Department for Energy Security & Net Zero

Capacity Market: Proposals to maintain security of supply and enable flexible capacity to decarbonise

Summary of responses to the Call for Evidence

May 2025

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1. 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.

Clean power means that by 2030, Great Britain will generate enough clean power to meet our total annual electricity demand in a typical weather year.[1] It is crucial that renewables are complemented with flexible capacity, which will ensure security of supply by delivering power irrespective of calm or dull weather conditions.

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. Whilst low carbon flexible technologies are scaling up, security of supply will be protected with the maintenance of an expected 35GW of unabated gas reserve capacity.[2]

As set out in the Clean Power Action Plan,[3] there will be a fundamental shift in the role and frequency of unabated gas generation, moving from generating almost every day of the year, to an important strategic reserve role, used only when essential.

Between 15 October and 10 December 2024, the government called for evidence[4] and consulted[5] on proposed changes to the Capacity Market (CM) to maintain security of supply and enable flexible capacity to decarbonise. In particular, the government called for evidence on changes aiming to:

- Inform the development of additional decarbonisation pathways that would allow unabated gas plants to exit multi-year CM agreements to decarbonise. The government simultaneously consulted on an initial decarbonisation pathway which will allow unabated gas plants to exit and convert to power CCUS.
- Inform the development of a longer-term view of future capacity requirements and supply.

The Call for Evidence (CfE) received 29 responses. A significant number of responses were received from generators and developers, but trade bodies, academia, non-governmental organisations (NGOs), thinktanks and energy delivery bodies were also well represented.

[1] DESNZ, 'Clean Power Action Plan', Dec 2024
[2] DESNZ, 'Clean Power Action Plan', Dec 2024
[3] DESNZ, 'Clean Power Action Plan', Dec 2024
[4] DESNZ, 'Capacity Market: Call for Evidence on proposals to maintain security of supply and enable flexible capacity to decarbonise', Oct 2024
[5] DESNZ, 'Capacity Market: Consultation on proposals to maintain security of supply and enable flexible capacity to decarbonise', Oct 2024

2. 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 set out in the Clean Power Action Plan, by 2030 clean sources will produce at least 95% of Great Britain's total generation in a typical weather year.[6] It is projected that 40-50GW of dispatchable and long-duration flexible capacity will be required in 2030 to support our clean power system, particularly during extended periods of low renewable output.[7]

The government is determined to drive the development and deployment of low carbon long-duration flexibility. However, both the government's Clean Power Action Plan and the independent analysis published by the National Energy System Operator (NESO) estimated that only a small proportion of the flexible capacity needed in 2030 can be met by low carbon dispatchable power and LDES.[8] Therefore, it is crucial to maintain most of the existing unabated gas-fired capacity on the system (approximately 35GW), which would operate only when needed to provide long-duration flexibility and ensure security of supply.

The government is committed to ensuring that new build and substantially refurbishing power plants are ready to decarbonise, and that existing unabated gas plants can decarbonise, once the enabling low carbon infrastructure expands.

In October 2024, the government published a CfE,[9] seeking views to inform changes to the CM. This included proposals for further managed exit pathways that would enable plants to decarbonise.

As Britain becomes a Clean Energy Superpower, it is important to have as much clarity as possible about future capacity requirements. This will inform timely and effective investment decisions and enable the government to actively respond to capacity concerns before they materialise to ensure continued security of supply. The CfE therefore also sought views to support the development of a longer-term view of future capacity requirements and supply.

This government response summarises the feedback received on the proposals set out in the CfE.

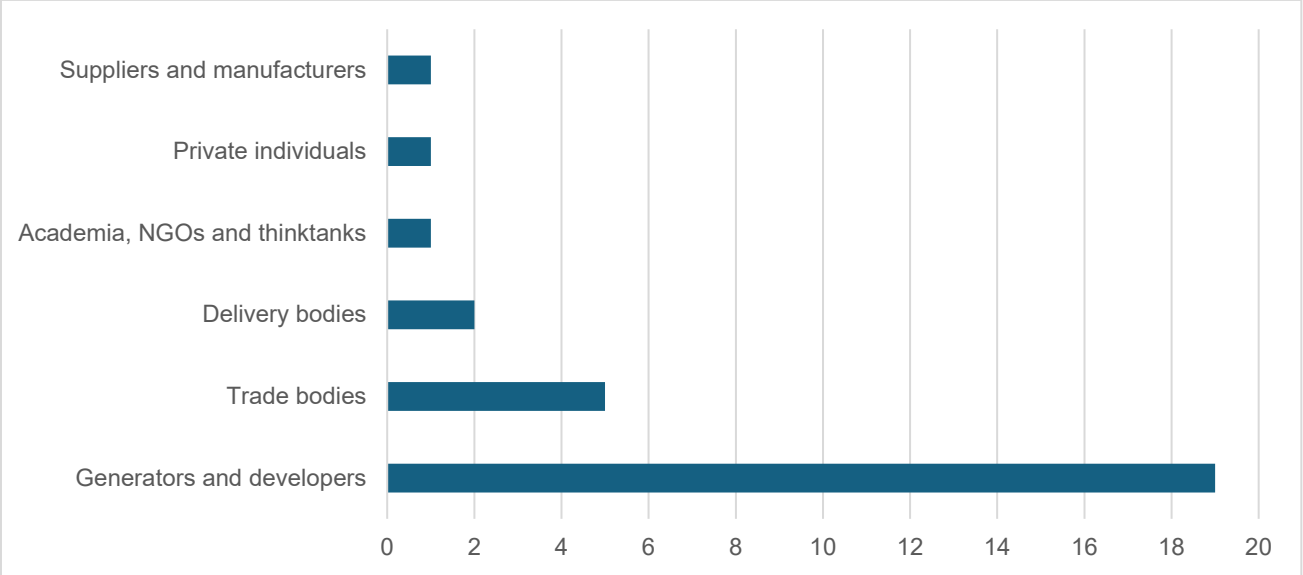
2.1 CfE responses

The CfE was published on GOV.UK and ran from 15 October to 10 December 2024. The CfE received 29 responses from a range of stakeholders, including developers and generators, trade bodies, delivery bodies, academia, NGOs and thinktanks. There was also one response from a private individual and one response from a supplier. These responses were submitted

[6] DESNZ, 'Clean Power 2030 Action Plan', Dec 2024
[7] DESNZ, 'Clean Power 2030 Action Plan', Dec 2024
[8] DESNZ, 'Clean Power 2030 Action Plan', Dec 2024; NESO, 'Clean Power 2030', Nov 2024
[9] DESNZ, 'Capacity Market: Call for Evidence on proposals to maintain security of supply and enable flexible capacity to decarbonise', Oct 2024

through an online portal (Citizen Space, 28 responses) or by email (one response). Figure 1 provides a breakdown of respondents by type. The government is grateful to all respondents to the CfE for taking the time to submit their views.

Figure 1: Breakdown of CfE respondents by type



This response summarises the feedback received. All responses to the CfE have been analysed, however due to the commercially sensitive nature of some responses, the response summary to some questions has been abridged.

In summarising the responses received to each question, “the majority” indicates a view was held by more than 50% of respondents to that question, “most” or “many” indicates more than 70%, “some” between 30% and 70%, and “a few” less than 30% of respondents who expressed a view. This is consistent with the approach used for other UK government responses.

3. Decarbonisation pathways for CMUs

3.1 CfE position

The government is committed to setting out clear and viable routes for unabated gas to decarbonise. To ensure security of supply, Capacity Agreements can only be ended by termination. Capacity Market Units (CMUs) can only permanently leave their capacity obligation without being subject to termination fees in very specific circumstances. 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 the CfE, the government consulted on a proposal to introduce a first managed exit pathway (pathway A), which would allow CMUs to exit a multi-year CM agreement and transfer to a Dispatchable Power Agreement (DPA), facilitating conversion to power CCUS. This pathway is subject to the Capacity Provider becoming party to a DPA, subject to Transport and Storage (T&S) capacity, value for money and affordability.

The government recognises that the decarbonisation pathway best suited to a particular unabated plant could be dependent on a variety of factors. Therefore, the CfE sought evidence and feedback on three further decarbonisation pathways:

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

3.2 Usage of proposed decarbonisation pathways: summary of responses

Question 1: Would you consider using Pathway B, C and/or D to decarbonise a plant and what factors would influence your decision?
Please note, question 1 was split into three parts for analysis to reflect the three pathways: 1A) Pathway B, 1B) Pathway C and 1C) Pathway D.

Question 1A received 22 responses. 11 (50%) respondents would consider using Pathway B, two (9%) would not consider doing so, five (23%) were unsure and four (18%) provided tangential responses which did not directly address the question.

Question 1B received 17 responses. Nine (53%) respondents would consider using Pathway C, two would not (12%) and three (18%) were unsure. A further three (18%) respondents provided tangential responses which did not directly address the question.

Question 1C received 17 responses. Eight (47%) respondents would consider using Pathway D, two (12%) would not consider doing so and two (12%) were unsure. A further five (29%) gave tangential responses.

Although generally supportive of all the pathways, respondents advised that external factors such as technical and economic viability, as well as infrastructure availability, would be central to whether they would use a pathway.

For Pathway B in particular, respondents flagged the need for more clarity on the H2PBM to inform their answers. For Pathway C, those who were unsure raised CM clearing prices and the CM price cap as influencing their decision on whether they would use the pathway.

3.3 Suitability of proposed decarbonisation pathways: summary of responses

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.

A detailed response summary has been omitted due to the commercially sensitive nature of **question 2**. However, most respondents flagged the same dependencies as set out under **question 1** as being central to deciding which conversion type and capacity size to pursue.

3.4 Risk management: summary of responses

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 3 received 17 responses. A couple of respondents stated that delays should be compensated for. One respondent advised that the funding mechanism post-decarbonisation must provide remuneration over and above the existing arrangement to make using a managed exit worthwhile. Another respondent stated that pathways should allow for reasonable delays to be accounted for without impacting the CMU's revenue.

Question 4 received 17 responses regarding Pathway B and C, and 15 responses regarding Pathway D. Responses relating to all three pathways broadly covered the same risks, in particular managing the amount of capacity exiting the CM at the same time, the impact of capacity lost due to both decreased generation capacity post-decarbonisation and the risk of a plants' delayed return to generation.

3.5 Additional pathways: summary of responses

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

Question 5 received 12 responses. Of those which identified additional pathways, a couple of respondents suggested that there should be another pathway for CMUs with single year agreements. One respondent said that there should be a pathway for energy from waste, and another made the more general request for pathways to Industrial Carbon Capture and other CCUS business models. One respondent stated that Pathway D should apply to batteries.

4. Development of longer-term views of future capacity requirements and supply

4.1 CfE position

As the grid decarbonises, it is important to ensure that the government has as much clarity regarding future capacity needs as possible. This will enable the government to better manage the impacts of market volatility and actively respond to capacity concerns before they materialise, ensuring 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, to secure capacity one and four years ahead of delivery respectively.

Through the CfE, the government sought views and evidence to inform the development of a longer-term view of future capacity requirements. This includes potential changes to the scope of information included in NESO's annual ECR to:

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

This would allow future auction targets to take account of emerging disruptions in the energy transition. 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.

4.2 Summary of responses

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?

Question 6 received 25 responses. 24 (96%) respondents were supportive of the proposals, although 14 of these raised areas for further consideration. One (4%) respondent was not supportive.

Of those that were supportive of the proposal, most respondents felt that developing a longer-term view of capacity targets would provide greater clarity to investors to help make decisions. Some felt it would send clear investment signals to support new, low carbon technologies. A few respondents stated that this proposal would help with longer-term horizon planning.

Of those that were supportive of the proposal, some respondents highlighted that while there are benefits to developing longer-term capacity targets, they must be accurate and based on reliable assumptions. A few respondents stated that NESO would need to be transparent about the methodology used. A few respondents raised that there is a potential risk of market distortion and gaming.

The respondent that was not supportive of the proposal stated that longer-term modelling can be unreliable for long-term developer planning and could be produced by CM applicants internally if required.

Question 7 received 25 responses. 23 (92%) respondents were supportive of the proposal, although 12 of these raised areas for further consideration. Two (8%) respondents were unsupportive.

Of the respondents that were supportive, some stated that the proposal would help with their longer-term horizon planning and would provide greater clarity for decision making. Some respondents noted that whilst they are supportive of an assessment of the potential supply stack out to the T-8 delivery year being made public, it is important that this information is aggregated to avoid the risk of commercially sensitive information being shared.

Of those that were unsupportive, one respondent stated that the CM register is already public, so most of the information needed to assess the supply stack is already available. One respondent noted a potential risk of market distortion and gaming.

NESO’s modelling is at an early stage, however the government is supportive of developing a more robust view of future capacity requirements and will continue to work with NESO to explore options for development.

5. Glossary

Abbreviation/Term	Definition
Capacity Agreement	The rights and obligations accruing to a Capacity Provider under the CM 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.
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 the CM Delivery Body 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 CM Rules" or "the Rules")	The CM Rules provide the technical detail for implementing the operating framework set out in the Regulations.
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, 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.
CM Delivery Body	National Energy System Operator (NESO).
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 LCCC. 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.
Delivery Year	In relation to a capacity auction, this means the year for which a one-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.
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% 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 DPA Counterparty, which will be the Low Carbon Contracts Company Ltd, issued pursuant to section 10 of the Energy Act 2013, as a type of CfD. The contract will set out the terms for capturing and storing carbon and the compensation which the generator will receive in return.
Electricity Capacity Regulations ("the CM Regulations or "the Regulations")	This refers to the Electricity Capacity Regulations 2014, S.I. 2014/2043, the principal regulations underpinning the CM.
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.
Generating Technology Classes (GTC)	A class of Generating Unit, defined by the technology used to generate electricity, for which the Secretary of State requires the CM Delivery Body to publish a De-Rating Factor.

Generator	(i) Any equipment that produces electricity, including equipment which produces electricity from storage; and (ii) A business which operates such equipment.
Gigawatt (GW)	A unit of capacity (1000 megawatts).
Hydrogen to power (H2P)	The conversion of low carbon hydrogen to produce low carbon electricity.
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.
Low Carbon Contracts Company (LCCC)	LCCC operates the CfD scheme in Great Britain, acting as the private law counterparty to the contracts, undertaking settlements and providing advisory services to the government. LCCC's sister company ESC is the settlement body for the CM, undertaking settlement services and key operational activities. ESC works alongside NESO, focused on the efficient operation of the CM. LCCC is also the designated counterparty of the Low Carbon Hydrogen Agreements, Power and Industrial CCUS, Revenue Support Agreement and will be the settlement body within the Regulated Asset Base.
National Energy System Operator (NESO)	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.
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.
Review of Electricity Market Arrangements (REMA)	The government launched 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.

This publication is available from: 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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