



Department for  
Energy Security  
& Net Zero

# Capacity Market

Call for Evidence on proposals to maintain security of supply and enable flexible capacity to decarbonise

Closing date: 10 December 2024



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Any enquiries regarding this publication should be sent to us at: [futureelectricitysecurity@energysecurity.gov.uk](mailto:futureelectricitysecurity@energysecurity.gov.uk)

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# 1. General information

## 1.1 Why we are calling for evidence

The security of our electricity supply is key to successful delivery of the Clean Energy Superpower Mission and one of its key pillars - clean power by 2030. In this Call for Evidence (CfE), we are seeking views to inform changes to the Capacity Market to create additional pathways for unabated gas plants to decarbonise and to create a longer-term view of future capacity. These proposals complement the broader strategic questions considered through the Review of Electricity Market Arrangements (REMA).

## 1.2 Call for Evidence details

**Issued:** 15 October 2024

**Respond by:** 10 December 2024

**Enquiries to:** Electricity & Market Arrangements  
Future Electricity Security Team  
Department for Energy Security and Net Zero  
3-8 Whitehall Place  
London  
SW1A 2EG

Email: [futureelectricitysecurity@energysecurity.gov.uk](mailto:futureelectricitysecurity@energysecurity.gov.uk)

**Call for Evidence reference:** Capacity Market: Call for Evidence on proposals to maintain security of supply and enable flexible capacity to decarbonise

**Audiences:** We are seeking the views of the energy industry, consumer groups, academia, think tanks and other organisations who have an interest in security of supply and decarbonisation.

**Territorial extent:** Great Britain. The Capacity Market is in place across Great Britain. Energy is a devolved matter for Northern Ireland.

## 1.3 How to respond

We strongly encourage respondents to make use of the online platform wherever possible when submitting responses as this is the government's preferred method. This method also allows you to submit a single, combined response to both this Call for Evidence and the associated consultation referred to below, should you wish to respond to both. Alternatively, responses in writing or via email will also be accepted.

To ensure your response is most effective in aiding government policy development, it is crucial that responses are framed as direct responses to the questions posed, supported by evidence where possible.

When responding, please state whether you are responding as an individual or representing the views of an organisation.

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**Respond online at:** <https://energygovuk.citizenspace.com/energy-security/capacity-market-security-supply-flexible-capacity>

## 1.4 Confidentiality and data protection

Information you provide in response to this CfE, including personal information, may be disclosed in accordance with UK legislation (the Freedom of Information Act 2000, the Data Protection Act 2018 and the Environmental Information Regulations 2004).

If you want the information that you provide to be treated as confidential, please tell us, but be aware that we cannot guarantee confidentiality in all circumstances. An automatic confidentiality disclaimer generated by your IT system will not be regarded by us as a confidentiality request.

We will process your personal data in accordance with all applicable data protection laws. See our [privacy policy](#).

We will summarise all responses and publish this summary on [GOV.UK](#). The summary will include a list of names or organisations that responded, but not respondent's personal names, addresses or other contact details.

If you have any complaints about the way this CfE has been conducted, please email: [bru@energysecurity.gov.uk](mailto:bru@energysecurity.gov.uk).

## 2. Executive Summary

Making Britain a Clean Energy Superpower is one of the Prime Minister's five defining missions. There are two parts to this mission: delivering clean power by 2030 and accelerating delivery of net zero. The security of our electricity supply will be key to delivering this mission.

Achieving clean power by 2030 will mean we will rely increasingly on a renewables-led system as a foundation for a decarbonised grid. The government will work with the private sector to accelerate the deployment of low carbon technologies. We will invest in clean generation technology and ensure the country has the energy storage it needs. Investing in clean energy at speed and scale can help tackle the climate crisis, create good jobs and is the only route to protect billpayers and ensure energy security.

The government has also set up Great British Energy, a publicly-owned energy company, designed to drive clean energy deployment, boost energy independence, create jobs and ensure UK taxpayers, billpayers and communities reap the benefits of clean, secure, home-grown energy.

Delivering clean power by 2030 will mean that unabated gas generation will phase down. Long duration flexible capacity (capacity that can be increased or decreased so that supply matches demand and which is able to run for prolonged periods) will remain vital for security of supply. The National Energy System Operator (NESO, which replaced the National Grid Electricity System Operator on 1 October 2024) estimates that the GB electricity system could require 40 to 50GW of long duration flexible capacity in 2030.<sup>1</sup> NESO's modelling was commenced prior to the general election and does not assume the delivery of clean power by 2030, however, these results are still likely to be informative of the level of flexible capacity the GB system could need at this time.

Low carbon flexible technologies – power with Carbon Capture, Usage and Storage (power CCUS), hydrogen to power (H2P), and Long Duration Electricity Storage (LDES) – will be deployed as quickly as possible to deliver long duration flexibility. However, during the transition period we will continue to utilise unabated gas generating capacity, which will move to a backup role to maintain security of supply.

We are therefore seeking views to inform future changes to the Capacity Market (CM), aiming to support the conversion of unabated gas plants to low carbon technology and maintain the security of our electricity supply. Specifically, we are seeking evidence on:

- Managed exits pathways that could be implemented in the future to enable decarbonisation of unabated gas.
- Future options for developing NESO's modelling of longer-term capacity needs to include indicative future capacity targets out to the T-8 delivery year (2032/33).

Alongside this CfE, we are simultaneously consulting on changes<sup>2</sup> that are also intended to support investment in, and decarbonisation of, flexible capacity. Specifically, we are consulting on proposed changes that would:

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<sup>1</sup> Capacity estimates for long duration flexible technologies include H2P, gas with and without CCUS, and LDES. All figures come from NESO's 2024 Future Energy Scenarios and are given in terms of installed capacity. See NESO, '[Future Energy Scenarios 2024](#)', July 2024

<sup>2</sup> DESNZ, '[Capacity Market: Consultation on proposals to maintain security of supply and enable flexible capacity to decarbonise](#)', Oct 2024

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- Lower the capital expenditure threshold for ‘refurbishing’ three-year CM agreements to support the economic case for investment to extend the life of ageing plants. This is important to mitigate short-term risks to electricity security whilst we focus on scaling up low carbon flexible capacity and supporting infrastructure.
- Ensure that all substantially refurbishing or new combustion power plants participating in the 2026 T-4 CM auction have a credible plan in place to decarbonise through converting to either H2P or power CCUS before they become operational.
- Introduce a managed exit pathway to enable unabated gas generators to decarbonise by allowing multi-year CM agreement holders to exit and transfer to a Dispatchable Power Agreement (DPA), enabling conversion to power CCUS.

These proposed changes will complement existing programmes to support the development and deployment of low carbon flexible capacity. This includes:

- The publication of a government response to the Decarbonisation Readiness Consultation alongside this CfE, and the laying of associated enabling legislation in Parliament in October 2024 to ensure new build and substantially refurbished combustion power plants are built ready to convert to hydrogen-firing or retrofit carbon capture technology within the plant’s lifetime;<sup>3</sup>
- The publication of a policy update in October 2024, alongside this CfE, on plans to strengthen security of supply and accelerate investment in low carbon technologies through the CM Phase 2 Reforms;<sup>4</sup>
- The continued deployment of power CCUS through the CCUS cluster sequencing process supported by the DPA, and the development of competitive allocation for CCUS as outlined in the CCUS Vision;<sup>5</sup>
- The publication of a consultation in December 2023 by the previous government on the need and design for a H2P market intervention, setting out the minded-to position that a H2P business model (H2PBM), based on elements of the power CCUS DPA and adapted for H2P, could mitigate the identified barriers through de-risking investment;<sup>6</sup>
- The publication of a consultation response in October 2024, setting out plans to develop a cap and floor scheme to provide greater revenue certainty for investors in LDES. Ofgem has agreed to act as LDES regulator following the government’s request; this was the approach favoured by industry.<sup>7</sup>

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<sup>3</sup> DESNZ, ‘[Decarbonisation readiness: updates to the 2009 Carbon Capture Readiness requirements](#)’, Oct 2024

<sup>4</sup> DESNZ, ‘[Capacity Market 2023: Phase 2 proposals and 10 year review](#)’, Oct 2024

<sup>5</sup> DESNZ, ‘[Carbon capture, usage and storage: a vision to establish a competitive market](#)’, Dec 2023

<sup>6</sup> DESNZ, ‘[Hydrogen to power: market intervention need and design](#)’, Dec 2023

<sup>7</sup> DESNZ, ‘[New scheme to attract investment in renewable energy storage](#)’, Oct 2024

### 3. Introduction

Reliable energy supplies are fundamental for the economy, society and public services. Since its introduction in 2014, the CM has secured sufficient capacity to ensure consistent and reliable electricity generation. The CM has complemented the deployment of renewable and low-carbon energy by ensuring electricity security of supply in Great Britain.

As we seek to deliver the Clean Energy Mission and - as a core part of this Mission - clean power by 2030, renewables will make up a larger proportion of total capacity. The variable nature of renewables makes it critical that there is a significant amount of flexible capacity available to be deployed when renewable generation is reduced (for instance, on still, dark winter days). NESO estimates that the GB electricity system could require 30 to 40GW of short duration flexible capacity and 40 to 50GW of long duration flexible capacity in 2030 to ensure security of supply.<sup>8</sup> NESO's modelling was commenced prior to the general election and does not assume the delivery of clean power by 2030, however, these results are likely to be informative of the level of flexible capacity the GB system could need at this time.

Low carbon flexible technologies, including LDES, power CCUS and H2P, will be deployed as quickly as possible to fulfil this role, but deployment still requires time. Whilst we focus on scaling up low carbon flexible capacity and supporting infrastructure, there is still a need to provide sufficient flexible capacity to ensure a secure electricity supply. We will need to rely on existing mature technologies, including unabated gas, which will move to a backup role.

We are seeking evidence to inform future changes to the CM that are intended to support investment in, and decarbonisation of flexible capacity:

#### **Additional routes to decarbonisation**

- The government recognises that the decarbonisation pathway best suited to a particular unabated plant could be dependent on a variety of factors. We are calling for evidence to inform the policy development of potential decarbonisation pathways.

#### **Creating a longer-term view of future capacity supply and demand**

- As the grid decarbonises, it is particularly important to ensure we have as much clarity regarding future capacity needs as possible. In this CfE, we are seeking views and evidence to inform the development of a longer-term view of future capacity requirements and supply. This includes potential legislative changes to the scope of information required in NESO's annual Electricity Capacity Report (ECR).

Alongside this CfE, we are simultaneously consulting on proposed changes to the CM that are also intended to support investment in, and decarbonisation of flexible capacity (see Capacity Market: Consultation on proposals to maintain security of supply and enable flexible capacity to decarbonise).<sup>9</sup> The consultation includes the following proposals:

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<sup>8</sup> Capacity estimates for long duration flexible technologies include H2P, gas with and without CCS, and LDES. Capacity estimates for short duration flexible technologies include batteries and demand-side response. All figures come from NESO's 2024 Future Energy Scenarios and are given in terms of installed capacity.

<sup>9</sup> DESNZ, '[Capacity Market: Consultation on proposals to maintain security of supply and enable flexible capacity to decarbonise](#)', Oct 2024



## **Lifetime extensions**

- We are aware that older plants reaching the end of their life might currently be unable to access multi-year CM agreements. These agreements could provide greater commercial certainty to underpin the upfront capital cost of work to extend the plant's operating life. We are consulting on a proposal to lower the capex threshold for three-year CM agreements to support the retention of existing Capacity Market Units (CMUs) that have a role to play in ensuring security of supply.

## **Decarbonisation Readiness (DR)**

- We have published a DR government response<sup>10</sup> setting out requirements for substantially refurbishing or new build combustion power plants, including unabated gas, biomass, energy from waste and combined heat and power plants (CHP). These plants will need to demonstrate a credible pathway to decarbonise by ensuring that they can easily convert to hydrogen-firing or retrofit carbon capture technology within the plant's lifetime. The associated legislation is provisionally expected to come into force from 28 February 2026. The proposal we are consulting on aims to ensure CM applicants prequalifying ahead of the DR legislation being implemented but falling within the scope of it, demonstrate compliance.

## **Providing clear and viable routes to decarbonisation**

- At present there is no route to enable unabated gas plants with existing multi-year CM agreements to decarbonise should they wish to once decarbonisation options are available. This is because Capacity Providers remain locked into their existing CM agreements, some not ending until the 2040s. The government is committed to creating pathways to ensure unabated gas plants can decarbonise as and when the enabling low carbon infrastructure expands.
- In the consultation, we propose to introduce an initial version of managed exits to enable unabated gas plants to decarbonise by allowing multi-year CM agreement holders to exit and transfer to a DPA, enabling conversion to power CCUS.

We encourage respondents to review both the CfE and the consultation in tandem (a single, combined response can be made using the online platform). Please note that the executive summary and introductions of both are duplicative, so when reading the consultation you can skip forward to section 4 if you have already read this document.

## **Progress in reducing connection timelines**

Delays in obtaining grid connections are a known constraint on the delivery of new energy generation facilities, including low carbon flexible technologies and unabated gas generation. New projects entering the connections queue are routinely offered connection dates in the mid to late 2030s, which is a major challenge to address as part of delivering clean power by 2030.

The Connections Action Plan set out a package of reforms to the connections process that has led to 19GW of projects being offered earlier connection dates (by an average of 6 years) while a further 51GW may also receive accelerated connection dates throughout 2024. Further reforms are being developed by NESO in consultation with stakeholders to raise requirements

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<sup>10</sup> DESNZ, '[Decarbonisation readiness: updates to the 2009 Carbon Capture Readiness requirements](#)', Oct 2024

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to obtain and retain a connection agreement. These reforms are currently being progressed via modifications to industry codes and licences, with a decision by Ofgem expected in early 2025. Subject to approval of these changes within that timescale, improved connection offers (for those able to accelerate their connections) could be issued by late 2025.

Alongside the standard route for connections, these changes would also give NESO the power to offer accelerated connections to projects it designates as critical for system operation or security of supply. Further details on these changes can be found within the [code modification consultations](#) recently published by NESO.

## 4. Additional decarbonisation pathways for CMUs

Converting existing unabated gas to power CCUS or H2P could support the roll-out of low carbon flexible generation. The government is committed to setting out clear and viable routes for unabated gas to decarbonise.

In January 2023, the previous government called for evidence on barriers to decarbonising existing CMUs, inviting views on enabling Capacity Providers to leave their multi-year agreements early to decarbonise, subject to security of supply considerations.<sup>11</sup> The responses highlighted the need for clarity on decarbonisation pathways and specifically for allowing unabated gas generators to exit their CM agreements to access bespoke support or to secure new CM agreements after converting to low carbon.<sup>12</sup> Currently, unabated gas capacity is unable to permanently leave a CM agreement without penalty. This acts as a disincentive for Capacity Providers to decarbonise prior to the completion of their CM agreements, which could be as late as the 2040s.

### 4.1 Context

To ensure security of supply, Capacity Agreements can only be ended by termination. CMUs can only permanently leave their capacity obligation without being subject to termination fees in very specific circumstances. This includes the route for CMUs to be terminated from the CM in order to be eligible to bid into a Contracts for Difference (CfD) Allocation Round. There is currently no route to enable unabated gas CMUs in multi-year agreements to take immediate steps to decarbonise should they wish to once decarbonisation options are available.

Alongside this CfE, we are simultaneously consulting on the government's proposal for a first managed exit pathway (see Capacity Market: Consultation on proposals to maintain security of supply and enable flexible capacity to decarbonise<sup>13</sup>):

- **Pathway A:** Exiting a multi-year CM agreement and transferring to a DPA (enabling conversion to power CCUS).

The government recognises that the decarbonisation pathway best suited to a particular unabated gas plant could be dependent on a variety of factors including the length of the CM agreement it holds, as well as the plant's size, age, configuration, location and access to transport and storage (T&S) infrastructure.

This CfE is intended to support the development of greater optionality for further managed exits pathways in addition to pathway A. We are seeking evidence and feedback on three potential decarbonisation pathways which require further policy development prior to being formulated as consultation proposals, set out below:

- **Pathway B:** Exiting a multi-year CM agreement and transferring to a H2PBM (enabling conversion to H2P).

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<sup>11</sup> DESNZ, '[Capacity Market 2023 Consultation: strengthening security of supply and alignment with net zero](#)', Jan 2023

<sup>12</sup> DESNZ, '[Capacity Market 2023 Consultation government response: strengthening security of supply and alignment with net zero](#)', June 2023

<sup>13</sup> DESNZ, '[Capacity Market: Consultation on proposals to maintain security of supply and enable flexible capacity to decarbonise](#)', Oct 2024

- **Pathway C:** Exiting a multi-year CM agreement to transfer to a new multi-year refurbishment agreement after decarbonising, potentially with an extended outage.
- **Pathway D:** Decarbonising during a CM agreement, converting to a new technology class and derating factor, potentially with an extended outage.

We have identified pathway B as an alternative decarbonisation approach through conversion to H2P, however we acknowledge that policy development for H2P is still in its early stages and therefore we have posed more exploratory questions to understand stakeholder appetite and the details to be considered for this particular technology. Pathways C and D are more complex than pathways A and B in regard to managing capacity adequacy because transitioning capacity would not be limited by their acceptance into separate schemes. CM-to-CM pathways may also require additional outage management within delivery years and agreements. Further evidence and analysis are required in regard to Generating Technology Classes (GTCs) and capacity adequacy management within the CM.

## 4.2 Decarbonisation pathways for future development

### **Pathway B**

In December 2023, the previous government consulted on the need and design for a H2P market intervention, setting out the minded-to position that a H2P business model (H2PBM), based on elements of the power CCUS DPA and adapted for H2P, could mitigate the identified barriers through de-risking investment.<sup>14</sup> Policy positions relating to H2PBM design, including eligibility of retrofit technology, interactions with the wider hydrogen value chain and business model allocation process are being carefully considered. A consultation response will be published later this year to provide clarity on the proposed policy direction for H2P. This CfE seeks views on a managed exit pathway that would enable unabated gas to exit their multi-year CM agreements to receive bespoke support through a H2PBM, enabling the conversion to H2P. This should not be considered to reflect any finalised decision on a H2P market intervention and business model design.

This pathway could require Capacity Providers to provide evidence of being party to a H2PBM agreement to the Delivery Body in order to be terminated from their capacity obligations, through a process similar to the proposal for pathway A (see Capacity Market: Consultation on proposals to maintain security of supply and enable flexible capacity to decarbonise<sup>15</sup>).

### **Pathway C**

Leaving a multi-year CM agreement to apply for a new multi-year refurbishment agreement may be a challenging commercial decision to make, particularly if a CMU is still early on in the pre-existing CM agreement. This decision may also be influenced by the length of accessible refurbishment agreements and the derating factors applied to the decarbonised capacity, which could compound losses in nameplate capacity as a result of the conversion.

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<sup>14</sup> DESNZ, '[Hydrogen to power: market intervention need and design](#)', Dec 2023

<sup>15</sup> DESNZ, '[Capacity Market: Consultation on proposals to maintain security of supply and enable flexible capacity to decarbonise](#)', Oct 2024

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This pathway could require a Capacity Provider to secure a multi-year refurbishment agreement via a T-4 auction. Acceptance of the refurbishment agreement could act as confirmation of exiting the current multi-year agreement, with any delays to commencing delivery via the refurbishment contract being managed through pre-existing provisions such as the long stop date.

### **Pathway D**

Decarbonising whilst holding an existing CM agreement may be a smoother pathway for CMUs, however it would also require significant alterations to the current CM legislative framework. Rule 4.4.4 would need a carve out, potentially similar to Rule 4.4.4A, to enable plants to alter the configuration of their generating equipment to switch GTC, and their agreement would need to accommodate the shift in derating factors and nameplate capacity. The main difference between pathway D and pathway C would be that the CM price per kW would be guaranteed to remain the same as it was in the auction in which the agreement was originally secured. As such, this pathway would likely only be beneficial to smaller plants with lower capex requirements for conversion.

We consider that the process and timings for this pathway could work in the same way as pathway A, however given the relatively small size of the plants, there could be greater flexibility offered to those who experience delays to conversion or to the outage period itself.

**Question 1: Would you consider using pathway B, C and/or D to decarbonise a plant and what factors would influence your decision?**

**Question 2: Please provide information and evidence on the conversion type and capacity size which you believe would be suitable for each pathway, as well as the outage period required and how you would intend to manage it.**

**Question 3: What are your views on managing the risk of delays in decarbonisation under pathway B, C and D?**

**Question 4: Are there any additional risks and issues with pathway B, C and D which you can identify?**

**Question 5: Are there other pathways which we have not identified which would be required to support the decarbonisation of CMUs?**

## 5. The development of longer-term views of future capacity requirements and supply

### 5.1 Context

The years to 2030 will see a major transformation of GB's electricity system to clean power. An important objective for the government and industry is to gain as much clarity about future capacity requirements as possible, to enable timely and effective investment decisions to ensure continued security of supply.

A core plank of the current forward view of capacity needs is NESO's annual Electricity Capacity Report (ECR), which provides target recommendations for the upcoming T-1 and T-4 CM auctions. In their 2023 report on the ECR, the independent Panel of Technical Experts (PTE) recommended that NESO should consider how the CM's T-4 auction target could be informed by a longer-timescale view of procurement needs<sup>16</sup>. This would allow future auction targets to take account of emerging disruptions in the energy transition – for example, “lumpy” changes in capacity requirements as large volumes of older capacity retire. The PTE report suggests that NESO could undertake a more detailed prospective assessment of future capacity requirements out to the T-8 delivery year. Where major demand or supply disruptions are anticipated out to this T-8 horizon, the target for the relevant upcoming T-4 auction could be adjusted to take future capacity needs into account.

At present, NESO is required to provide a high-level view of future capacity requirements in the ECR by showing an approximate range of the total de-rated capacity required from the CM out to a fifteen-year ahead horizon. The ECR has to date only provided a detailed view of capacity needs out to four years ahead (to inform the decision on the T-1 and T-4 auction targets). Given the range of uncertainties involved in forecasting longer-term capacity requirements, the provision of more detailed future targets would require additional modelling work. Moreover, although NESO can make minor adjustments to auction target recommendations once they have sight of auction prequalification outcomes, this process is not designed or required to factor in broader supply-side risks for future delivery years.

The current process results in industry receiving a decisive signal about four-year ahead capacity requirements just ahead of the CM auction prequalification window opening in July. Industry then only has the short window until prequalification closes in September to respond, including by deciding whether to keep existing assets online and whether to bring forward new build assets. These timescales were initially developed around the time taken to build a new unabated gas plant. However, as we transition towards low-carbon flexible technologies that have longer lead-times, this forward view will need to be updated and extended to reflect this and provide greater clarity for investors in these technologies. Additionally, some developments are likely to impact security of supply beyond the CM's four-year ahead horizon, such as the potential retirement of large volumes of older capacity and/or any delays to new build projects coming forward. The current ECR process does not currently provide a clear longer-term

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<sup>16</sup> Panel of Technical Experts, '[National Grid ESO Electricity capacity report 2023: findings of the Panel of Technical Experts](#)', Recommendation 80, July 2023



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demand signal or visibility of future capacity tightness the market to respond to by bringing forward a capacity pipeline. Clear longer-term information could also inform policy decisions.

Following engagement with NESO, the 2024 ECR published on 22 July includes an indicative view of what target capacities might look like for the T-5 to T-8 years.<sup>17</sup> NESO's modelling is at an early stage and so has not been considered through the T-4 auction targets but the department and the PTE welcome NESO's developments in this space.

The government intends to work closely with NESO and Ofgem to consider options for:

- a) Developing this longer-term view of capacity needs to produce more robust forecast targets out to the T-8 horizon.
- b) Developing a complementary detailed assessment of supply-side risks out to this same time horizon, to inform and support forecast capacity targets.

The government considers that this workstream has significant potential to strengthen security of supply. For industry, a longer-term view of future capacity needs could provide greater clarity to investors about future market revenues to enable them to develop a robust forward capacity pipeline to deliver on future system needs. For the government, a longer-term forecast of capacity needs, coupled with a thorough supply-side assessment, has the potential to inform and enable the delivery of a secure, low carbon electricity system. This longer-term modelling could also enable the government to act on the risk of future supply and demand disruptions before they crystallise. This could either be through an adjustment of CM T-4 auction targets to secure the investment needed to ensure future security of supply, or by securing this capacity through other policy levers.

However, there are barriers to providing longer-term market signals. Where the ECR is the vehicle for providing such information, there may also be a need for changes to the CM's Regulations to facilitate NESO's provision of new or different information and to enable them and/or the government to act on this information. The government is continuing to work with Ofgem and with NESO to develop this workstream, including considering appropriate timelines and implementation routes for any new requirements. As part of this process, the government is now seeking evidence from industry on the areas set out below.

## 5.2 Areas for future development

### **Modelling longer-term targets**

Subject to priorities, resourcing considerations and legislative processes, NESO could develop their modelling of longer-term capacity targets to varying degrees of complexity. This could range from incremental developments of the approach taken in the 2024 ECR, to more significant developments which would produce sufficiently robust T-5 to T-8 forecast targets to support the adjustment of relevant T-4 auction targets. This would enable early procurement of future capacity needs. Should these developments require NESO to include expanded or

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<sup>17</sup> NESO, [Electricity Capacity Report 2024](#), July 2024

different information in the ECR, the government may need to consult on relevant regulatory changes.

While there are clear benefits in providing a longer-term and more granular view of future capacity requirements, there are also risks. For example, if these indicative targets under- or over-estimate future capacity needs, they may send a misleading signal to the market. This could result either in security of supply risks where insufficient capacity has been brought forward, or in inefficient investment in capacity. There could also be a gaming risk whereby investors could withhold capacity from the next T-4 auction if they think the indicative capacity targets for the T-5 to T-8 delivery years suggest they could achieve a higher clearing price in a future auction where the gap between the capacity target and available supply may be greater. This could have potential negative impacts on future security of supply.

The government is therefore seeking evidence from industry on what level of future visibility of capacity requirements would prove beneficial, and on the benefits and risks of pursuing such changes, including those we have not yet considered.

### **Assessing the future supply stack**

As well as considering how to develop the longer-term forecast of capacity targets in the ECR, the government is exploring with NESO and Ofgem whether NESO could also provide a complementary supply-side risk assessment out to the T-8 delivery year. This would be a new task for NESO, and the government is working with Ofgem and NESO to consider options for taking this work forward, including appropriate implementation routes and resourcing considerations.

While the visibility of longer-term capacity requirements may send a clearer signal to industry about future capacity needs, this would not provide industry with visibility of the supply stack available to meet these needs, or by extension, of the need for investment in new and existing capacity. Having an indicative view of the supply stack for future years alongside indicative capacity targets could provide industry with a more comprehensive picture to support investment decisions.

However, should this assessment of supply-side risks be made public, particularly with any level of granularity – for example, with a breakdown of capacity availability by technology type – there is a risk that commercially sensitive information about the future expected operations of individual assets may become visible. This is particularly relevant where the pool of operational capacity under a particular technology type grows smaller as the capacity mix evolves over the coming decade. For this reason, it is expected that all information published will be aggregated appropriately (e.g. at technology type) to avoid publishing any commercially sensitive or individual unit-level information. Moreover, as above, there is a risk that any assessment of the supply stack could be inaccurate, thereby sending misleading signals to inform industry and the government decision-making on investment.

The government is therefore seeking evidence from industry on whether it would be beneficial for an assessment of the potential supply stack out to the T-8 delivery year to be made public and what the associated risks might be.



## **Acting on future demand and supply disruptions**

Depending on the robustness of NESO's modelling of longer-term capacity requirements and supply-side risks, this information could in future be used to inform the CM's T-4 auction target. This could mean that anticipated capacity needs could be secured early where future supply and demand disruptions are anticipated beyond the CM's four-year ahead horizon. Changes to the CM's legislative framework could be required to enable NESO and/or the Secretary of State to account for new factors in arriving at a recommended or adjusted CM auction target.

While there could be security of supply benefits to this development, there are also potential challenges. For example, in adjusting a T-4 auction target in response to longer-term capacity needs, NESO and the government would need to consider how to value future security of supply risks to ensure the CM continues to provide value for money for consumers. The government would also need to consider the potential wider impacts of adjusting the T-4 target, including on the target for the relevant T-1 auction, and on margins and wholesale prices in the relevant delivery year should any target adjustments lead to over-procurement in a future delivery year.

**Question 6: Would you find the visibility of more granular longer-term capacity targets beneficial to your business? Are there any risks to providing this information? Please indicate yes/no and provide details to support your answer.**

**Question 7: Would it be beneficial for an assessment of the potential supply stack out to the T-8 delivery year to be made public, and are there any risks or unintended consequences of publishing such information?**

## Call for Evidence questions list

**Question 1: Would you consider using pathway B, C and/or D to decarbonise a plant and what factors would influence your decision?**

**Question 2: Please provide information and evidence on the conversion type and capacity size which you believe would be suitable for each pathway, as well as the outage period required and how you would intend to manage it.**

**Question 3: What are your views on managing the risk of delays in decarbonisation under pathway B, C and D?**

**Question 4: Are there any additional risks and issues with pathway B, C and D which you can identify?**

**Question 5: Are there other pathways which we have not identified which would be required to support the decarbonisation of CMUs?**

**Question 6: Would you find the visibility of more granular longer-term capacity targets beneficial to your business? Are there any risks to providing this information? Please indicate yes/no and provide details to support your answer.**

**Question 7: Would it be beneficial for an assessment of the potential supply stack out to the T-8 delivery year to be made public, and are there any risks or unintended consequences of publishing such information?**

## 6. Next steps

This CfE will remain open to written responses for 8 weeks from 15 October 2024, closing on 10 December 2024. The government will analyse all responses to inform further policy development. We expect to respond in early 2025, outlining the next steps for policy development.

The government has undertaken analysis as part of the public sector equality duty (PSED) process, and we do not believe that any groups are likely to be disproportionately impacted by the policies. The impact on consumer bills is expected to be negligible, and we do not foresee any impacts on protected groups. We will continue to assess the equality implications of these options and will keep the PSED closely under review. If you have any views on how the policies may impact equality, please indicate this in your response.

## 7. Glossary

Abbreviation/term	Definition
Capacity Agreement	The rights and obligations accruing to a Capacity Provider under the Regulations and the Rules in relation to a CMU for one or more delivery years.
Capacity Auction	An auction held under Part 4 of the Regulations, as a result of which successful bidders are awarded Capacity Agreements.
Capital Expenditure (capex)	Money spent by a business or organisation on acquiring or maintaining fixed assets, such as land, buildings, and equipment.
Capital Expenditure Thresholds	Auction parameters that determine whether a CMU can access a multi-year agreement (either as a refurbished CMU or a new build CMU) based on their amount of capital expenditure (in £/kW).
Capacity Market (CM)	A mechanism to contract reliable sources of capacity, and ensure they respond when needed, to help support security of supply. This results in payment to any Capacity Provider who can respond when called on by NESO in times of system stress. Auctions for this capacity take place both four years (T-4) and one year (T-1) ahead of delivery, and agreements generally last for one year.
Capacity Market Rules (“the Rules”)	The CM Rules provide the technical detail for implementing the operating framework set out in the Regulations.
Capacity Market Rules/The Electricity Capacity Regulations (“the Regulations”)	This refers to the Electricity Capacity Regulations 2014, S.I. 2014/2043, the principal regulations underpinning the CM.
Capacity Market Unit (CMU)	A unit of electricity generation capacity or DSR capacity that can be put forward in a capacity auction. It is the product that forms the capacity to be purchased through the CM.
Capacity Provider	A person who holds a Capacity Agreement or a transferred part in respect of a Capacity Agreement.
Carbon Capture Readiness (CCR)	Requirements under Section 36 of the Electricity Act 1989 consent applications relating to the planning of new combustion plants, at or over 300 Mwe capacity, and covered by the EU Large

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	Combustion Plant Directive, that such plants should be built “carbon capture ready”.
Carbon Capture, Usage and Storage (CCUS)	A technology for capturing carbon dioxide that would otherwise be emitted from a process (e.g. electricity generation) and either using it (often in industrial processes) or permanently storing it.
Combined-Cycle Gas Turbine (CCGT)	An electricity generation technology in which a gas turbine and a steam turbine are used in combination to achieve greater efficiency.
Contracts for Difference (CfD)	15-year private law contracts between low carbon electricity generators and the Low Carbon Contracts Company. Contracts are awarded in a series of competitive auctions. Generators receive revenue from selling their electricity into the wholesale market. When the market reference price is below the strike price, generators receive a top-up payment for the additional amount. If the reference price is above the strike price, the generator must pay back the difference.
Decarbonisation Readiness (DR)	Relates to requirements expected to come into effect from 28 February 2026 for new and substantially refurbishing combustion power plants to be built ready to decarbonise. These requirements will replace the existing Carbon Capture Readiness (CCR) requirements.
Delivery Body	National Energy System Operator (NESO).
Delivery Year	In relation to a capacity auction, this means the year for which a 1-year Capacity Obligation is awarded, or the first year of the period for which a multi-year Capacity Obligation is awarded. Delivery years run 1 October- 30 September of each calendar year.
Demand Side Response (DSR)	DSR is a method of reducing electricity demand. This can be achieved by either reducing demand by switching off assets or by starting up on-site generators to provide electricity in place of drawing it from the distribution network or transmission network.
De-rated Capacity	The capacity that a CMU is likely to be technically available to provide at times of peak demand, which is specific to the CMU’s technology type and individual characteristics.
De-rating Factor	De-rating factors are applied to all forms of electricity generation in the CM to reflect that 100%

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	of capacity will not be available 100% of the time. This is because generating plants can break down from time to time, and wind and solar output varies day to day.
Dispatchable Power Agreement (DPA)	A private law contract between a carbon emitting electricity generator and the government which sets out the terms for capturing and storing carbon and the compensation which the generator will receive in return.
National Energy System Operator (NESO)	NESO is an independent, public corporation responsible for planning Britain's electricity, gas and hydrogen networks, as well as operating the electricity system. In the GB electricity system, NESO performs several important functions, from second-by-second balancing of electricity supply and demand, to developing markets and advising on network investments. NESO replaced the National Grid Electricity System Operator on 1 October 2024.
Flexibility	The ability to shift the consumption or generation of energy in time or location. Flexibility is critical for balancing supply and demand, integrating renewables, and maintaining the stability of the system. Flexibility technologies include power CCUS, H2P, LDES, flexible demand and interconnectors.
Generator	(i) Any equipment that produces electricity, including equipment which produces electricity from storage; and (ii) A business which operates such equipment.
Generating Technology Classes (GTC)	Means a class of Generating Unit, defined by the technology used to generate electricity, for which the Secretary of State requires the Delivery Body to publish a De-Rating Factor.
Gigawatt (GW)	A unit of capacity (1000 megawatts)
Hydrogen to Power (H2P)	The conversion of low carbon hydrogen to produce low carbon electricity.
Independent Technical Expert (ITE)	A person who is independent of the relevant Capacity Provider and is engaged by the relevant Capacity Provider to prepare the technical assessment, report, certificate or commentary required by the Rules to the Required Technical Standard.
Inertia	Inertia refers to kinetic energy 'stored' in the electricity system that acts as a cushion against

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	sudden changes in frequency that is caused by faults or changes in demand and supply. Inertia has historically been provided by coal and gas-fired generators, as they contain large synchronous rotating masses. As we move towards a fully decarbonised electricity system, inertia will increasingly need to be managed through new low carbon technologies.
Long Duration Electricity Storage (LDES)	Encompasses a group of conventional and novel technologies, storing and releasing energy through mechanical, electrochemical, and chemical means. LDES will be pivotal in delivering a smart and flexible energy system that can integrate high volumes of low carbon power, heat, and transport.
Panel of Technical Experts (PTE)	An advisory group of independent consultants who were appointed by the government to perform a specific and technical function as part of the first Electricity Market Reform delivery plan process.
Power Carbon Capture Usage and Storage (power CCUS)	Gas-fired power generation with CCUS technology.
Refurbishing Capacity Market Unit (CMU)	An existing CMU which is the subject of an application as a Prospective CMU by virtue of an improvements programme that will be completed prior to the commencement of the first relevant delivery year.
Renewables Obligation (RO)	The Renewables Obligation (RO) scheme was designed to encourage generation of electricity from eligible renewable sources in the UK. The RO scheme closed to all new generating capacity 1 April 2017.
Review of Electricity Market Arrangements (REMA)	The government launched the Review of Electricity Market Arrangements (REMA) following a commitment in the British Energy Security Strategy. REMA is a major review into Britain's electricity market design to radically enhance energy security and to help deliver our world-leading climate targets whilst reducing exposure to international gas markets.
Satisfactory Performance Days (SPDs)	Days within the delivery year in which Capacity Providers must demonstrate that they are able to deliver their Capacity Obligation.
Unabated (gas) generation	Electricity generation where carbon dioxide from burning natural gas is not captured and stored.

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This Call for Evidence is available from: [www.gov.uk/government/calls-for-evidence/capacity-market-proposals-to-maintain-security-of-supply-and-enable-flexible-capacity-to-decarbonise](https://www.gov.uk/government/calls-for-evidence/capacity-market-proposals-to-maintain-security-of-supply-and-enable-flexible-capacity-to-decarbonise)

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