as per the pathway(s) in Government's CP30 Plan, with the second block from 2031 to 2035, also as per the CP30 Plan – same as overall design 2
15. Are capacity limits based on installed capacity?	• When allocating projects against the pathways within Government's CP30 Plan, we intend to use each project's contracted export capacity – same as overall design 2
16. How do we replace projects that exit the queue?	**Projects aligned to the 2030 pathway(s) in the CP30 Plan** Align replacements of projects that exit the queue as much as possible with CP30 pathway(s): • 'Offer acceleration to a 'like for like' project lower in new queue' in cases where a 2030 pathway project can be replaced by a 2035 pathway project – same as overall design 2 • 'Offer capacity to next 'like for like' project that meets Gate 2 criteria' only – same as overall design 2 **Projects aligned to the 2035 pathway in the CP30 Plan** • Assess the reason for the project exiting the queue to determine whether replacing it on a 'like for like' basis is appropriate – same as overall design 2
17. What happens where part of a project's capacity exceeds a pathway limit?	• Where the capacity of the final project to meet the 2030 pathway(s) (by technology and location) partially meets the capacity of the pathway(s), but in so doing exceeds the capacity of the pathway(s), then this is permitted – same as overall design 2 • Where the capacity of the final project to meet the 2035 pathway (by technology and location) partially meets the capacity of the pathway(s), but in so doing exceeds the capacity of the pathway(s), then this is permitted - ***key difference to overall design 2***
18. What is our approach for hybrid projects?	• Hybrid projects (i.e. projects that have a combination of more than one technology) should be managed based on their system behaviour and impact – same as overall design 2

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Appendix:
(C) Our data journey and assumptions

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Our data journey

We recognise that having accurate data to inform our decision making is critical to implement the optimal connections reform, therefore the below outlines how we have maximised the quality and quantity of data that informs the design proposals in this consultation.

March 2024: We began development of Connections 360[31] capability, which has allowed us to compare the current queue with CP30 Plan scenarios

March 2024: issued RFI to industry - to gather project data, to understand readiness of projects in the current queue

July 2024: gathered planning data from local authorities (through Regen), to enable a cross-check against the RfI data on which projects have land

August 2024: We collaborated with DNOs to get the latest project specific data

September 2024: Re-issue RFI specifically to Tx projects did not respond to the RfI or those that were not matched.

October 2024: NESO launched Connections 360 to enhance visibility of current queue data, including location.

Ongoing: Work together across NESO to inform current build capacity and align on the CP30 Plan data assumptions

On going cross-checking against the TEC register as a further source of data

[31] Connection 360 is a portal that provide customers with greater insight into GB connections landscape, allowing for more informed applications.

Modelling Assumptions and Limitations (1/2)

In reading the analysis that has been undertaken, please consider the following assumptions and limitations.

Assumptions		
Modelling	What was assumed	The model does not account for projects that will disconnect before 2030/2035.
	Why	There is insufficient information on which projects may disconnect and when. Projects may not disconnect even when assets reach end of life, new projects could be developed at the same site. Any implementation of connections reform will need to take into account where projects disconnect from the system.
Current built capacity	What was assumed	The latest publication of current capacity (at end of 2023) was updated with 11 projects built up to June 2024. Note the 2023 built capacity differs from the built capacity in combined Connections register (117GW and 76GW respectively).
	Why	2023 capacity is consistent with NESO's published view and update is consistent with internal models and other areas of ESO, comprising NESO's up-to-date view.
Capacity by project	What was assumed	The contracted connection capacity is the generation capacity of the project.
	Why	Contracted connection capacity represents maximum instantaneous import/export from network and limited information on any more/less capacity behind the meter. In the future, decisions regarding individual projects will be based on the specifics of those projects i.e. the information the developer provides regarding their project. We will use this information to consider how the project aligns with the criteria for entry into the reformed queue.
Capacity beyond 2030	What was assumed	Clean Power 2030 will drive the need for projects in the connections queue until 2035. These models do not account for any changes to connected capacity as a result of the first Strategic Spatial Energy Plan (SSEP).
	Why	Details of SSEP are not refined enough to include at this time.

Modelling Assumptions and Limitations (2/2)

In reading the analysis that has been undertaken, please consider the following assumptions and limitations.

Assumptions		
Treatment of hybrid projects	What was assumed	Projects from connections queue are grouped to match CP2030 technology categories, however note that this distorts the impact of hybrid projects. As many of these hybrid projects include storage, without technology grouping there could be an increase in the capacity of storage in the queue and decreased capacity of generation (potentially skews the data towards generation and away from storage.) The connections queue's 241GW of hybrid projects have been categorised to exclude battery capacity and assume all contracted capacity will be met by the most common generation technology. For example there are 140GW of hybrid solar-battery projects, which will be categorised as solar and added to the 9GW solar only.
	Why	Capacity split between technology types behind the meter is not necessarily known. In the future, decisions regarding individual projects will be based on the specifics of those projects i.e. the information the developer provides regarding their project. We will use this information to consider how the project aligns with the criteria for entry into the reformed queue.
Locational Modelling	What was assumed	Scenario analysis is on a national and technology type level.
	Why	We do not have a consistent view to combine location with technology type.
Technology Type	What was assumed	The technology types have been normalised to the Transmission Entry Capacity (TEC) and Distribution queue registers to 9 technology types. The normalising of technologies has removed complexities, such as hybrid sites, where we have assumed the capacity is all used by the most common generation technology.
	Why	Distribution data only shows a summarised view of technologies. Our distribution and transmission data do not show behind the meter export and import per technology.
Queue Visibility	What was assumed	The TEC Register[1], Interconnector Register[2], CP30 Plan Data Workbook, distribution data, and internal datasets reflect the connection queue. We assume that the technology type, contracted capacity, and connection dates listed are reflective of the projects characteristics. Due to time constraints, we were not able to incorporate DRC data or project specific DNO data, instead using aggregated data sources. Note from our distribution data source there are 67GW which do not have dates assigned and therefore are excluded from our analysis which may reduce the generation capacity shown in the queue compared to reality.
	Why	In reality, the data sources shown will not reflect the entire connection queue, but are the most up-to-date and complete data available at the time of the modelling for this report. These sources provide a high-level view of the queue for comparison to CP30. The data will continue to be updated as Connections Reform is implemented.

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Appendix:
(D) How overall design 1 might work in practice

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Overall design 1: Overview

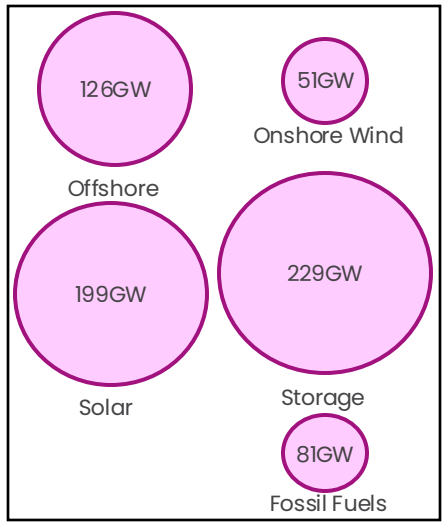
Overall Design 1: Current TMO4+ proposals for existing projects and prioritisation for new projects

This design is based on the TMO4+ proposals (Gate 2 readiness only), with no options for applying any alignment to the CP30 Plan to the current queue, or as part of the Gate 2 to the whole queue exercise in Q2 2025.

Under this design CP30 Plan or SSEP alignment would confer prioritisation to new projects entering the new queue under future enduring Gate 1 and 2 windows (i.e., after the Gate 2 to the whole queue exercise), once the CP30 Plan or SSEP have been introduced.

Overall design 1: How Gate 2 to the whole queue would work

Current queue



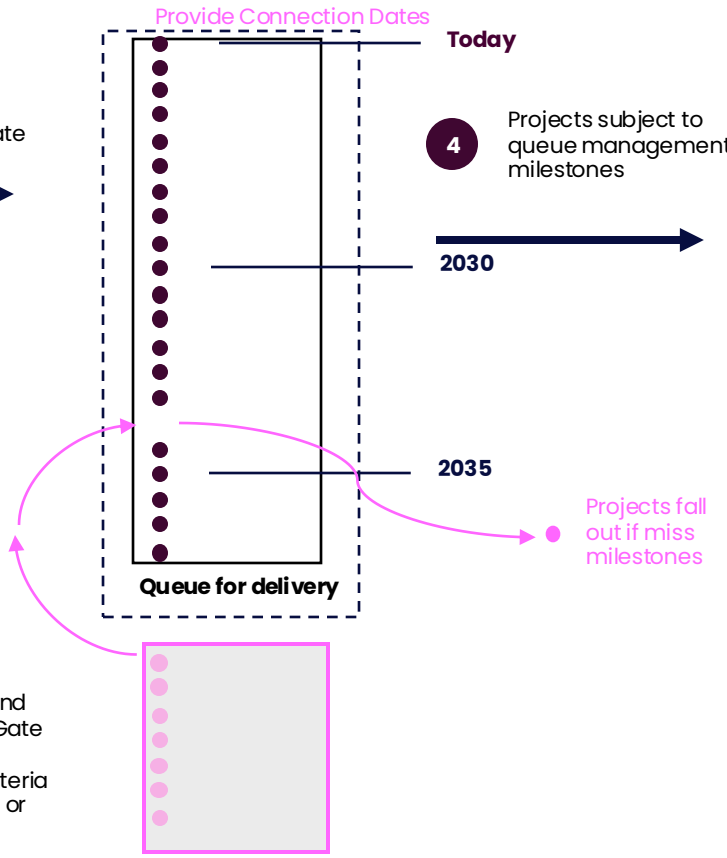
Projects arranged into technologies & locations

1. Projects apply to Gate 2
2. Apply Gate 2 Readiness criteria

Projects ordered based on their relative current queue order by readiness, prioritising designated projects and those able to accelerate if capacity allows

3. Establish Connection Date

New queue



Other projects are at Gate 1 and have indicative dates.

Projects can pass Gate 2 in future windows and receive a firm date / queue position if meet Gate 2 'readiness' criteria and:

i. Meet the Gate 2 strategic alignment criteria (CP30 Plan aligned, Designated project or transmission-connected demand; or
ii. Needed for SSEP1 pathway

Queue for delivery:
Capacity in the queue is likely more than needed for 2030 (and may be more than needed in 2050 in some locations / technologies)

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Overall design 1: Benefits

This would deliver the following benefits:

Benefits
Design 1 supports our connections reform objectives by aligning directly with some of the needed Connection Action Areas in the CAP by: 1) raising entry requirements; (2) removing stalled projects; (3) better utilising existing network capacity; and (4) better allocating available network capacity.
Design 1 is based on the current TMO4+ proposals, which means there is continuity in the process without introducing new alignment requirements for CP30 Plan or SSEP to the current queue. This could be beneficial for projects already in the queue, particularly those with earlier connection dates.
Design 1 continues to test project readiness through planning milestones, which helps ensure that only viable and ready projects progress in the queue.

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Overall design 1: Risks and Mitigations

Although overall design 1 offers some benefits, there are significant associated risks, for which we have outlined potential mitigation actions.

Risks	Mitigation actions
Risk that **projects in the new queue may not be aligned with SSEP** – this uncertainty may significantly **impact investor appetite** in those projects, e.g., due to the risk of needing further retrospective action to reduce/reorder the queue because of SSEP	• **Project developers with projects beyond the pathway(s) in the CP30 Plan would need to take the risk of non-alignment with the SSEP**. In practice this would mean that developers of projects in the new, reformed connections queue that go beyond the capacity (by technology and location) of the 2035 pathway in the CP30 Plan may see their projects pushed further down the queue once SSEP is introduced (i.e., delaying connection dates, potentially into the 2040s), or removed from the queue entirely (e.g., if a project is in a location or technology not aligned to the pathway(s) in SSEP). A potential mitigation of this risk for project developers would be **early sight of the SSEP pathway(s) and enhanced communication** with project developers and investors, being transparent about the risks involved with misalignment
Risk of **challenge from project developers** or **uncertainty in the industry**, reducing **overall investment appetite** due to lack of clarity on which projects align to the CP30 Plan pathways (and in due course SSEP). This needs to be **justifiable and transparent.**	• We consider that this risk is **mitigated to some extent through a combination of the CP30 Plan (once published), this document and the connections methodologies**: Gate 2 Criteria Methodology, Designated Projects Methodology and Connections Network Design Methodology (CNDM). • However, the **risk of retrospective action** via the SSEP (as referred to above) means that there may be a **greater risk of challenge once SSEP is introduced.**
Risk of **network companies designing and building uneconomic and inefficient networks**	• Only mitigating action would be to **push projects not aligned with the SSEP further down the queue once SSEP is introduced** (i.e., delaying connection dates, potentially into the 2040s), **or removing them from the queue entirely** (e.g., if a project is in a location or technology not aligned to the pathway in SSEP). Unless the connections agreements for projects not aligned with the SSEP were removed then network companies would ultimately be compelled to deliver necessary transmission reinforcements
Risks **not delivering the projects aligned to CP30 Plan and/or SSEP on time** as they could be stuck behind other projects in the queue.	• Use the **Project Designation Methodology to accelerate some projects** (noting that this would not cover most projects within scope of the CP30 Plan or SSEP).

Appendix:
(E) Assessment of overall designs 1, 2 and 3 against CDB's criteria

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Evaluation criteria to assess each of the designs

The Connections Delivery Board (CDB) oversees the delivery of improvements to the GB connections process to significantly reduce connection timescales. The purpose of the CDB is to help inform and support efficient design and delivery of changes to the GB connections process (at transmission and distribution level). As part of this Board, assessment criteria were established to measure the effectiveness of the changes that could be introduced into the connections process. We have conducted a detailed assessment of the three overall designs against the CDB's assessment criteria, to inform our final recommendation.

CDB Criteria

- ✓ Measure provides impact via one or more of the six connection action areas
- ✓ Measure reduces average connection timescales
- ✓ Measure leads to better allocating the scarce resource of capacity
- ✓ Measure delivers benefits to current and future consumers
- ✓ Measure improves connection customers' experience
- ✓ Measure begins to deliver as soon as possible
- ✓ Measure supports improved coordination across system boundaries
- ✓ Measure supports wider strategic goals - net zero / economic growth

Evaluation criteria to assess each of the designs: Design 1

Criterion	Description	RAG	Commentary
Measure provides impact via one or more of the six connection action areas	(1) raises entry requirements; (2) removes stalled projects; (3) better utilises existing network capacity; (4) better allocates available network capacity; (5) improves data and processes and sharpens obligations and incentives; and (6) enables alignment with strategic planning and market reform policy		Relies on the market to deliver the most efficient mix of projects, which risks not delivering an efficient, robust and operable Clean Power system by 2030.
Measure reduces average connection timescales	• Supports average transmission connection dates being no more than 6 months beyond the date requested by the customer • Prioritises the greatest bulk GW accelerated		Without alignment to the CP30 Plan or SSEP, projects that are critical to meeting strategic energy goals may not receive the prioritisation needed to expedite their connection timescales. With more projects in the new queue, there is less likelihood of those projects receiving reduced connection dates
Measure leads to better allocating the scarce resource of capacity	• The 'right' projects can connect quicker recognising the different nature and status of connections • Quicker connections for projects progressed on their merits e.g. readiness and/or strategic priority		Projects that are less critical or that may eventually be terminated could block capacity that would otherwise be available for projects with higher strategic value, leading to suboptimal allocation of resources
Measure delivers benefits to current and future consumers	• Costs are efficiently distributed and are proportionate to expected benefits • Ensures customer services are accessible, transparent and responsive and consumers are protected from harm • Supports a low-cost transition to net zero • Facilitates a safe, secure, resilient net zero system		The lack of prioritisation for strategically important projects could slow down or otherwise make the transition to net zero less efficient, potentially resulting in higher long-term costs and missed opportunities for current and future consumers.
Measure improves connection customers' experience	• Improves (or at least does not worsen) the service that customers receive		All developers of 'ready' projects can enter the new queue; however, project developers face the risk of further retrospective action to the new queue to remove or deprioritise projects that are not aligned with / not needed by SSEP
Measure begins to deliver as soon as possible	• Can be implemented in a timely and efficient manner • Implementation risks are proportionate and manageable		This design can be implemented quickly as it is based on existing proposals.
Measure supports improved coordination across system boundaries	• Supports consistent outcomes across Transmission and Distribution networks • Takes a whole system approach facilitating interactions with other markets e.g. natural gas, hydrogen and CCUS		Common treatment and consistent outcomes across Transmission and Distribution but does not support a strategic whole system approach.
Measure supports wider strategic goals - net zero / economic growth	• Facilitates timely progress toward a fully Clean Power system by 2035 • Supports investment and economic growth		By not prioritising projects that are critical to the energy transition, this design may slow down or otherwise hinder efficient progress towards achieving a fully Clean Power system.

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Evaluation criteria to assess each of the designs: Design 2

Criterion	Description	RAG	Commentary
Measure provides impact via one or more of the six connection action areas	(1) raises entry requirements; (2) removes stalled projects; (3) better utilises existing network capacity; (4) better allocates available network capacity; (5) improves data and processes and sharpens obligations and incentives; and (6) enables alignment with strategic planning and market reform policy		This design prioritises projects that are 'ready' and aligned to the CP30 Plan , effectively raising entry requirements and ensuring that only projects with a higher likelihood of completion and strategic importance or system value are in the new queue.
Measure reduces average connection timescales	• Supports average transmission connection dates being no more than 6 months beyond the date requested by the customer • Prioritises the greatest bulk GW accelerated		Ensures network companies design and build economic and efficient coordinated networks, focusing on the most strategically important projects, ensuring that those projects can connect more quickly.
Measure leads to better allocating the scarce resource of capacity	• The 'right' projects can connect quicker recognising the different nature and status of connections • Quicker connections for projects progressed on their merits e.g. readiness and/or strategic priority		Ensures that network capacity is allocated to projects that are most critical for achieving strategic energy goals, therefore optimising the use of this scarce resource.
Measure delivers benefits to current and future consumers	• Costs are efficiently distributed and are proportionate to expected benefits • Ensures customer services are accessible, transparent and responsive and consumers are protected from harm • Supports a low-cost transition to net zero • Facilitates a safe, secure, resilient net zero system		Focuses on projects that align with the CP30 Plan (and in due course SSEP), thereby maximising the benefits that these can deliver
Measure improves connection customers' experience	• Improves (or at least does not worsen) the service that customers receive		Provides clarity and prioritisation for investors and developers; however, developers of 'ready' projects in oversupplied technologies/locations may not be able to progress their projects.
Measure begins to deliver as soon as possible	• Can be implemented in a timely and efficient manner • Implementation risks are proportionate and manageable		The successful implementation of this design is contingent on the timely and robust development of the CP30 Plan and timely and efficient alignment to this via the connections methodologies
Measure supports improved coordination across system boundaries	• Supports consistent outcomes across Transmission and Distribution networks • Takes a whole system approach facilitating interactions with other markets e.g. natural gas, hydrogen and CCUS		Takes a strategic approach that can facilitate coordination. Care will need to be taken to ensure consistent application across Transmission and Distribution
Measure supports wider strategic goals - net zero / economic growth	• Facilitates timely progress toward a fully Clean Power system by 2035 • Supports investment and economic growth		Directly aligns with the CP30 Plan and prepares for SSEP, supporting net zero goals.

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Evaluation criteria to assess each of the designs: Design 2

Criterion	Description	RAG	Commentary
Measure provides impact via one or more of the six connection action areas	(1) raises entry requirements; (2) removes stalled projects; (3) better utilises existing network capacity; (4) better allocates available network capacity; (5) improves data and processes and sharpens obligations and incentives; and (6) enables alignment with strategic planning and market reform policy		This design might not optimise the use of existing network capacity, as less critical projects could use space that could be used for projects with higher strategic value.
Measure reduces average connection timescales	• Supports average transmission connection dates being no more than 6 months beyond the date requested by the customer • Prioritises the greatest bulk GW accelerated		The prioritisation of projects based on readiness and CP30 alignment to 20235 can help reduce connection timescales for those projects, but the impact may be limited by the inclusion of all 'ready' projects, which could still lead to a crowded queue and delays for SSEP aligned projects.
Measure leads to better allocating the scarce resource of capacity	• The 'right' projects can connect quicker recognising the different nature and status of connections • Quicker connections for projects progressed on their merits e.g. readiness and/or strategic priority		The inclusion of all 'ready' projects, regardless of their strategic value, may result in some capacity being allocated to projects that are not as critical for the energy transition under SSEP, potentially leading to suboptimal outcomes.
Measure delivers benefits to current and future consumers	• Costs are efficiently distributed and are proportionate to expected benefits • Ensures customer services are accessible, transparent and responsive and consumers are protected from harm • Supports a low-cost transition to net zero • Facilitates a safe, secure, resilient net zero system		By including a wider range of projects, could potentially deliver a broader set of benefits to consumers, but this may come at the cost of not focusing on the projects that would deliver the most strategic and long-term benefits in the post 2035 period
Measure improves connection customers' experience	• Improves (or at least does not worsen) the service that customers receive		All developers of 'ready' projects can enter the new queue; however, project developers face the risk of further retrospective action to the new queue to remove or deprioritise projects that are not aligned with / not needed by SSEP
Measure begins to deliver as soon as possible	• Can be implemented in a timely and efficient manner • Implementation risks are proportionate and manageable		The successful implementation of this design is contingent on the timely and robust development of the CP30 Plan and timely and efficient alignment to this via the connections methodologies
Measure supports improved coordination across system boundaries	• Supports consistent outcomes across Transmission and Distribution networks • Takes a whole system approach facilitating interactions with other markets e.g. natural gas, hydrogen and CCUS		Takes a strategic approach that can facilitate coordination. Care will need to be taken to ensure consistent application across Transmission and Distribution
Measure supports wider strategic goals - net zero / economic growth	• Facilitates timely progress toward a fully Clean Power system by 2035 • Supports investment and economic growth		Although not exclusively focused on strategic projects, the design does prioritise projects aligned to the CP30 Plan

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