Department for Energy Security & Net Zero

Capacity Market

Consumer-led flexibility

Closing date: 17 February 2025

December 2024

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Contents

1. General information

1.1. Why we are calling for evidence

The security of our electricity supply is key to the successful delivery of the Clean Energy Superpower Mission and one of its key pillars - clean power by 2030. Through this Call for Evidence (CfE), we are seeking to build upon proposals from the Capacity Market (CM) Phase 2 CfE, published in October 2023[1], to gather evidence on potential proposals aimed to improve how consumer-led flexibility[2] is categorised and operates within the CM to ensure it reflects market conditions. These exploratory questions complement the broader strategic questions considered through the Review of Electricity Market Arrangements.

1.2. Call for Evidence details

Issued: 16 December 2024

Respond by: 17 February 2025

Enquiries to:

Electricity & Market Arrangements

Capacity Market Team

Department for Energy Security and Net Zero

3 Whitehall Place

London

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Email: futureelectricitysecurity@energysecurity.gov.uk

Call for Evidence reference: Capacity Market: Consumer-led flexibility.

Audiences: The government is 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] Department for Energy Security and Net Zero, October 2023, Capacity Market 2023: Phase 2 proposals and 10-year review

[2] These voluntary offers of flexibility by energy consumers (whether households or industries) can also be referred to as 'Demand Side Response' (DSR) or 'Demand Side Flexibility'".

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 consultation and the associated Call for Evidence 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.

Respond online at: https://energygovuk.citizenspace.com/energy-security/capacity-market-rulesmodernisation-and-clf

1.4. Confidentiality and data protection

Information you provide in response to this Call for Evidence, 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 people's personal names, addresses or other contact details.

If you have any complaints about the way this Call for Evidence has been conducted, please email: 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 jobs and is the best 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.

The government has routinely made changes to the Capacity Market (CM). These reflect changing circumstances and developments, ensuring it remains fit for function and continues to deliver its primary objective of delivering security of supply whilst supporting wider government priorities.

The government is building upon proposals from the CM Phase 2 Call for Evidence (CfE), published in October 2023[3], by seeking views and evidence for several potential proposals aimed to improve how consumer-led flexibility, currently delivered by Demand Side Response mechanisms participating in the CM, is categorised and operates to ensure it reflects market conditions.

Alongside this CfE, the government has simultaneously published a CM consultation on proposals to modernise CM Rules and improve participation and delivery assurance of consumer-led flexibility[4]. These proposals seek to:

- Ensure the continued accessibility and modernisation of the CM by proposing policy clarifications and CM Rule amendments and revocations.
- Streamline processes related to consumer-led flexibility, delivered by Demand Side Response mechanisms participating in the CM, to increase assurance of delivery through reducing administrative requirements on CM participants and CM Delivery Bodies.

The government has also published the 10-year review of the CM[5]. This second statutory five-year review (2019-2024) of the CM, referred to as 'the 10-year review', takes a backwards-looking approach to analysing the performance of the CM against its original objectives. The review found that the CM has been effective in meeting its objectives, the findings will inform

[3] Department for Energy Security and Net Zero, October 2023, Capacity Market 2023: Phase 2 proposals and 10-year review
[4] Department for Energy Security and Net Zero, December 2024, Capacity Market: Proposals to modernise Capacity Market Rules and improve participation and delivery assurance of consumer-led flexibility
[5] Department for Energy Security and Net Zero, December 2024, Capacity Market: 10-year review (2019-2024)

the broader strategy to ensure energy security and move towards making Britain a Clean Energy Superpower.

This Call for Evidence (CfE) compliments existing programmes to support security of supply and deliver clean power by 2030:

- In October 2024, the government published a CM consultation[6] and CfE[7] seeking views on proposed changes to the CM. Changes would retain the flexible generation capacity required to ensure the security of our electricity supply and to support the conversion of unabated gas plants to low carbon technology.
- In October 2024, the government published a policy update on the October 2023 CM Phase 2 consultation[8], looking at proposed changes to the scheme to strengthen security of supply and accelerate investment in low carbon technologies.
- In December 2024, the government published a summary of responses to the second Review of Electricity Market Arrangements (REMA) consultation[9], which was published in March 2024. Alongside this, the government published an update on REMA[10] which sets out progress since March on the options being considered for longer-term electricity market reform as well as clarity on next steps for decision making.
- In December 2024, the government published the Clean Power 2030 Action Plan: A new era of clean electricity[11], setting out how we will deliver clean power in Great Britain[12]. In doing this we will tackle three major challenges: the need for a secure and affordable energy supply; the creation of essential new energy industries, supported by skilled workers in their thousands; and the need to reduce greenhouse gas emissions and limit our contribution to the damaging effects of climate change.

3. Introduction

Reliable energy supplies are fundamental for the economy, society and public services. Since its introduction in 2014, the Capacity Market (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 (GB).

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

[6] Department for Energy Security and Net Zero, October 2024, Capacity Market: Proposals to maintain security of supply and enable flexible capacity to decarbonise
[7] Department for Energy Security and Net Zero, October 2024, Capacity Market: Call for Evidence on proposals to maintain security of supply and enable flexible capacity to decarbonise
[8] Department for Energy Security and Net Zero, October 2024, Capacity Market Policy Update 2023 Phase 2 Consultation
[9] Department for Energy Security and Net Zero, March 2024, Review of Electricity Market Arrangements: summary of responses to the second consultation
[10] Department for Energy Security and Net Zero, December 2024, Review of Electricity Market Arrangements: Autumn update
[11] Department for Energy Security and Net Zero, December 2024, Clean Power 2030 Action Plan
[12] Energy Policy is largely devolved to the Northern Ireland Executive (NIE).

available to be deployed when renewable generation is reduced (for instance, on still, dark winter days). The National Energy System Operator estimates that the electricity system in Great Britain could require 30 to 40GW of short duration flexible capacity and 40 to 45GW of long duration flexible capacity in 2030 to ensure security of supply.[13]

Consumer-led flexibility enables energy consumers in domestic, commercial and industrial settings to voluntarily adjust their electricity usage to reduce demand during peak times and get lower bills as a result. It utilises technologies such as electric vehicle charge points, heat pumps and behind-the-meter storage. By reducing electricity demand during peak times, consumer-led flexibility decreases the need for additional generation and network infrastructure. This contributes to achieving clean power in a cost-effective way, improving the efficiency of the electricity grid to lower system costs and delivers savings to all consumers.

Markets act as a fundamental cornerstone of the electricity system of Great Britain (GB). Competitive markets have driven innovation and brought benefits to consumers in the way energy is delivered and consumed. Underpinning market structures and governance arrangements have played their role in facilitating the transition toward a low carbon energy system and brought forward new generating capacity and energy flexibility.

The Capacity Market (CM) is at the heart of the government's strategy for ensuring security of electricity supply in GB. It is a technology neutral scheme in which existing and new-build electricity capacity (categorised by Generating Technology Classes covering generation, interconnectors, Demand Side Response and other technologies) compete in auctions to obtain agreements under which they commit to delivering capacity when needed, in return for guaranteed payments. Contracts secured under CM auctions provide revenue streams which support investment in electricity capacity which in turn ensures security of supply.

Through this Call for Evidence (CfE), the government is seeking to build upon proposals from the CM Phase 2 CfE published in 2023[14]. The government is seeking views and evidence to consider improvements for how consumer-led flexibility, delivered by Demand Side Response mechanisms, is categorised and operates within the CM to ensure it reflects market conditions.

Alongside this CfE, the government has simultaneously published a consultation (See Capacity Market: Proposals to modernise Capacity Market Rules and improve participation and delivery assurance of consumer-led flexibility[15]). Depending on the responses received to this consultation and subject to parliamentary time, the government aims to implement these proposals, set out below, before prequalification in 2025.

CM Rules Modernisation

- Enabling Capacity Market Units (CMUs) to change their opt-out status following a change in operational circumstances. One of the reasons that a mandatory CMU can 'opt-out' of an upcoming T-4 auction is if it will be retired in the Delivery Year that the auction is being held. Our proposal aims to clarify policy intent regarding the ability of these units to change this status and take part in future T-1 auctions if operational

[13] National Energy System Operator, November 2024, Clean Power 2030 Advice on achieving clean power for Great Britain by 2030: https://www.neso.energy/publications/clean-power-2030
[14] Department for Energy Security and Net Zero, October 2023, Capacity Market 2023: Phase 2 proposals and 10-year review
[15] Department for Energy Security and Net Zero, December 2024, Capacity Market: Proposals to modernise Capacity Market Rules and improve participation and delivery assurance of consumer-led flexibility

circumstances have changed and the CMU is able to keep running for longer than previously expected.

- Clarifying the policy intent that CMUs cannot change their Generating Technology Class (GTC) after Prequalification.
- Seeking to clarify powers of the Delivery Body when an application would not prequalify if it was viewed afresh after Prequalification Results Day but before the First Bidding Round for the relevant auction.
- Improve the accessibility of the CM Rules through the revocation of CM Rules on Transitional Arrangements, which governed arrangements put in place to facilitate the delivery of DSR and smaller non-Central Meter Registration Service (CMRS) distribution CMUs prior to the Delivery Year of the first full Capacity Auction, and Coronavirus arrangements.
- Amending an error which has entered the Rules following previous changes in which an Exhibit cross-references another Rule that does not exist.
- An extension to enable mothball plants to apply for 2025 prequalification for auctions held in 2026.

Improving participation and delivery assurance of consumer-led flexibility

Consumer-led flexibility in the Capacity Market is delivered by Demand Side Response mechanisms. The proposals aim to:

- Better facilitate applications from large aggregated domestic portfolios by allowing the collation of similar components into a single business model entry. This is instead of submitting a separate business model for each individual component within a portfolio, as under current CM Rules.
- Introduce a separation period between (i) the DSR Test Period, and (ii) Notifying DSR components and Metering Assessment and Metering Tests. A separation period will better allow CM Delivery Partners[16] to complete validation processes.
- Allocate a £5,000/MW termination fee for failure to provide a DSR Test certificate. The proposed allocation of a fee to an existing Termination Event is designed to improve delivery assurance by incentivising the delivery of capacity agreements without imposing excessive barriers to market entry.

The government encourages respondents to review both the CfE and consultation in tandem (a single, combined response can be made using the online platform). **Please note that the executive summary and introductions are duplicative across the documents. When reading the CfE you can skip forward to section 4 if you have already read this document.**

[16] Guidance on Roles and responsibilities under the Capacity Market: https://www.gov.uk/government/publications/roles-and-responsibilities-under-the-capacity-market

4. Consumer-led flexibility via Capacity Market 'Demand Side Response' mechanisms

Consumer-led flexibility involves voluntary actions taken freely and directly by energy consumers to shift their electricity use. This includes residential customers using smart technologies such as smart-charging electric vehicles and heat pumps, as well as Industrial and Commercial units adjusting demand and utilising behind-the-meter generation or storage. This enables consumers to be rewarded with cheaper electricity by flexibly adjusting their usage to times of lower demand on the grid.

Within the Capacity Market, consumer-led flexibility is delivered via 'Demand Side Response' mechanisms. These allow consumers to be further rewarded through Capacity Payments made via 'Demand Side Response Service Providers' (DSRSPs) who act on the consumer's behalf to reduce electricity demands on the grid at peak times. The financial benefits of flexibility on offer to consumers reflect the benefits to the wider electricity system, which in turn benefits all consumers.

Section 6.6 of the October 2023 Capacity Market (CM) Phase 2 consultation[17] sought views on the creation of new, more granular Generating Technology Classes (GTCs) for Demand Side Response (DSR). The consultation outlined the context that all DSR is considered uniformly under the CM, covering an extremely broad range of technology and customer types (backup generators, electric vehicle fleets, Industrial & Commercial customers, domestic turndown etc.).

Consequently, one de-rating factor[18] is applied across all types of DSR, despite it potentially having a wide range of availability profiles. In the National Energy System Operators (NESOs) 2024 Electricity Capacity Report[19] the de-rating factor for Demand Side Response (DSR) was stated as 79%, which some stakeholders have expressed may be higher than certain forms of DSR are able to provide for. Alongside the risk this poses for under delivery, the current system may also risk dissuading DSR providers from participating in the CM if they feel they won't be able to meet their contracted capacity.

Through Question 22 of the October 2023 CM Phase 2 consultation[20], the government sought views on different potential options for implementing multiple Generating Technology Classes (GTCs), including welcoming suggestions for options that may not have been considered and views on the potential benefits and risks of the different options.

Question 22 received 18 responses, 13 of which were supportive of some change in this space. Responses supportive of change generally cited the ability to calculate more accurate derating factors and thus mitigate delivery risk. Of the responses not in favour of change, or

[17] Department for Energy Security and Net Zero, October 2023, Capacity Market 2023: Phase 2 proposals and 10-year review
[18] A factor that is applied to a Capacity Market Units capacity to derive its de-rated capacity.
[19] National Energy System Operator, 2024, Electricity Capacity Report: https://www.gov.uk/government/publications/electricity-system-operator-electricity-capacity-report-2024-findings-of-the-panel-of-technical-experts
[20] Department for Energy Security and Net Zero, October 2023, Capacity Market 2023: Phase 2 proposals and 10-year review

that expressed concerns, some felt that given the variety of technologies covered by DSR, new GTCs would still not be able to accurately represent the reliability profiles of all the assets covered under their classes.

Other responses also suggested wider changes for DSR in the CM that would complement the aims of GTC reform, or that may be necessary to enable some reforms to take place. These included baseline calculation, changes to the testing regime, and issues with the penalty regime. In particular, the government noted concerns and suggestions from respondents on participation, asset variation and accompanying rule changes that may be required and committed to take account of these issues when developing a policy proposal.

The government response to the CM Phase 2 consultation, published in July 2024[21], stated that, given the majority support for reform in this space, the government intended to review this question further to put forward a specific policy proposal for how to change the GTC, using the responses provided to inform a decision.

Existing processes and terminology in the Capacity Market Rules related to consumer-led flexibility is referred to as Demand Side Response (DSR). The Rules will continue to use the existing terms in respect of DSR. This includes references to DSR Capacity Market Units (CMUs), DSR CMU Components, DSR Tests and DSR Providers Respondents should note this terminology when considering the topics discussed in the Call for Evidence.

4.1. Categorising: Proposed Generating Technology Classes

Whilst the majority of responses were supportive of change, there was limited consensus on how Demand Side Response (DSR) should be categorised.

Responses pointed toward two leading proposals, suggesting categorisation based on:

- **the customer**: which would categorise DSR based on whether components are domestic or industrial & commercial (I&C).
- **the technology:** which would categorise DSR based on the type of technology providing the demand response.

Alternative suggestions included categorising Demand Side Response (DSR) based on duration, similar to the methodology adopted for energy storage in the Capacity Market (CM), or adopting a capacity-based approach which purely valued the amount of electricity that DSR could provide.

In addition, several respondents suggested utilising a combination of approaches using a duration-limited approach overlayed with a technology approach.

The government has considered stakeholder feedback and reviewed how categorisation could aid the adoption of separate de-rating methodologies to better define the contribution of DSR capacity during a System Stress Event (SSE). Consequently, the government intends to further categorise DSR by technology type.

The government and CM Delivery Partners considered feedback on categorising DSR by customer type. Categorisation by customer type is not considered to be the defining

[21] Department for Energy Security and Net Zero, July 2024, Capacity Market Phase 2 consultation and Rule amendments to support auction liquidity government response

characteristic of DSR and does not best reflect factors determining DSR's ability to meet security of supply concerns. DSR technologies showcase diverse characteristics whose capabilities are better captured on a technology-led basis.

Through this Call for Evidence, the government is seeking early views on establishing the following DSR Generating Technology Classes (GTCs):

- Behind-the-Meter (BTM) Storage
- Behind-the-Meter (BTM) Generation
- Genuine Demand Response (inc. turn-down)

The government is also seeking views on whether an additional GTC is required for Electric Vehicle (EV) charging and Vehicle-to-Grid (V2G)[22] bidirectional charging technologies, should these be introduced to the CM, or whether these can be incorporated into the categories listed above.

Question 1: Do you agree with our proposals to introduce new Demand Side Response Generating Technology Classes based on technology type?

Question 2: Please provide the reasoning behind your response to question 1 and supporting evidence where appropriate. If you disagree, please provide suggestions and evidence for alternative methods that could be considered.

Question 3: Do you have any opinions on whether an additional Generating Technology Class is necessary for Electric Vehicles and Vehicle-to-Grid technologies, or can these be included in the proposed categories?

Question 4: Can you foresee any unintended consequences that might arise from the introduction of separate Generating Technology Classes for Electric Vehicles and Vehicle-to-Grid?

4.2. De-rating: Methodology

All capacity that participates in the Capacity Market (CM) must be 'de-rated' to adjust for the risk that some or all will not be available to respond during a System Stress Event (SSE). Consequent to Chapter 2 of the CM Rules, responsibility for de-rating factors is largely conferred onto the National Energy System Operator (NESO) which must calculate de-rating factors for each Generating Technology Class (GTC) and for Demand Side Response (DSR) Capacity Market Units (CMUs)[23]. NESO provides detail on those methodologies within its annual Electricity Capacity Report[24] (ECR) and linked documents within. With respect to DSR

[22] V2X = Vehicle-to-Everything. V2X is an umbrella term for various forms of bidirectional charging whereby EVs may export energy stored in the battery. These include V2H (Vehicle-to-Home), V2B (Vehicle-to-Business), V2L (Vehicle-to-Load), and V2G (Vehicle-to-Grid).
[23] Rules under Chapter 2.3 confer responsibilities of the Secretary of State with regards the determination of interconnector de-rating factors.
[24] National Energy System Operator Electricity Capacity Report archive: https://www.emrdeliverybody.com/CM/Capacity.aspx

technologies, current de-ratings factors are based on historic data from the Short-Term Operating Reserve (STOR)[25].

The current methodology for establishing the DSR de-rating factor uses the mean committed STOR availability of Non-Balancing Mechanism STOR providers[26] over the last three winters during the winter peak period (0700-1900, Monday-Friday, December-February) at times with demand above the 50th percentile. The de-rating factor for DSR has increased over 7% to 79% since the 2022 ECR, largely due to STOR moving from seasonal fixed contract procurement to a day-ahead auction.

Given that underlying demands are diverse, and availabilities and duration may vary, the government recognises that the current approach may not accurately reflect the value of DSR capacity during an SSE. The government is therefore reviewing the DSR de-rating methodology as set out in CM rules, in respect of both the current and proposed categories of DSR in the CM.

We do not foresee making any significant changes to the overarching concept of de-rating as part of this review. Instead, this review will consider the:

- utilisation of Non-Balancing Mechanism Short-Term Operating Reserve in the Demand Side Response de-rating methodology and seek to identify appropriate alternatives.
- adoption of duration limited methodologies, as outlined below.

This Call for Evidence forms part of the de-rating methodology review and seeks stakeholder views on reforming the current methodology.

Question 5: What are your views on the utilisation of non-Balancing Mechanism Short-Term Operating Reserve in the current Demand Side Response de-rating methodology? Do you have any alternative suggestions? Please provide evidence to support your response.

4.3. De-rating: Duration limits

Duration limits reflect the capability of Capacity Market Units (CMUs) of sustaining their response during a System Stress Event (SSE). Duration limits currently only apply to storage technologies, per Schedule 3 of the CM Rules, and are judged against thresholds where they may be treated as ‘firm’ within the Capacity Market (CM). The threshold at which duration limits are applied is on the basis that 95% of SSEs for the relevant Delivery Year are modelled to be shorter than the Duration Limit.

The Panel of Technical Experts (PTE) is 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[27]. The PTE has previously stated in its

[25] National Energy System Operator STOR overview: https://www.neso.energy/industry-information/balancing-services/reserve-services/short-term-operating-reserve-stor
[26] Non-BM STOR providers are those providers operating in the STOR service who are not also participant in the Balancing Mechanism: https://www.neso.energy/industry-information/balancing-services/reserve-services/short-term-operating-reserve-stor.
[27] Find information on the Panel of Technical Experts: https://www.gov.uk/government/groups/electricity-market-reform-panel-of-technical-experts

2021[28] and 2023[29] reports of the need to consider Demand Side Response (DSR) technologies in conjunction with duration limits, its ability to sustain response to SSEs, and potential assessment of the underpinning frameworks and methodologies through which this can be understood.

The government invited initial feedback on DSR and duration limits through the October 2023 CM Phase 2 consultation[30]. Several responses to Question 22 cited concern in respect of adopting a duration limited approach to DSR de-rating methodologies. Responses of this view stated that whilst customers would be willing to turn down for extended periods during times of system stress, requiring DSR Tests over longer durations for test purposes would be overly onerous for DSR providers as it would deter participation and likely be economically inefficient.

Other respondents felt that adopting an approach similar to that used for calculating Storage de-rating factors in the CM would be appropriate. Storage de-rating factors, as determined by the National Energy System Operator (NESO)[31], use an Equivalent Firm Capacity (EFC) approach which seeks to normalise the security of supply contribution of non-conventional adequacy resources in the CM. It is defined essentially as "for a given penetration of that resource, what is the amount of perfectly reliable infinite duration firm capacity it can displace while maintaining the exact same reliability level".

Given the range of industry feedback, the government is seeking further views on the adoption of a duration limited methodology for all, or some, of the proposed DSR Generating Technology Classes.

Question 6: Do you agree that Demand Side Response exhibits duration limits?

Question 7: Do you agree with the proposals to adopt a duration limited methodology to de-rating Demand Side Response categories?

Question 8: Do you have views on whether this approach should be applied across all proposed Demand Side Response categories?

Question 9: Do you foresee any unintended consequences from adopting a duration limited methodology?

4.4. Component reallocation within aggregated portfolios

The Capacity Market (CM) Regulations and Rules allow a Demand Side Response (DSR) Capacity Market Unit (CMU) to consist of multiple DSR CMU Components. This is commonly referred to as aggregation and is a key characteristic of DSR market participation, allowing for smaller components to participate in the CM as part of a larger portfolio.

[28] Department for Business, Energy and Industrial Strategy (Predecessor to Department for Energy Security and Net Zero), 2021, National Grid ESO Electricity Capacity Report 2021: findings of the Panel of Technical Experts
[29] Department for Business, Energy and Industrial Strategy (Predecessor to Department for Energy Security and Net Zero), 2023, National Grid ESO Electricity Capacity Report 2023: findings of the Panel of Technical Experts
[30] Department for Energy Security and Net Zero, October 2023, Capacity Market 2023: Phase 2 proposals and 10-year review
[31] NESO 2017 Storage De-Rating Factor report

If the government were to adopt the approach outlined in the earlier section of this Call for Evidence to introduce multiple DSR Generating Technology Classes (GTCs) with associated de-rating methodologies, it could result in varying de-rating factors for each DSR GTCs.

Under this approach, for all DSR CMUs (including aggregated portfolios), it is likely that the GTC of each DSR Component would need to be provided at the point of prequalification and be de-rated individually. Consequently, the CMU's Auction Acquired Capacity (AAC) would then be calculated using the total of each de-rated component.

Due to the impact on AAC and the CM's security of supply principles, component switching would likely only be possible within the same GTC (i.e. switching a genuine demand response component for a behind-the-meter generation component would not be possible). Whilst this approach would align with the principles of CM Rule 4.4.4, it would likely constrain a DSR provider's ability to change components.

As some DSR components fall under the 1MW participation threshold, it is important for the government to consider the impact of policy changes on aggregated portfolios comprising of components across different DSR GTCs. For example, a portfolio with a combination of behind-the-meter generation and genuine demand response, where each component consists of less than 1MW of capacity.

There is a risk that, without due consideration, introducing additional categories while limiting the ability to switch components across these categories could introduce participation barriers for DSR in the CM.

Several responses to Question 22 of the October 2023 CM Phase 2 consultation[32] urged caution regarding changes that would restrict portfolio aggregation. Therefore, the government is seeking views on additional changes required to minimise any adverse impacts on aggregated portfolios.

Question 10: Do you agree with our proposed approach to component reallocation within Demand Side Response Generating Technology Classes?

Question 11: Do you believe that additional supporting changes are necessary to accommodate the proposals outlined in question 10?

Question 12: If you believe additional supporting changes are necessary, what changes do you propose should be considered?

4.5. Management of aggregated small-scale assets

The Capacity Market (CM) is seeing participation by Capacity Market Units (CMUs) which contain large volumes of components, typically in domestic settings, which have a very low Demand Side Response (DSR) capacity. At present there is no distinction between the information required for components with a very large capacity versus low-capacity components. Low-capacity DSR CMUs participation requires considerable administrative burden for Applicants, Capacity Providers, and Delivery Partners. Large volume, low-capacity CMU components within aggregated portfolios are likely to change through the Delivery Year.

[32] Department for Energy Security and Net Zero, October 2023, Capacity Market 2023: Phase 2 proposals and 10-year review

We are interested in views on alternative approaches to manage such portfolios. There is need to establish a proportionate approach which can address the level of information required to assure certainty of delivery and mitigate against asset duplication across portfolios, whilst minimising administrative and system burden.

Question 13: Do you agree that information submitted with respect to aggregated Capacity Market Unit portfolios could be reduced without negatively impacting delivery assurance?

Question 14: Please present views on how any alternative approaches could be addressed and implemented.

4.6. Baselining methodologies

Under the Capacity Market (CM) Rules, Capacity Providers are required to provide a baseline demand (in MW) for all Demand Side Response (DSR) Capacity Market Unit (CMU) Components starting six weeks prior to the start of the next Delivery Year. During a System Stress Event (SSE), this baseline can be compared with the actual demand to determine the volume of capacity made available through that DSR CMU Component.

Schedule 2 of the CM Rules outlines the baselining process. 16 data points are used in calculating the DSR baseline. The first six data points are the same settlement period on the same day of the week as the test date for the last six weeks. The remaining 10 data points depend on whether the DSR Test takes place on a working, or non-working day. Capacity Providers choose which settlement periods are used for calculating the DSR baseline for both DSR Tests and Satisfactory Performance Days.

There is a potential risk that allowing the nomination of settlement periods for calculating the DSR baseline might enable providers to exaggerate the capacity available during an SSE. For instance, Capacity Providers might select settlement periods in the early morning or late at night, times where site setup and behaviour may not reflect the DSR capacity available at times of system stress.

Several responses to Question 22 of the October 2023 CM Phase 2 consultation[33] noted that there are strong links between the baselining methodology and the CM's penalty regime (i.e. providers who have exaggerated their DSR capacity during baselining could, if they failed to deliver said capacity during an SSE, receive non-delivery penalties). Consequently, government is seeking views on changing baselining methodologies in the CM.

Additionally, the government recognises that a variety of baselining methodologies are adopted across different markets and is seeking views on whether the CM should seek to align with other methodologies used in wider markets.

Question 15: Do you have views on changing baselining methodologies in the Capacity Market?

Question 16: Do you have views on aligning baselining methodologies with other markets?

[33] Department for Energy Security and Net Zero, October 2023, Capacity Market 2023: Phase 2 proposals and 10-year review

Question 17: Do you have views on how changes to the penalty regime could incentivise more accurate baselining in the Capacity Market?

4.7. Completion Milestones

In the Capacity Market (CM), completion milestones are key checkpoints that ensure Capacity Market Units (CMUs) are on track to meet their obligations. Such milestones include the Financial Commitment Milestone (FCM) and the Substantial Completion Milestone (SCM). Failure to meet these milestones can result in financial penalties or the termination of the Capacity Agreement. These milestones are designed to ensure that CMUs are progressing as planned and can deliver the required capacity to maintain the security of electricity supply.

These completion milestones do not apply to Demand Side Response (DSR) CMUs. Instead, as outlined in Section 5 of the concurrently published Capacity Market (CM) Consultation on proposals to modernise CM Rules and improve participation and delivery assurance of consumer-led flexibility[34], a DSR Test is conducted to verify that DSR Capacity Providers can fulfil their obligations. This involves demonstrating the ability to reduce demand or increase generation to a specified level. Failure to deliver the DSR Test results in the risk of termination of the relevant Capacity Agreement.

The deadline for submitting a DSR Test certificate for Unproven DSR is one month before the delivery date (31 August)[35] . This deadline follows the annual publication of the Electricity Capacity Report (ECR), which assesses the required capacity in the CM to ensure security of supply. Consequently, there is no opportunity to compensate for capacity lost through failure to deliver DSR Tests in the T-1 auction for that Delivery Year. This necessitates procuring greater capacity in subsequent auctions to compensate for potential shortfalls, thereby increasing costs to the consumer from increased auction clearing prices.

Through Section 5 of the concurrently published consultation (See Capacity Market: Proposals to modernise Capacity Market Rules and improve participation and delivery assurance of consumer-led flexibility[36]), the government is seeking to introduce a termination fee associated with failure to deliver the DSR Test. However, that proposal does not address the inability to procure additional capacity through the T-1 auction, should capacity be lost through failure to deliver the DSR Test.

To mitigate this issue, the government is considering the introduction of a completion milestone for DSR CMUs, which would occur before the relevant T-1 Electricity Capacity Report. This would allow any lost capacity from DSR CMUs, which fail to meet a completion milestone, to be replaced ahead of the Delivery Year. Failure to meet a completion milestone could be met with a loss of credit cover which would reduce the risk of non-delivery, but also reduces the risk of a termination fee being paid by the Capacity Provider.

Question 18: Do you agree with intentions to introduce a completion milestone ahead of the relevant Electricity Capacity Report?

[34] Department for Energy Security and Net Zero, December 2024, Capacity Market: Proposals to modernise Capacity Market Rules and improve participation and delivery assurance of consumer-led flexibility
[35] CM Rule 3.10.2(a)
[36] Department for Energy Security and Net Zero, December 2024, Capacity Market: Proposals to modernise Capacity Market Rules and improve participation and delivery assurance of consumer-led flexibility

Question 19: Please explain the reasoning behind your response to question 18 and provide supporting evidence where appropriate. If you disagree, please provide suggestions and evidence for alternative methods that could be considered.

Question 20: Do you foresee any unintended consequences from earlier introduction of completion milestones?

5. Call for Evidence questions

Question 1: Do you agree with our proposals to introduce new Demand Side Response Generating Technology Classes based on technology type?

Question 2: Please provide the reasoning behind your response to question 1 and supporting evidence where appropriate. If you disagree, please provide suggestions and evidence for alternative methods that could be considered.

Question 3: Do you have any opinions on whether an additional Generating Technology Class is necessary for Electric Vehicles and Vehicle-to-Grid technologies, or can these be included in the proposed categories?

Question 4: Can you foresee any unintended consequences that might arise from the introduction of separate Generating Technology Classes for Electric Vehicles and Vehicle-to-Grid?

Question 5: What are your views on the utilisation of non-Balancing Mechanism Short-Term Operating Reserve in the current Demand Side Response de-rating methodology? Do you have any alternative suggestions? Please provide evidence to support your response.

Question 6: Do you agree that Demand Side Response exhibits duration limits?

Question 7: Do you agree with the proposals to adopt a duration limited methodology to de-rating Demand Side Response categories?

Question 8: Do you have views on whether this approach should be applied across all proposed Demand Side Response categories?

Question 9: Do you foresee any unintended consequences from adopting a duration limited methodology?

Question 10: Do you agree with our proposed approach to component reallocation within Demand Side Response Generating Technology Classes?

Question 11: Do you believe that additional supporting changes are necessary to accommodate the proposals outlined in question 10?

Question 12: If you believe additional supporting changes are necessary, what changes do you propose should be considered?

Question 13: Do you agree that information submitted with respect to aggregated Capacity Market Unit portfolios could be reduced without negatively impacting delivery assurance?

Question 14: Please present views on how any alternative approaches could be addressed and implemented.

Question 15: Do you have views on changing baselining methodologies in the Capacity Market?

Question 16: Do you have views on aligning baselining methodologies with other markets?

Question 17: Do you have views on how changes to the penalty regime could incentivise more accurate baselining in the Capacity Market?

Question 18: Do you agree with intentions to introduce a completion milestone ahead of the relevant Electricity Capacity Report?

Question 19: Please explain the reasoning behind your response to question 18 and provide supporting evidence where appropriate. If you disagree, please provide suggestions and evidence for alternative methods that could be considered.

Question 20: Do you foresee any unintended consequences from earlier introduction of completion milestones?

6. Next steps

This Call for Evidence will remain open to written responses for 9 weeks from 16th December 2024, closing on 17th February 2025. The government aims to respond in spring 2025. Further policy development will be informed by the range of responses the government receive, by further stakeholder engagement and by additional analysis. The government will analyse all responses to inform further policy development prior to formulating proposals for consultation. Alongside analysing the responses to this CfE, the government will analyse responses to the simultaneously published consultation on proposals to modernise Capacity Market Rules and improve participation and delivery assurance of consumer-led flexibility.

7. Glossary

Abbreviation/Term	Definition
Auction clearing price	The price at which the supply of capacity offered by bidders at that price is equal to the volume of capacity required to be secured in the auction.
Capacity	An amount of electrical generating capacity or Demand Side Response capacity, usually expressed in megawatts (MW) unless stated otherwise.
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, where successful bidders are awarded capacity agreements.
Capacity Market	The Capacity Market ensures security of electricity supply by providing a payment for reliable sources of capacity.
Capacity Market Rules/ CM Rules (“the Rules”)	The Capacity Market 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 procured through the CM.
Capacity Obligation	An obligation awarded pursuant to a capacity auction, applying for one or more Delivery Years, to provide a determined amount of capacity when required to do so in accordance with Capacity Market Rules.
Capacity Payment	A payment to a capacity provider under the Regulations for its commitment to meet a Capacity Obligation during a Delivery Year.
Capacity Provider	A person who holds a capacity agreement or a transferred part in respect of a capacity agreement.
Conditional Agreement Auction	T-1 auction for the Delivery Year commencing on 1st October 2019.
Conditional Capacity Agreement	An agreement awarded in a Conditional Agreement Auction.

Consumer-led flexibility	Flexibility by energy consumers – or taken on their behalf by suppliers with consumers' consent – to shift their electricity use in response to system need. For example, shifting away from peak periods or taking advantage of surplus renewable generation. Within the Capacity Market, consumer-led flexibility is represented via 'Demand Side Response' mechanisms.
Consumer-led flexibility	Flexibility by energy consumers – or taken on their behalf by suppliers with consumers' consent – to shift their electricity use in response to system need. For example, shifting away from peak periods or taking advantage of surplus renewable generation. Within the Capacity Market, consumer-led flexibility is delivered by Demand Side Response mechanisms.
Credit cover	A letter of credit or cash deposit required to be provided by a person (a prequalification applicant, a capacity provider or a supplier) to the Settlement Body. The Settlement Body may draw down on credit cover in certain circumstances set out in the Regulations and the Supplier Payment Regulations, e.g. if the person must pay the Settlement Body a termination fee in relation to the termination of a capacity agreement.
Delivery Body	The National Energy System Operator (i.e. NESO).
Delivery Partners	Refers to Ofgem, the Settlement Body and the Delivery Body.
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 (see turn-down DSR), or by starting up on-site generators to provide electricity in place of drawing it from the distribution network or transmission network (see behind the meter generation). DSR mechanisms in the CM deliver consumer-led flexibility.
Demand Side Response Test (DSR Test)	A DSR Test is conducted to verify that DSR Capacity Providers can fulfil their obligations. This involves demonstrating the ability to reduce demand or increase generation to a specified level. Failure to deliver the DSR Test results in the risk of termination of the relevant Capacity Agreement.

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.
Generating Technology Class	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).
Interconnector	(i) A physical link that allows for the transmission of electricity across GB's borders; and (ii) A business which operates such equipment.
Kilowatt (kW)	A unit of capacity (1000 Watts).
Megawatt (MW)	A unit of capacity (1000 Kilowatts).
Meter Point Administration Numbers (MPANs)	A 21-digit reference number used to identify electricity supply points, e.g. a domestic residence or industrial/commercial unit, at which an electricity meter or meters are located.
National Energy Systems Operator (NESO)	The organisation operating the national electricity transmission network for GB.
Net Zero	Refers to a point at which the amount of greenhouse gas being put into the atmosphere by human activity in the UK equals the amount of greenhouse gas that is being taken out of the atmosphere.
Ofgem	A non-ministerial government department and an independent regulator, governed by the Gas and Electricity Markets Authority. Ofgem's powers and duties in relation to the CM are provided for in Chapter 3 of Part 2 of the Energy Act 2013 (c. 32), the Regulations and the Capacity Market Rules, in which it is referred to as "the Authority".
Opt-out	A Mandatory CMU must state in the Opt-out Notification for an Existing CMU for a Capacity Auction that the CMU is: (a) opting out of the Capacity Auction and will be closed, decommissioned or otherwise non- operational by the commencement of the Delivery Year to which the Capacity Auction relates; or (b) opting out of the Capacity Auction and will be temporarily non-operational for all the Winter of the

Opt-out	Delivery Year to which the Capacity Auction relates but will be operational thereafter; or (c) opting out of the Capacity Auction but will remain operational during the Delivery Year to which the Capacity Auction relates.
Opt-out Notifications	For each Capacity Auction, if a Mandatory CMU makes no application, the person who is the legal owner of that Mandatory CMU must, during the Prequalification Window, submit an Opt-out Notification to the Delivery Body. This must state the reason why the CMU is opting out.
Penalty regime	The regime of financial penalties that are applied to capacity providers who do not provide their committed capacity during a System Stress Event.
Prequalification	The process set out in the Capacity Market Rules for the Delivery Body to confirm whether a CMU may bid in a capacity auction. A CMU must meet the requirements specified in the Regulations and the Capacity Market Rules to be prequalified.
Prequalification Window	For any Capacity Auction, the period specified in the Auction Guidelines within which applications for prequalification are to be made.
Primary Fuel Type	The primary fuel for a Generating CMU. If the Generating CMU comprises Generating Units which use different fuels, the primary fuel is the fuel used by the majority of the Generating Units on a MW basis.
Review of Electricity Market Arrangements (REMA)	The government has launched the Review of Electricity Market Arrangements (REMA) following 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.
System Stress Event (SSE)	A System Stress Event occurs when demand for electricity outstrips supply; it is defined in Rule 8.4.1 of the Rules.
T-1 auction	This is the capacity auction held one year ahead of the Delivery Year, which 'tops up' any capacity secured in the relevant T-4 auction.

T-4 auction	This the capacity auction held four years ahead of the Delivery Year, which secures most of the capacity needed in the relevant Delivery Year.
Termination	A CMU which meets the criteria for a termination event set out in Rule 6.10.1 may have its capacity agreement terminated, as per the procedure set out in Rule 6.10.2, resulting in termination fees, as set out in Rule 6.10.3.
TF1 / TF3 / TF4	Termination fee categories. Certain termination events have fees associated with them. There are five types of fees depending on the type of termination event which has occurred. These are categorised as TF1 through to TF5. Details can be found in EMRS Guidance: G11 – Termination of Capacity Agreements.
TP3	Capacity payment repayment category. There are four types of repayment categories depending on the termination event which has occurred. These are categorised as TP1-4 in Regulation 43B.
The Electricity Capacity Regulations ("the Regulations")	This refers to the Electricity Capacity Regulations 2014, S.I. 2014/2043, the principal regulations underpinning the CM.
Transitional auctions	T-1 auctions held in 2015 and 2016 to facilitate the delivery of DSR CMUs and smaller non-CMRS Distribution CMUs in the Delivery Years prior to the Delivery Year for the first full Capacity Auction.
Unabated (gas) generation	Electricity generation where carbon dioxide from burning natural gas is not captured and stored.
Unproven Demand Side Response (DSR)	DSR that has not yet demonstrated it has the necessary metering in place or demonstrated it can deliver a specified level of capacity.
Vehicle-to-Everything (V2X)	V2X, where "X" stands for everything, is the umbrella for all forms of technology whereby the EV battery can export electricity back to a system, be that a home (V2H), a building (V2B) such as a business or back to the electricity grid (V2G).
Vehicle-to-Grid (V2G)	A leading example of V2X – it allows electric batteries to store energy and discharge it back to the electricity network when it is most needed.
Winter	A period from 1 October to the following 30 April.

This Call for Evidence is available from: https://www.gov.uk/government/calls-for-evidence/capacity-market-consumer-led-flexibility

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