Department for
Business, Energy
& Industrial Strategy

Capacity Market 2023 consultation

Strengthening security of supply and alignment with net zero

Closing date: 3 March 2023

January 2023

Any enquiries regarding this publication should be sent to us at:
electricity.security@beis.gov.uk

Executive Summary

The Capacity Market (CM) is at the heart of the government's strategy for ensuring security of electricity supply in Great Britain. It is technology neutral, with existing generators competing against a range of other technologies to obtain agreements under which they commit to making their capacity available when needed, in return for guaranteed payments.

Since its introduction as part of the Electricity Market Reforms in 2014, the policy, economic and technological landscape in which the CM operates have shifted significantly. Renewable energy now makes up a significant proportion of our electricity generation system, and the use of innovative technologies, including batteries, are playing an increasingly important role in keeping the lights on across Great Britain. New technologies, such as Carbon Capture, Utilisation and Storage (CCUS) and hydrogen power and storage, are expected to come online over the coming decade, as the world moves to decarbonise. The UK is leading the way. In 2019 the UK became the first major economy to set a legally binding target to reach net zero greenhouse gas emissions by 2050. In 2021, with the publication of the Net Zero Strategy, the government built upon this by committing to delivering a decarbonised electricity system by 2035, subject to security of supply. Most recently, the British Energy Security Strategy (BESS) set out the government's ambition to accelerate clean, domestic sources of energy in order to reduce our exposure to volatile global energy markets, particularly following Russia's illegal invasion of Ukraine.

In light of these changes government issued a Call for Evidence (CfE) in July 2021 seeking views on proposals to better align the CM with the government's net zero targets and improve delivery assurance across the scheme. The CfE received 49 responses, and the government published a summary of these responses in July 2022. This process also signalled the beginning of government's engagement on the CM's next statutory review (the Ten-year Review) to examine its performance against its core objectives.

This consultation builds upon the CfE and our continued engagement with industry over the past 18 months. The proposed reforms set out in this consultation represent the next step in the evolution of the Capacity Market, and have been considered in light of the Review of Electricity Market Arrangements (REMA) programme.

In summary the government proposes:

Strengthening security of supply

- Reorganising **the Satisfactory Performance Days (SPD)** process around 3 distinct pass windows over the course of the winter of the Delivery Year to ensure regular checks on the availability and capability of Capacity Market Units (CMUs). The government is also seeking evidence on some of the challenges Capacity Providers have raised regarding the ability of storage CMUs to meet the requirements of the Extended Performance Test.
- Reforming the way that **connection capacity** is assessed in the CM, to ensure a higher degree of accuracy in assessing connection capacity across the CM. The government is

also considering enabling greater flexibility for Capacity Providers in selecting their connection capacity to account for site-specific risks.

- Changing rules relating to providing evidence of **Previous Settlement Performance of existing CMUs** to remove the barriers to mothballed plant from prequalifying. This builds on the temporary rule change put in place last year following our consultation on improving liquidity in the CM and places a new requirement for existing generating CMUs which are not able to demonstrate 24 months of Previous Settlement Performance to provide credit cover until they have demonstrated their first SPD.
- Strengthening the **non-delivery penalty regime** by changing the figure used in calculating the penalty rate to send a clear signal to Capacity Providers about the importance of delivery during a System Stress Event.

Aligning the CM with net zero

- **Ending the inconsistency between our decarbonisation commitments and the 15-year CM agreements available for unabated fossil fuel generation**. The government intends to achieve this by significantly reducing the emissions intensity limits applicable to new build plants from 1 October 2034.
- Call for evidence on creating pathways to **enable CMUs to leave their multi-year agreements early to decarbonise**, subject to security of supply considerations. High carbon CMUs risk being locked into their long-term CM agreements even if they are able to decarbonise. Creating managed exit pathways could accelerate the decarbonisation of capacity in the CM.
- Incentivising increased participation in the CM from low carbon flexible capacity by enabling **low carbon capacity with low capital expenditure to access multi-year agreements of three years without being required to meet capital expenditure thresholds**.
- Updating the reference cost levels for the CM's **capital expenditure thresholds** to ensure these thresholds are appropriate for the capacity mix which may be seen in the CM during the transition to a net zero power system. The government is also considering the introduction of a new 9-year threshold as a mid-point between the existing 3- and 15-year thresholds, with the aim of supporting a wide range of low carbon projects.
- Evaluating the role government energy policy has in supporting **projects with long build times** and the relationship between the CM and wider government support for large-scale long-duration electricity storage (LLES)**.**

Additional improvements to the CM

- Clarifying **auction clearing** mechanics.
- Reducing the administrative burden resulting from **requirements on the Secretary of State** to determine whether capacity auctions need to be held.
- Amending the existing route for certain projects to **exit the CM to become eligible to bid in a Contracts for Difference allocation round** so that the process works in practice.
- Reducing the cost and administrative burdens for Capacity Providers regarding the **requirement for Independent Technical Expert reports** for material changes to construction plans.

- Temporarily delaying the requirement for **Fossil Fuel Emissions Declaration verification** from prequalification 2023 to 2024. Any verifications carried out in 2023 will also be valid for 2024.

Next steps

This consultation builds on the 2021 CfE and represents the next stage in exploring reforms to the CM to support alignment with the government's net zero ambitions and improve delivery assurance. Cumulatively, the proposals included in this consultation aim to further address the emerging security of electricity supply challenges resulting from increasing demand and greater volumes of intermittent renewables on the system.

The government will consider responses to this consultation and aims to publish a response in Spring 2023.

The response will outline the proposals the government aims to implement. The government has historically made changes to the CM through secondary legislation for the following delivery year, however – as in every year - this is subject to when parliamentary time allows. These proposals will be informed by the range of responses the government receive to this consultation, by further stakeholder engagement and by additional analysis. In particular, implementation of the post-2035 emissions regime proposal will be subject to detailed analysis of any impact to security of supply from the late 2020s. Implementation will also be subject to ensuring the proposed changes are compliant with the requirements of the UK's new domestic subsidy control regime, which will be in force from January 2023.

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1. Introduction

1.1 Background

In July 2021, the government published a Call for Evidence (CfE) on improving delivery assurance and better aligning the Capacity Market (CM) with the targets set out in the Net Zero Strategy.

The proposals put forward for consideration included: defining 'low carbon capacity', changing the approach to eligibility for long multi-year CM agreements, and reviewing the CM's capital expenditure (Capex) thresholds to ensure they continue to be fit for purpose. The CfE also sought views on reforming the CM's auction design to incentivise low carbon participation, and enabling low carbon projects with long build times to access longer delivery timelines in the CM.

The CfE also explored how to improve assurance that capacity secured at CM auctions will deliver in times of electricity system stress, in response to the projected increase in demand on the electricity system as GB's economy transitions towards net zero. Considerations put forward for improving delivery assurance included strengthening the CM's non-delivery penalty regime, reforming the approach to calculating connection capacity, and introducing a route for replacing capacity whose obligation has been terminated without being fully or partially transferred. Ideas for reviewing the approach to calculating de-rating factors to better account for non-delivery risks specific to capacity reaching the end of its operational life were also put forward.

In addition to the above considerations, the CfE also sought stakeholder views on a range of options for accounting for cross-border flows in the future now that the UK is no longer required to implement direct cross border participation in the GB CM. Finally, the CfE signalled the beginning of the government's engagement with stakeholders on the next five-yearly statutory review of the CM (the Ten-year Review), which is due to be laid before Parliament by summer 2024. The window for responses to the CfE closed in October 2021, and a summary of responses was published in July 2022.

1.2 Developments since the 2021 Call for Evidence

Since the publication of the CfE in July 2021 there have been a number of important developments in the power sector. In autumn 2021, the global easing of Covid-19 restrictions contributed to a surge in wholesale gas prices, which in turn caused a significant increase in wholesale electricity prices. This trend was exacerbated in February 2022 when Russia illegally invaded Ukraine, which led to higher gas and power prices across Europe and increased concerns about energy security for winter 2022/23 and beyond.

The UK government took swift action to bolster electricity security of supply, including pre-emptively procuring the maximum amount of available capacity in the CM's 2022/23 T-1 auction held in February 2022 in response to the wider range of uncertainties for energy security. The government also requested that the National Grid Electricity System Operator (NGESO) engage with the operators of certain coal plants to temporarily extend their operations to provide additional capacity in winter 2022/23 if needed, resulting in around 2GW of additional capacity remaining on the system.

As well as taking immediate actions to bolster security of supply, in April 2022 the government set out its vision for improving GB's energy security over the medium and longer term in the British Energy Security Strategy (BESS), including ambitious new targets on the buildout of offshore wind and new nuclear capacity, and increased targets on hydrogen production. The BESS also announced the Review of Electricity Market Arrangements (REMA), which is a major review into Britain's electricity market design to radically enhance energy security and to help deliver the government's world-leading climate targets whilst reducing exposure to international gas markets. An initial consultation on REMA ran from July to October 2022 and included options for optimising the CM (including changes to the CM's auction design as first considered in the CM CfE), and for alternative policy mechanisms for ensuring capacity adequacy. A government response is due to be published this year.

The impact of increased geopolitical uncertainty on energy security and the government's clear ambitions for power sector decarbonisation have strengthened the rationale for taking action to reform key aspects of the CM's design. The government has reviewed the considerations in the CfE and stakeholder feedback and has continued to engage with stakeholders about potential reforms throughout 2021 and 2022. This consultation sets out a range of proposals aimed at improving the CM's alignment with the achievement of net zero targets, and at strengthening security of supply by improving assurance that capacity secured at auction will deliver when needed in times of system stress. The government has also continued to review the CM's design and to work with stakeholders and delivery partners to identify general improvements, which are also proposed in this consultation.

The proposals are grouped into three main sections, as set out above in the Executive Summary. The main proposals are followed by an Assessment of Impacts and by a brief section setting out next steps. Where appropriate and following stakeholder feedback, the government will aim to implement changes ahead of the auction prequalification window opening in July 2023. Implementation will also be subject to ensuring the proposed changes are compliant with the requirements of the UK's new domestic subsidy control regime, which will be in force from January 2023.

1.3 Consultation details

Issued: 9 January 2023

Respond by: 3 March 2023

Enquiries to: electricity.security@beis.gov.uk

1.4 How to respond

Respond online at: https://beisgovuk.citizenspace.com/clean-growth/capacity-market-consultation

or

Email to: electricity.security@beis.gov.uk

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

Your response will be most useful if it is framed in direct response to the questions posed, though further comments and evidence are also welcome.

1.5 Confidentiality and data protection

Information you provide in response to this consultation, 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.

1.6 Quality assurance

This consultation has been carried out in accordance with the government's consultation principles.

If you have any complaints about the way this consultation has been conducted, please email: beis.bru@beis.gov.uk.

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2. Strengthening security of supply

2.1 Introduction

As noted in the introduction to this consultation, strengthening security of supply by improving assurance that capacity secured at CM auctions will deliver in times of system stress remains a priority for government since the publication of the CM CfE in 2021. Stakeholder feedback to the CfE demonstrated significant support for taking action to ensure that the CM provides the right signals to incentivise Capacity Providers to deliver on their obligations. However, stakeholders also noted in the importance of targeting reforms at the most appropriate parts of the CM's design to ensure any changes are effective in improving delivery assurance, as well as emphasising the need to avoid creating any additional complexity in the CM's design wherever possible. These principles have guided the government's approach to the proposed reforms set out in chapter 2 of this consultation.

The government has continued to engage with stakeholders on the design areas covered in the CfE throughout 2021 and in 2022. The government has also worked closely with delivery partners including the CM Delivery Body, the Settlement Body (the Electricity Settlements Company, or ESC) and Ofgem to identify appropriate and effective reforms. This engagement has enabled government to design the proposals below on reforms to the Satisfactory Performance Day process, to the approach to identifying a CMU's connection capacity, and to the CM's non-delivery penalty regime. Moreover, following a short consultation in June 2022 on improving auction liquidity in the CM, the government has returned to the temporary changes made to enable mothballed capacity to prequalify for the CM, with a view to permanently enabling such capacity to enter the CM with appropriate delivery assurance safeguards in place.

This consultation does not include proposals for the creation of a mechanism to replace capacity in the CM which has been terminated without its obligation having been fully or partially transferred to another provider, as the government agrees with respondents to the CfE that this challenge should be considered in the context of a wider review of Secondary Trading in the CM. The government is also continuing to consider a range of approaches to the de-rating process and has therefore not brought forward proposals as this time.

2.2 Satisfactory Performance Days

2.2.1 Context

The Satisfactory Performance Day (SPD) process plays an important role in providing assurance that Capacity Market Units (CMUs) are available and capable of meeting their Capacity Obligation, particularly during the winter months. The SPD process currently requires CMUs to demonstrate their ability to meet their Capacity Obligation for at least one settlement period on three separate days over the winter period of the relevant Delivery Year (submission

timelines vary depending on the Rules in place at the time when a CMU was issued a Capacity Agreement).

There have been two recent developments which have prompted government to reconsider how the SPD process can be optimised. Firstly, the additional risks and uncertainties for winter 2022/23 arising from the impact of Russia's illegal war in Ukraine on Europe's energy security have sharpened the need for assurance early in the winter period that capacity secured at CM auctions is ready and available to deliver. Under the current SPD process, the Delivery Body does not have confirmation that some CMUs have passed their SPDs until the end of April (and therefore at the end of the winter period of the Delivery Year), which in our view does not provide assurance that CMUs are available and capable of fulfilling their Capacity Obligations throughout the most challenging months of the Delivery Year.

Secondly, the ESC's successful automation of the SPD process for all CMUs has had a twofold impact: it has significantly streamlined the SPD process, thereby largely eliminating the administrative burden of SPDs for Capacity Providers; and it has enabled government and delivery partners to gain valuable insights into CMU performance on a settlement period basis. This improved visibility of CMUs has enabled government and delivery partners to take a more targeted approach to SPDs. Proposed changes to the existing SPD process are set out below, and if implemented will only apply to agreements awarded after any amended Rules come into force.

2.2.2 Proposed changes to the Satisfactory Performance Days process

The government proposes that the SPD process should be organised around three distinct pass windows over the course of the winter of the Delivery Year to ensure regular checks on the availability and capability of CMUs. Following the automation of SPDs, this new process should require no action to be taken beyond running as they normally would during these pass windows. For storage CMUs, the Extended Performance Test (EPT) could be demonstrated at any one of the three SPD pass windows set out below.

Data from ESC demonstrates that in the 2021/22 Delivery Year, CMUs representing 72% of the total de-rated capacity awarded demonstrated their first SPD in October, and that by the end of November, this reached around 90%. The government is therefore minded to amend the Rules on SPDs to create an earlier deadline for demonstrating an SPD. This change would reflect the reality that a large majority of CMUs demonstrate one SPD very early in the Delivery Year, and it would serve to ensure that all CMUs in the scope of this change demonstrate satisfactory performance in advance of the most challenging winter months. Amendments to the Regulations may also be required to reflect the new approach to SPDs set out below.

Under the proposed revised SPD process, Capacity Providers whose CMUs are operational would be required to demonstrate their SPDs as follows:

SPD Number	**Pass window**
1	1 October to 31 October

SPD Number	Pass window
2	1 January to 31 January
3	1 March to 31 March

The first pass window would provide assurance as early as possible in the Delivery Year that CMUs are available and capable of delivering. The subsequent two pass windows are targeted at gaining assurance of a CMU's continued availability and capability at regular intervals throughout the winter period. Once all relevant data has been collated, ESC's pass reporting will set out which CMUs have met the SPD requirement.

Where an SPD is not demonstrated during the relevant pass window, the CMU's payments will be suspended, and the CMU will have an additional month while suspended to meet the outstanding SPD requirement for the relevant pass window. These extended windows would run as follows:

SPD Number	Extended pass window while suspended
1	1 November to 30 November
2	1 February to 28 February
3	1 April to 30 April

If the relevant SPD has still not been demonstrated during the extended pass window, the CMU's payments would continue to be suspended, and the CMU would be subject to termination. Where an SPD has been missed and another pass window has opened, a suspended CMU and a CMU issued with a termination notice will still be expected to pass the upcoming SPD, given that the missed SPD could still be met during the suspension period alongside the SPD for the ongoing pass window, and given that terminations can be appealed.

The government also propose to amend the Rules to clarify that where a Capacity Provider has traded part of their capacity agreement obligation, they will be required to demonstrate an SPD to the level of their CMU's Net Capacity Obligation.

Question 1

Do you agree with the proposed changes to the SPD process? Are the proposed changes likely to cause any unintended consequences?

2.2.3 Call for evidence on the Extended Performance Test

The EPT aims to provide assurance that CMUs in a Storage Generating Technology Class (and CMUs containing at least one Demand Side Response (DSR) component which contains

a Storage Facility) can deliver capacity for the relevant duration (for example, 2 hours). At present, the Rules require a relevant CMU to demonstrate extended performance "at a level equal to or greater than its Adjusted Connection Capacity for the number of consecutive Settlement Periods that is equivalent in duration to the specified minimum duration for that Storage Generating Technology Class".

Storage CMUs now account for a more significant portion of capacity in the CM than they did when the EPT was designed, and Capacity Providers have begun to raise a number of concerns about the ability of battery CMUs in particular to continue to meet the EPT over the course of multi-year agreements. More broadly, Capacity Providers have also raised questions about how best to account for the degradation of batteries over the course of multi-year CM agreements.

Any changes to the EPT and considerations regarding battery degradation would need to be examined carefully through engagement with delivery partners and Capacity Providers to ensure reforms would be effective and would not introduce any unintended consequences. The government is therefore seeking evidence on any challenges faced by storage CMUs during a CM agreement, particularly regarding performance testing, and welcomes views on whether and how the CM could be reformed to address such challenges.

For example, the government has considered amending the EPT to base the test on a CMU's Net Capacity Obligation rather than on Adjusted Connection Capacity, which would bring the EPT in line with the broader SPD testing regime. However, the government is mindful of the complex interplay between the EPT and de-rating factors and the nomination of storage duration, and of the potential for introducing gaming risks to the CM through making changes to the EPT. The government welcomes views on this consideration and suggestions of alternative options for potential reforms to the EPT.

Question 2

Are there any barriers faced by storage CMUs in meeting the CM's performance and duration testing requirements, and if so, can you suggest any potential solutions? Please provide evidence to support your response.

2.3 Connection Capacity

2.3.1 Context

Section 3.2 of the CfE explored the creation of a connection capacity test (as devised by Ofgem in an earlier consultation) to ensure that a CMU's Capacity Obligation accurately reflects its total export capacity to the transmission or distribution network. Feedback on this proposal was mixed, with several respondents highlighting their view that the risk that the introduction of a test would increase the CM's complexity and create additional administrative burdens for Capacity Providers. Responses also suggested connection capacity should instead be based wherever possible on actual metered data. In subsequent engagement

sessions, the government has held with industry, stakeholders have commented on the overall complexity of connection agreements and of the process for selecting the appropriate connection capacity for submission as part of the prequalification process in accordance with the Rules.

In light of stakeholder feedback, the government is not minded to introduce a connection capacity test as considered in the CfE. Instead, the government is minded to amend the Rules on determining connection capacity to achieve two aims: firstly, to ensure as far as possible that a CMU's connection capacity is reflective of the capacity it can credibly export either to the transmission or the distribution network; and secondly, to simplify the process for determining a CMU's connection capacity by clarifying and harmonising the available options for different CMUs under the Rules.

2.3.2 Proposed changes to connection capacity

The government proposes to amend the Rules such that all Capacity Providers can base the connection capacity of their CMUs (regardless of technology type) on one of the following three figures:

- The CMU's Transmission Entry Capacity (TEC); or
- The CMU's Maximum Export Capacity (MEC); or
- The CMU's Average Output (calculated in accordance with Rule 3.6.1(a) on Previous Settlement Period Performance).

The government is also minded to require Capacity Providers whose CMUs are part of multi-unit sites to cap the sum of the connection capacity of the relevant units at the site level of TEC or MEC. This will prevent situations in which the connection capacity of individual units on a multi-unit site may be overstated in relation to the total site TEC or MEC.

The proposed approach would remove the option to base connection capacity on Connection Entry Capacity (CEC) for Transmission CMUs, as well as a range of options for Distribution CMUs. The government is of the view that Average Output is a viable option for the majority of CMUs, and that TEC or MEC should be clearly visible on connection agreements, including prospective agreements for new build CMUs. However, stakeholder views are welcome on whether there are any risks that TEC and MEC are not included in all connection agreements or prospective agreements.

For example, Rule 3.5.2 accounts for scenarios in which the registered capacity or inverter rating is not shown on a connection agreement, or where such an agreement or offer has not yet been made, by allowing Capacity Providers to estimate in good faith the maximum amount of capacity physically capable of being exported to the Distribution Network. The government welcomes stakeholder views on whether it is necessary to retain such options in any amendments to the Rules.

A CMU's ability to deliver on the Capacity Obligation which results from this connection capacity (once de-rated) will be demonstrated at the first SPD (see section 2.1 above), with

CMUs subject to the relevant sanctions for failing to meet SPDs (suspension of payments followed by a possible termination).

The government is also seeking views on whether Capacity Providers would prefer to be able to self-nominate their connection capacity up to but no higher than whichever is the highest figure: the CMU's TEC, MEC, or Average Output. This may help Capacity Providers to manage any non-delivery risks specific to their CMUs. Again, the connection capacity for all units on a multi-unit site would be required to be capped at the sum of site-level TEC or MEC.

Question 3

Do you agree with the proposed changes to enable Capacity Providers to determine a CMU's connection capacity solely on the basis of TEC, MEC or Average Output? Are there any unintended consequences of taking this approach?

Question 4

Should Capacity Providers be allowed to self-nominate their CMU's connection capacity, provided the nominated figure is not higher than TEC, MEC or Average Output?

2.4 Mothballed Plant

2.4.1 Context

Rule 3.6.1(a) relevantly provides that, in relation to Previous Settlement Period Performance that an existing Generating CMU must be able to identify three settlement periods from the 24 months prior to the Prequalification Window in which the CMU delivered a net output equal to or greater than its Anticipated De-Rated Capacity, and to report the operational data for each of those settlement periods. The policy intent of Rule 3.6.1a is to ensure that the existing Generating capacity is real and capable of delivering.

In 2018, Ofgem consulted and introduced the above requirement. The rationale for this was "to ensure that the periods specified by the generator are recent enough to be representative of the generator's performance but allow enough time for generators to prove their capacity if – for example – they are mothballed or unavailable". Prior to 2018, Rule 3.6.1(a) allowed existing Generating CMUs which had not been operational for the 24 months before prequalification to use operational data that was more than 24 months old to comply with this Rule.

As stated in the June 2022 CM Consultation on Rules Amendments to Improve Liquidity Consultation, it has been brought to the government's attention that Rule 3.6.1(a) could prevent certain plants which have been mothballed from applying to prequalify. In light of a wider range of uncertainties for winter security of supply resulting from Russia's illegal invasion of Ukraine, the government temporarily made an amendment to the Rules to enable mothballed existing Generating CMUs to apply for prequalification for the 2023 T-1 and T-4 auctions without running for three settlement periods prior to the end of the prequalification

window, with a view to maximising the amount of capacity able to prequalify for the CM auctions to support security of supply in Delivery Year 2023/24.

As outlined in the June 2022 CM Consultation on Rules Amendments to Improve Liquidity Consultation, this was not a permanent Rule change, and further policy development would be required before considering implementation of any permanent changes. Since the 2022 consultation, the government have considered how best to balance the need to maximise auction liquidity by enabling mothballed plant to apply to prequalify for CM auctions with the need to establish appropriate delivery assurance measures to ensure that such plant is available and capable of delivering.

2.4.2 Proposed changes in relation to Previous Settlement Period Performance

The government proposes the requirements imposed in relation to Previous Settlement Period Performance as set out in rule 3.6.1(a) remain, but that the Rules and Regulations should be amended to require existing Generating CMUs which cannot meet this requirement to declare this at Prequalification and to provide credit cover. This credit cover would be released once the CMU in question is confirmed as having demonstrated its first SPD, which would need to be demonstrated by the end of November (see proposal 2.1). The government considers that this proposal balances the need for mothballed plant to provide additional assurance in the absence of recent performance data with the need to avoid creating complex processes around their application for prequalification. Should a mothballed CMU fail to demonstrate their first SPD, they would be subject to suspension and potential termination (with associated termination fees) as outlined in Proposals 2.1 above.

This proposal does not change the part of rule 3.6.1(a) which refers to secondary trading, so an Acceptable Transferee for a secondary trade will still be required to evidence their CMU's Previous Settlement Period performance using data from within the 24-month window specified in rule 3.6.1(a). This is because the government expects an Acceptable Transferee to provide assurance of their ability to mitigate the non-delivery risk of the transferred capacity as soon as the transfer is complete.

Credit cover would need to be maintained for as long as the mothballed plant's running ability is unproven. Where a mothballed CMU first gains a T-4 agreement and then subsequently gains a T-1 agreement for an earlier Delivery Year, the government considers it appropriate that the mothballed CMU's credit cover originally provided for the T-4 agreement should be released following the successful demonstration of the first SPD in Delivery Year for the T-1 agreement, as this will provide the necessary assurance that the CMU is available and capable of delivery.

The government is minded to require credit cover along the lines of the process in CM Rule 4.6.1 'Conditional prequalification – Applicant Credit Cover'. This outlines once a CMU has received a notice from a Delivery Body under Regulation 73(2)(b) or Rule 4.5.1(b)(ii), (iii) or (iv) of its conditional Prequalification must, within 15 working days of such notification, provide Applicant credit Cover to the CM settlement Body in accordance with the regulations. The

amount of credit cover would be in line with Regulation 59(2) (a) 'Requirement to provide applicant credit cover', which is £10,000 per MW of derated capacity of a CMU'.

Government recognises the need to ensure there is a viable route for mothballed capacity which are existing Generating CMUs to return to the CM, whilst also ensuring delivery assurance remains a priority to ensure security of supply. The government is seeking views on whether this proposal provides enough assurance of delivery whilst also being a reasonable expectation of a plant.

Question 5

Do you agree with the proposed changes to enable mothballed plants which are existing Generating CMUs to return to the CM? Would these changes result in any unintended consequences?

2.5 Penalty Regime

2.5.1 Context

In the CM's 2019 Five-year Review, the government and stakeholders agreed that opportunities to strengthen the CM's penalty regime for non-delivery in a System Stress Event should be explored.[1] The 2021 CfE therefore set out a range of options regarding non-delivery penalties, including strengthening the penalty rate and penalty caps, introducing a 'stress event cap', and introducing an alternative penalty regime involving the suspension of capacity payments for a set period.

Stakeholder responses to the CfE continued to be supportive of the government taking steps to strengthen the penalty regime, with 25 of 34 responses to the question on strengthening the penalty rate expressing broad support for this change. Changes to the penalty caps were less popular (12 of 29 responses expressed qualified support). Respondents were concerned that changes to the penalty caps might tip the balance of risk and reward too far for Capacity Providers, such that they either factor the increased risk into their auction bids (thereby increasing auction costs) or cease to participate in the CM (again, with potential impacts on auction liquidity and costs). The same was felt to be the case for the alternative penalty regime involving a suspension of payments.

The government continues to view the non-delivery penalty regime as an important signal to Capacity Providers to ensure their CMUs are capable of fulfilling their Capacity Obligation during a System Stress Event. Indeed, increased uncertainties regarding security of supply for upcoming winters caused by Russia's illegal invasion of Ukraine have underlined the importance of sending a clear signal in the CM to deter non-delivery. However, the government has also carefully considered stakeholder feedback to the CfE regarding the importance of

[1] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/819760/cm-five-year-review-report.pdf

maintaining the right balance of risk and reward in the CM to ensure capacity can continue to come forward through the mechanism and provide security of supply at a reasonable cost to the consumer. Proposed changes to the non-delivery penalty regime are set out below.

2.5.2 Proposed changes to the penalty rate

The government is minded to make one change to the non-delivery penalty regime at present, which is to increase the figure used in calculating the penalty rate from 1/24 to 1/4. The government recognises that this is the strongest figure put forward in the CfE. However, given that no changes will be made at present to the penalty caps, the government considers that a significantly strengthened penalty rate sends a clear signal to deter non-delivery in a System Stress Event without increasing the financial risk faced by Capacity Providers to the same extent as a more punitive penalty cap. Even in light of the proposed increase to the penalty rate, the CM's penalty caps mean that Capacity Providers would not risk losing more money than they receive in CM payments even if their CMUs failed to deliver any capacity during multiple stress events.

Under the above proposal, the penalty rate would change as follows:

Penalty rate (expressed in £/MWh) = clearing price (£/MW) x 1/24

to:

Penalty rate (expressed in £/MWh) = clearing price (£/MW) x 1/4

The existing penalty rate (as set out in paragraph 5(3) of Schedule 1 of the Regulations) will be retained for those holding capacity agreements prior to the coming into force of any relevant amendments (if implemented) following consultation.

Question 6

Do you agree with the proposed changes to the CM's penalty rate? Are any unintended consequences likely to result from this change?

2.5.3 Proposed changes to the timelines for calculating non-delivery penalties

Regulation 41(2) sets out requirements for when the ESC must determine the penalty amount a capacity provider has incurred through non-delivery in a stress event, and when the ESC must invoice the relevant capacity provider. At present, the deadline is set at 21 working days after the end of the month in respect of which the penalty applies.

As a result of thoroughly testing their systems ahead of winter, the ESC has raised concerns that in respect of Relevant Balancing Services, it can take longer than the current timeline allows for the Delivery Body to receive the necessary data and provide this data to the ESC. Attempts to accelerate the data flows are likely to result in errors, and therefore in the inaccurate issuing of non-delivery penalties to Capacity Providers.

To ensure that non-delivery penalties can be calculated and issued accurately to Capacity Providers, the government is minded to amend the current 21 working day deadline to allow 35 working days after the end of the month in respect of which the penalty applies. This change, if implemented, will allow sufficient time for the Delivery Body to provide accurate data on Relevant Balancing Services to ESC, even if a stress event occurs on the final day of the month.

Question 7

Do you agree with the proposed changes to the timelines for calculating non-delivery penalties?

3. Aligning the Capacity Market with net zero

3.1 Introduction

In the 2021 Net Zero Strategy, the government committed to delivering a fully decarbonised power system by 2035, subject to security of supply. The 2022 BESS provided further details on how the government will deliver on this commitment, whilst meeting increased demand for electricity and ensuring secure and affordable electricity for the long-term. A cost-effective approach to decarbonising the power sector will require significant deployment of flexible low carbon capacity (Carbon Capture, Utilisation and Storage (CCUS), hydrogen, storage etc.) to complement intermittent and inflexible low carbon generation. The REMA programme will be a key enabler here and will consider wider reaching reforms, including reforms to the CM for potential implementation in the longer-term.

It is important that the government takes steps to ensure the CM is aligned with our decarbonisation target. To date, carbon intensive capacity has played a central role in providing flexible generation. As the government moves towards a decarbonised power sector, it is expected that the role of carbon intensive capacity will evolve towards providing capacity only to guarantee security of supply at peak times. Achieving this will involve a decline in the amount of non-peaking unabated gas generation, while facilitating the decarbonisation of existing unabated gas generation. Removing barriers for low carbon technology to participate in the CM will also provide additional capacity which will strengthen security of supply. Additionally, increasing the diversity of low carbon technologies within the CM will help to limit the GB power sector's exposure to volatility in the international fossil fuel markets.

Industry stakeholders have highlighted the need for the government to provide a clearer strategic direction for decarbonisation of the power sector. The CM is a significant driver of investment in the GB sector, therefore aligning the CM with decarbonisation targets should help to stimulate investment in low carbon technologies and create pathways for decarbonisation. It should also help to pave the way for potential further reforms being considered under REMA.

There are a number of changes the government believes need to be made in the shorter-term to address the challenges above. The government aims to align the current rules on emissions limits with net zero targets and also to remove existing barriers to decarbonisation and low carbon technology participation in the CM. This will be achieved by setting a clear strategic direction for decarbonisation aligning long-term agreements for new build plants with the decarbonisation commitment, and by driving investment in low carbon technologies and abatement through the fine-tuning of policy on decarbonisation routes, Capex thresholds and access to multiyear agreements. The government views hydrogen and CCUS conversion as the main decarbonisation pathways for unabated gas generation in the medium term. Building on our prior Call for Evidence on Decarbonisation Readiness we continue to explore how to ensure developers of all new build and substantially refurbishing combustion power plants to

have viable decarbonisation plans for converting their plants to either hydrogen generation or carbon capture technology highlights this ambition. The proposals in this consultation, alongside those for Decarbonisation Readiness, will complement the expansion of the low carbon hydrogen and CCUS economies by providing deployment pathways for reliable and significant demand offtakers. As such, updating the CM to align with net zero ambitions helps drive forward a virtuous cycle of decarbonisation and enhanced security of supply.

3.2 Aligning Capacity Market Agreements with decarbonisation commitments

3.2.1 Context

As discussed in our 2021 CfE on the CM,[2] at present, CM agreements of up to 15 years are awarded to new build projects that meet certain Capex thresholds. Because CM auctions are held four years ahead of delivery, this means agreements are already being awarded for delivery beyond 2035. The CM is technology neutral, therefore some of these new-build agreements have been awarded to unabated gas plants.

The technology mix of the power system in 2035 is subject to the development and deployment of low carbon technologies and associated infrastructure. However, unabated gas plants which continuously operate for significant hours through the year (i.e. mid-merit or baseload) are unlikely to be consistent with the decarbonisation pathways set out in the Net Zero Strategy[3]. There will, however, be a role for unabated gas plants that can run peaking profiles, whilst the low carbon alternatives that can replace them reach maturity, provided they run infrequently and only when the system most needs it for security of supply.

One potential proposal for net zero alignment which the government put forward for discussion in the 2021 CfE was the concept of restricting the length of CM agreements awarded to new build unabated generation. As set out in the summary of response to the CfE, which the government published in July 2022,[4] most respondents agreed that there should be some form of limitation on the eligibility of high carbon capacity for long term agreements. There was also a mixed response on how eligibility should be defined. Broadly speaking, those who supported eligibility based on emission intensity limits argued for greater alignment to net zero, whilst those who supported annual emission limits urged a focus on security of supply. Responses were also mixed regarding what alternate agreements should be made available for high carbon new builds. The majority of respondents who supported agreement length limitations for high carbon capacity still supported access to shorter multi-year agreements for security of

[2] https://www.gov.uk/government/consultations/capacity-market-2021-call-for-evidence-on-early-action-to-align-with-net-zero
[3] https://www.gov.uk/government/publications/net-zero-strategy
[4] https://www.gov.uk/government/consultations/capacity-market-2021-call-for-evidence-on-early-action-to-align-with-net-zero

supply, although responses also emphasised the need for support to be phased out in a timely manner and for low carbon new builds and abatement retrofits to be appropriately incentivised.

Some responses to the CfE raised concerns that, in their view, restricting the length of CM agreements would either disincentivise new build unabated gas plants entirely, or else raise their bid price to an extent which would represent poor value for money to the consumer. Many respondents also emphasised the need for clarity on the government's plans for CM emission limits to enable the forward planning required for investment cases.

The government has reflected on the CfE feedback and is therefore proposing an alternative approach which aligns CM agreements with our commitment to deliver a fully decarbonised power system by 2035, whilst recognising the role unabated flexible generation could play in ensuring security of supply in the future electricity generation system. This proposal will seek to build on the existing emissions limits regime in the CM, rather than creating new agreement lengths, with the aim of easing implementation and giving clarity to stakeholders.

3.2.2 Proposal

The CM currently contains an emissions intensity limit and a yearly emissions limit. New build CMUs must meet the emissions intensity limit to secure multi-year agreements, whilst from 2024 existing capacity must comply either with the intensity limit, or the yearly emissions limit. The current intensity limit is 550gCO_2/KWh which is below the level emitted by coal, diesel and some older gas plants, but above the level of most gas plants. CMUs that do not meet the intensity limit, can still participate if they meet the yearly limit. The current yearly limit is 350kgCO_2/kWh, which translates to approximately 400 hours of operation per year for an oil or diesel plant, less for a coal plant and more for an older gas plant, depending on the efficiency of the plant. If CMUs do not meet either limit, then they cannot participate in the CM.

The government proposes that from 1 October 2034, for **new and refurbishing capacity which secures CM agreements after this rule change comes into force**, CM intensity emission limits would decrease to **100gCO_2/kWh.** The intention behind this is to enable low-carbon technologies that have some residual emissions, such as CCUS enabled generation, to meet the limit. However, the government does not expect that it would be met by unabated gas, assuming that an unabated gas plant that is 50% thermally efficient would emit approximately 370gCO_2/kWh.

It is important to note that this would be based on the emissions limit methodology which already exists in the CM, which looks at stack emissions only. The government is proposing to maintain this approach for consistency and to reduce the administrative burden on CMU providers, and therefore the limit will not factor in wider lifecycle emissions, such as the emissions from the construction and running of the plant.

The government estimate that a CCUS gas plant that is 50% thermally efficient would be able to meet the 100gCO2/kWh limit with a minimum capture rate of circa **73%.** This is broadly

consistent with capture availability requirements in the CCUS Dispatchable Power Agreement[5] (DPA), where payments reflect capture plant performance and if capture performance drops below 70% for three consecutive billing periods the Generator is required to undertake remedial work or risk termination of its DPA. The CM emission limits regime for CCUS is based on a relatively simple calculation taking account of the annual average capture rate, therefore additional flexibility is required to safeguard against technical issues bringing a plant with an otherwise adequate capture rate (e.g. 90%) falling under a CM limit based on the annual averages. As non-compliance with the limit would result in the automatic termination of the CM agreement, the government considers this an appropriate approach.

For hydrogen power plants, the government expect this intensity limit would also allow for a small proportion of natural gas blended with hydrogen, of up to around 10%. The government recognise these proposals could have an impact on the deployment of emerging transitional technologies such as plants running natural gas blended with hydrogen. These impacts are discussed in section 3.2.4.

Regarding the CM yearly emission limits for new and refurbishing capacity, from 1 October 2034 the government intends to set it at the same level as one which existing capacity can currently access if they do not meet the intensity limit for existing plants. This yearly emissions limit is already set at a level which allows unabated gas to continue to operate peaking profiles without constraint but would prevent non-peaking (e.g. mid-merit or baseload) operations. The government estimates that an unabated gas peaker plant that is 40% thermally efficient would emit approximately 460gCO2/KWh. It would therefore be able to run for around **750 hours / year** under the current yearly limit for existing plants of **350kgCO2/kW.** Given that the most active peaking plants typically run in the region of hundreds of hours per year (the maximum load factor of OCGTs participating in the Balancing Mechanism in the past three years has been around 5% or 450 hours per year) while mid-merit plants operate for thousands of hours per year, the limit may therefore be set at the appropriate level. This would also allow for additional running hours in unusual years where this is required, thereby safeguarding energy security. In principle, the government would not want the yearly limit to affect the build out of or investment in unabated gas, or their contributions to security of supply once operational.

The purpose of the two limits together would be to move the CM towards closer alignment with our goal of a fully decarbonised electricity system by incentivising unabated gas plants to either abate by 2035 or operate a limited peaking profile beyond 2035.

The government propose that these new emission limits would apply from 1 October 2034 to all new and refurbishing plants which are awarded multi-year agreements after the relevant amendments implementing the revised emission limits come into force. They would not apply to multi-year agreements awarded before any relevant rule changes come into force, even if their term extends beyond 2035.

For example, if the new emission limits were to be implemented before prequalification opens in July 2023: If an unabated gas plant is given a 15-year agreement in the 2024 T-4 (for

[5] https://www.gov.uk/government/consultations/carbon-capture-usage-and-storage-ccus-dispatchable-power-agreement-business-model

Delivery Year 27/28) then this agreement would be active until 2041/42. The current emissions limits would apply until 2033/34 (first 7 years of the agreement) and then the new emission limits would apply for the last 8 years of the agreement.

Existing capacity will not be affected under these proposals, as they are primarily aimed at ensuring new build non-peaking fossil fuel generation is not locked in past 2034 through long term CM agreements. Updating emission limits for new builds is a priority to enable consistency with our decarbonisation pathways due to new builds having an up to 19-year lead time via T-4 auctions. Existing capacity has an up to 5-year lead time via T-4 auctions and therefore does not currently pose the same risk of policy misalignment with the commitment to decarbonise the power sector by 2035. The Government will consider the role of emission limits for existing capacity through REMA.

Implementation of this proposal will be subject to detailed analysis of any impact to security of supply from the late 2020s.

Question 8

Do you agree with our proposal to introduce lower emissions limits for new and Refurbishing CMUs from 2035?

3.2.3 Proposal – changes to the emissions limits regime to support the new intensity limit from 2035

Enabling the effective implementation of the above proposal requires several amendments to the CM emission limits regime.

Firstly, the current rules on emission limits state that new builds must meet intensity limits to be eligible for a CM agreement, therefore a new build, unlike an existing plant, cannot rely on meeting yearly limits only. This is reflected in the Fossil Fuel Emissions Commitment (Exhibit ZB) submitted at prequalification and the Fossil Fuel Emissions Declaration (FFED) (Exhibit ZA). This approach is linked to the current intensity limit of 550gCO2/kWh which effectively excludes the most pollutant forms of fossil fuel generation (e.g. diesel and coal), whilst still enabling unabated gas to secure CM agreements. Security of supply is maintained via existing CMUs being able to run peaking profiles through adherence to yearly limits, whilst the requirement for new builds and refurbishing capacity to meet the intensity limits facilitates the GB electricity system's gradual movement towards less pollutant forms of generation. As the government is proposing to lower the emissions intensity limit for new build and refurbishing capacity to below that of unabated gas and considering the uncertainties around the development of the low carbon technologies necessary to maintain security of supply, the government is also proposing to amend the CM rules to enable yearly limits to apply to new builds as well from 1 October 2034. This will maintain security of supply by enabling new CMUs to run peaking profiles past this date.

Related to this, the government proposes to amend the deadline for the FFED for new builds which do not meet the intensity limit but are expecting to meet the yearly limit. Operational data

is required to verify the yearly limit, but currently the deadline for the FFED for new build is the start of the CM agreement, and the long-stop date for Refurbishing CMUs. The government propose the deadline to be aligned with the deadline for CCUS, Combined Heat and Power (CHP) and Mixed Fuel new build plants – all of which also require operational data to determine compliance with the intensity limit. This is 14 months after the start of the capacity agreement.

Secondly, the government need to consider the frequency at which emissions are declared and verified for new builds and refurbishing plants with multi-year agreements. At the moment, one FFED is submitted either at the start of the agreement or (in the case of CCUS/CHP/Mixed fuels) 14 months after the start of the agreement. This FFED then applies for the whole agreement, unless there is a material change to the CMU, in which case it must be resubmitted. Whilst this light-touch approach has been suitable for the current emission limits, additional verification is needed during the agreement for the lowered intensity limit. This is because:

- New build plants (likely to be unabated gas peakers) will have access to the yearly limit, and their operations will vary from year to year;
- CCUS plants will be using the intensity limit and their capture rates may vary from year to year; and
- The lower limits will not come into force until 2034, so the limits for some new builds and refurbishing plants will change partway through their agreements.

The government therefore proposes to introduce from 2034, at the same time as the lower intensity limit comes into force, a requirement for an updated FFED to be submitted annually by all new build and Refurbishing CMUs. The government are aware that this will increase the amount of work for Independent Emissions Verifiers but are confident that there is sufficient lead time for the industry to adjust.

Question 9

Do you agree with our proposed changes to the emission limits regime?

Question 10

Are there any further required changes to the emissions limits regime which have not been identified?

3.2.4 Transitional pathways

The government is cognisant that transitional technologies, such as direct hydrogen blending into electricity generation technologies or unabated gas which later retrofits to CCUS, may play a role in the journey towards a net-zero power system. The government is interested to understand whether there could be any impacts on the deployment of transitional technologies resulting from our proposal. In particular, whether there is any risk that the proposal could

hamper investment in transitional technologies, and therefore potentially be counter-productive to our aims.

Pure hydrogen which is produced at or transported through dedicated infrastructure to generation sites and blended in low to medium volumes with natural gas for power generation could provide opportunities for early adoption of hydrogen generation and provide a reliable offtaker for hydrogen producers. This could be especially valuable where generation is running mid-merit to baseload and can therefore support inflexible hydrogen production. Government recognises, however, that at lower blends of hydrogen, the corresponding reduction in CO2 emissions from blended generation is relatively low.

Blended generation could provide a 'stepping stone' for supporting the expansion of the hydrogen economy. The government needs to balance this potential with our wider decarbonisation commitments, and therefore are keen to better understand the pipeline of blended generation projects to assess the impact this proposal could have on investment and deployment.

Question 11

Do you have any views or evidence on the impact that the emissions limit proposal may have on investment in transitional pathways, such as hydrogen blending or CCUS retrofit?

3.3 Call for evidence on barriers to the decarbonisation of existing Capacity Market Units

3.3.1 Context

To meet the Government's Sixth Carbon Budget (CB6) and 2035 commitments, there is a need to accelerate the decarbonisation of the power system, which will be facilitated both by bringing forward new build low carbon capacity and the conversion of existing high carbon plants.

Government is committed to creating pathways to ensure unabated plants can more easily decarbonise as the enabling low carbon infrastructure for hydrogen and CCUS expands. Later this year we expect to bring forward proposals for updated Decarbonisation Readiness requirements which are likely to cover how new build and substantially refurbishing combustion power plants are built such that they can easily decarbonise within the plant's lifetime. To compliment these proposals, the government are also actively exploring pathways within existing markets such as the CM to provide developers with a clear pathway for combustion plants to decarbonise and minimise the risk of them becoming stranded assets.

3.3.2 Barriers to decarbonising existing Capacity Market Units

In response to questions in the 2021 CfE on agreement lengths for carbon intensive capacity, Capacity Providers with carbon intensive CMUs already under long multi-year CM agreements

expressed concern that at present there is no route to enable them to decarbonise their CMUs should they wish to once decarbonisation options are available. This is because these Capacity Providers remain locked into their current CM obligations, which may last into the 2040s, and so would be unable to seek fresh investment support from another mechanism or from the CM to support the decarbonisation of their CMUs.

The conversion from carbon intensive to low carbon generation is Capex-intensive and, depending on the technology, may require additional Operating Expenditure (Opex) support in the short to medium term. Power CCUS and Hydrogen may have higher short run marginal costs through CO2 capture and storage costs, or potentially more expensive fuel costs for Hydrogen relative to natural gas. Accessing a government support scheme such as the DPA or securing a refurbishing CM agreement as low carbon capacity could provide the required Capex support. However, where CMUs have existing multi-year agreements, they would not at present be able to leave their CM agreements to access another support scheme, or to rebid into the CM as a low carbon refurbishing plant. Nor could Capacity Providers risk their CMUs being on outage for long periods for refurbishment, as this which could cause them to miss CM milestones and/or incur non-delivery penalties.

The CM's objective is to provide security of supply and the mechanism offers agreements of up to 15 years to CMUs which meet the relevant Capex thresholds to facilitate investment in new build capacity. To ensure security of supply, CMUs can currently only leave their agreements without being terminated in very particular circumstances, such as the route set out in the Regulations for CMUs to be withdrawn from the CM in order to be eligible to bid into a Contracts for Difference (CfD) Allocation Round (see section 4.4 below).

The only route available to the majority of Capacity Providers to exit their CM agreement early is to secondary trade their obligations. However, trading a large volume of capacity would be challenging in the current secondary trading market due to the lack of acceptable transferees able to take on a sizeable Capacity Obligation. Hence, it may be necessary for government to create a pathway to minimise the volumes of carbon intensive capacity being locked into the CM beyond our 2035 commitment to decarbonise the electricity system, subject to security of supply. The government are therefore seeking evidence on the barriers Capacity Providers with long multi-year agreements may face in attempting to decarbonise their CMUs, and on options for removing those barriers where possible. This could include the creation of managed exits routes (see section 3.3.3 below) which enable CMUs to be withdrawn from the CM for decarbonisation purposes, subject to security of supply.

Moreover, it is also necessary to consider the challenge of ensuring ongoing security of supply as decarbonisation options become available to existing plants which regularly take 1-year agreements, as these CMUs comprise the majority of carbon intensive capacity in the CM. In order to decarbonise, existing plants would require an outage period relative to the plant's size and the chosen decarbonisation technology. For example, it is anticipated that power CCUS conversion is more complex and so would take longer than retrofitting to Hydrogen generation equipment. The outage period would require CMUs to go offline during a CM delivery year, and the cost of refurbishment may require Capacity Providers to leave the CM and bid into

alternative support mechanisms, or to bid back into the CM as Refurbishing CMUs with T-4 agreements.

In cases where a CMU leaves the CM to bid into a separate support scheme, or bids back into the CM for a T-4 agreement, this could lead to an overall reduction in the CM's capacity pool either temporarily while the plant converts, or permanently if the plant joins a support scheme which does not allow CM participation e.g. CCUS DPA. To ensure continued security of supply, this capacity would need to be replaced. The government is therefore also seeking evidence on Capacity Providers' plans to decarbonise their CMUs once viable pathways such as the DPA are available, particularly where this involves exiting the CM.

Question 12

If you have an unabated gas CMU in the CM, what are your plans for this capacity as the power sector decarbonises? Do you intend to decarbonise your CMU once viable pathways such as the DPA are available?

Question 13

From the perspective of a Capacity Provider, are there any additional barriers to decarbonisation than those mentioned above? Would it be necessary to terminate your CM agreement in order to decarbonise your CMU?

Question 14

How long would it take to retrofit your plant(s) to either CCUS or Hydrogen and when would it be feasible for your plant(s) to come offline to do so? Please provide a breakdown of this where possible.

3.3.3 Implementing a decarbonisation route for Capacity Market Units

If managed decarbonisation routes are a viable and desirable option in the CM, a range of considerations need to be taken into account ahead of implementation to ensure decisions are justified and support our rationale for intervention. These considerations include ensuring the pathway to decarbonisation is effective in that it enables us to meet our decarbonisation targets and allows plants to successfully decarbonise, and that costs and burdens to participants are limited where possible.

Firstly, there will need to be assurance that CMUs intending to use a managed exit route can demonstrate a viable decarbonisation pathway to minimise the gaming risks of terminating their agreement without decarbonising. A potential assurance could be only allowing a CMU to leave its CM agreement to decarbonise if the CMU would meet a decarbonisation definition once the retrofit is complete. The government are seeking evidence on an appropriate way to define decarbonisation in this context. For example, it could be as: '*a complete or near complete CO2 emissions reduction from a power plant, relative to that plant being unabated, meaning either the conversion and continued operation of 100% hydrogen-firing generation or*

the installation and continued operation of a minimum 90% capture rate CCUS technology of facility CO2 emissions.' This ensures a plant would be considered decarbonised under managed exits through the CM. However, as set out in section 3.2.2, this contrasts the DPA where if capture performance drops below 70% for three consecutive billing periods, the Generator is required to undertake remedial work. It is also important that the evidence required to allow a CMU to terminate their agreement and necessary enforcement is taken into consideration.

Secondly, solutions to a range of implementation challenges would need to be considered. For example, secondary trading could enable CMUs requiring shorter outage periods for decarbonisation (i.e. less than a year), to decarbonise in the course of an existing CM agreement by trading the relevant period of their obligation. However, as noted in section 3.3.2, the government are aware that secondary trading in the CM has the potential to be improved and may not facilitate the trading of any significant volumes of capacity. The government are interested in understanding whether Capacity Providers view secondary trading as a viable option for decarbonising their CMUs during the course of an existing agreement, particularly if changes were made to improve secondary trading in the CM.

If Capacity Providers do withdraw CMUs from the CM in order to decarbonise them it will be necessary to take action to ensure continued security of supply by replacing that 'lost' capacity in the CM. One option could be reactively procuring replacement capacity through the T-4 auctions. A plant would signal to the ESO its intention to come offline and the timing and likely duration of the outage. This information would then inform the target-setting process for the relevant T-4 auction to ensure sufficient replacement capacity volumes were targeted for that period. In some cases, this option could ensure alignment between capacity coming offline and replacement capacity being available. Over time, this approach may require less capacity to be reactively procured as the decarbonised CMUs coming back online would be added to the replacement capacity procured, creating a net increase in capacity volumes in the CM.

However, procuring the replacement capacity each time a Capacity Provider announces their intent to decarbonise would likely be impractical, as the lead times of the T-4 auction would likely mean a plant would be required to give 4-5 years notice for this route to work. For capacity to be replaced under the T-1 auction, a notice period of around 2 years would be required, but the government would need to be confident of there being sufficient liquidity in the T-1 to ensure replacement capacity could be secured. The government welcome views on whether reactive procurement could be a viable route for allowing CMUs to leave their existing agreements, and for managing the exit of existing plant on one-year agreements.

Another option could be over-procurement, which would involve pre-emptively procuring additional capacity through the earliest possible T-4 auction in advance of CMUs indicating their intent to withdraw from the CM in order to decarbonise. This would create a buffer of capacity that would provide a level of cover were plants to start to leave the CM. The buffer would be maintained at levels deemed necessary to enable decarbonisation by and after 2035, in addition to managing security of supply. The buffer would likely be replenished over time as the decarbonised capacity comes back online, which would potentially enable future general procurement targets to be smaller.

This option would provide certainty of how much capacity could be offline at a given time as the additional capacity would be procured in advance and removes the challenge of needing to decarbonise in under a year under secondary trading. It could also reduce decarbonisation timelines for CMUs as they would have to give less notice to the Delivery Body of their intentions. However, careful consideration would be needed in order to set a target which ensures enough incentive to enable decarbonisation whilst providing value for money. Furthermore, a process would need to be developed to ensure the System Operator can manage the buffer and the volumes of capacity coming in and out of the CM to decarbonise. It would also impose a cost to consumers. The government expect this option could be used in addition to secondary trading as a route to decarbonisation, but the government is interested to hear stakeholders' views on the potential benefits and challenges of an over procurement option to managing exits from the CM.

Question 15

Do you have any comments on our suggestions of how CMUs could decarbonise or suggestions of your own? If so, please provide details of this.

Question 16

Could secondary trading provide a pathway to the decarbonisation of an existing CMU? Please provide an explanation to your answer.

Question 17

Could reactively procuring capacity provide a pathway for CMUs to decarbonise whilst ensuring security of supply? Please provide an explanation for your answer.

Question 18

Could over-procurement of replacement capacity via the CM enable CMUs to decarbonise whilst ensuring security of supply? Please provide an explanation to your answer.

3.4 Multi-year Agreements for Low Carbon, Low Capex Technologies

3.4.1 Context

The Government recognises that for low carbon technologies, such as DSR, the post-2034/35 Delivery Year emissions intensity limit discussed in section 3.2.2 of this consultation does not represent a barrier for these technologies to participate in the CM. Instead, for low carbon capacity with lower Capex costs, the requirement to satisfy Capex thresholds in order to secure multi-year agreements disincentives participation, as these CMUs can only access 1-year agreements, which provide only limited revenue certainty.

Section 2.3.3.1 of the CfE considered whether DSR CMUs should be eligible for multi-year agreements where they achieve the new lower emissions limit discussed in section 2.3.2.1 but would not be able to meet similar Capex thresholds to other low carbon new build. The CfE explored how this could enable low carbon DSR to access multi-year agreements of an appropriate length without meeting the same Capex thresholds as other low carbon new build capacity.

Feedback to the CfE was varied, with supportive responses tending to emphasise their view that DSR has a significant role to play in future security of supply, and that this change would also remove a perceived bias towards high Capex technologies. Although one response argued that such changes would detract from the CM's technology neutrality.

The government has considered this feedback and amended proposals to include all low-carbon, low capex technologies. Whilst the government expects low carbon DSR CMUs would be the most prevalent of these technologies to access longer contracts to begin with, this approach ensures that other low carbon technologies, existing or emerging, can access the proposed agreements if suitable.

Feedback from those who opposed this change highlighted their view that enabling low carbon DSR to access multi-year agreements could lock consumers into higher costs for longer than necessary, particularly if this degree of revenue support is not genuinely required. Responses also cautioned that the sources of DSR being aggregated may not be very firm, and that government should consider the impact on security of supply.

3.4.2 Proposal

The government has considered this feedback and proposes that offering 3-year agreements with no capex thresholds to low carbon CMUs that satisfy the post-2034/35 Delivery Year emissions intensity limit proposed in section 3.2.2. This would address participation barriers for low carbon capacity, whilst limiting consumer exposure to price, competition and volume risks. At the same time reserving the longest agreements for high-capex technologies that still need to be competitive in CM auctions to support future security of electricity supply. Longer multi-year agreements would still be available to those low carbon CMUs that can satisfy the relevant Capex thresholds. It will therefore be for market participants that meet the low carbon intensity limit to choose which agreement suits their project and investment case.

The government proposes that, in line with existing arrangements for multi-year agreements, only new-build and Unproven DSR (as defined in Regulation 5 of the Regulations) CMUs would be eligible for low-capex 3-year agreements. This is because multi-year agreements are designed to stimulate investment in new capacity. Turn down DSR CMUs may reduce demand by switching to generation behind the meter using a carbon fuel source, such as behind the meter diesel generation. This type of capacity will not meet the lowered intensity limit and it also will not be permitted to access the yearly emissions limit in Section 3.2.2. However, it will still be able to access 1-year agreements through both the T-1 and T-4 auctions.

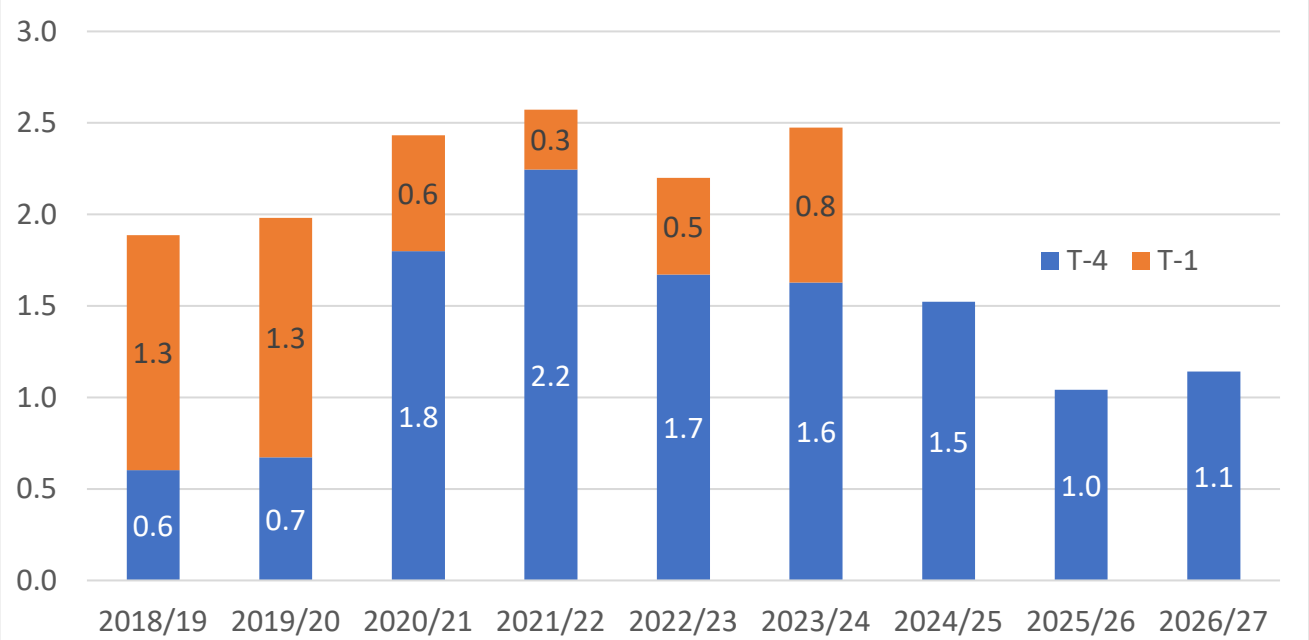
Across the electricity system, there is a need to significantly increase the deployment of low carbon flexibility to maintain security of supply, integrate renewables and meet our

decarbonisation goals at lowest cost. The 2021 Smart Systems and Flexibility Plan[6] therefore set out a range of actions to remove barriers and reform markets for flexibility. This included considering how the CM needs to adapt to better align with our net zero ambitions.

The government believes introducing 3-year agreements provides greater revenue certainty and is likely to incentivise further low-carbon participation in the CM. This improves market liquidity and achieves a greater diversity of technologies, which strengthens security of electricity supply by limiting the CM's exposure to issues impacting security of supply, such as gas supplies or high electricity wholesale prices. In addition, taking action to remove participation barriers for low-capex generation helps to address the perceived bias towards high-capex technologies and facilitates CM access for the full range of technologies that can support security of supply.

The Government has heard from stakeholders that the large non-domestic DSR market has been contracting over recent years due to several barriers within markets and a number of key changes to its available revenue streams. This finding is further supported by the CM's five-year review, which noted that DSR would benefit from access to longer term capacity agreements to help with planning and covering costs such as set-up and maintenance costs for metering and communications equipment. Furthermore, the total de-rated DSR capacity entering the auctions has been stagnating for the last few delivery years, with a clear downward trend in T-4 auction participation, as shown in **Figure 1** below.

Figure 1: Total de-rated DSR capacity entering Capacity Market auctions by delivery year (GW)



No T-1 auction has been announced beyond Delivery Year 2023/24.

[6] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1003778/smart-systems-and-flexibility-plan-2021.pdf

From extensive stakeholder engagement, the government understands that access to multi-year revenue streams within the CM would allow aggregators to better manage their risk profile and offer more competitive propositions to sites, thereby supporting a nascent market and bringing forward additional low-carbon capacity. Stakeholder feedback has suggested that longer revenue certainty would help overcome the initial engagement hurdle faced by these technologies.

Question 19

Do you agree with the proposal to introduce 3-year agreements for low carbon, low capex CMUs? If not, do you have any suggestions for an alternative approach?

Question 20

Are there any potential consequences or risks that you think the government should further consider?

Question 21

Specifically, which low carbon technologies do you expect might benefit from a 3-year agreement with no capex threshold?

3.4.3 Demand Side Response Testing and Emissions Verification

The rules currently state an Unproven DSR CMU which is awarded an agreement exceeding 1-year must take one DSR Test within the required timeframes, regardless of component reallocation. In section 2.1.6.3 of the 2020 CM Consultation, the Government sought views on implementing a repeat DSR Test at the end of each Delivery Year in which component reallocation has been carried out. The government intends to continue with the position not to introduce this requirement, as SPDs and secondary trading still provide sufficient assurance and options to DSR CMUs (as set out in Section A.2.5.2.1 of the Government Response).

Additionally, Unproven DSR currently seeking to prequalify need to provide a Fossil Fuel Emissions Commitment (Exhibit ZB) to the Delivery Body with an application at Prequalification. If the CMU is then successful in securing a capacity agreement and the CMU includes a Fossil Fuel Component, it will need to submit a Fossil Fuel Emissions Declaration (Exhibit ZA) within the required timeframes. Each individual Generating Unit which is a relevant Fossil Fuel Component is subject to the carbon emissions limits, including where different components are aggregated to form one CMU such as a DSR aggregator. The Government proposes to maintain a similar process whereby an Unproven DSR CMU with a low carbon intensity would provide Exhibit ZB to the Delivery Body declaring the CMU will meet the new lowered intensity emissions limit (as proposed in section 3.2.2). If successful in securing a multi-year agreement, the CMU must provide the Exhibit ZA at a future deadline demonstrating it meets the lowered intensity limit. If the CMU is unable to demonstrate the lowered emissions limit is met, then the CMU can enter a 1-year agreement or terminate. The government welcomes views on whether the low carbon intensity limit should take a similar approach to the

current emissions reporting regime where each individual component is subject to the emissions limit rather than the overall CMU.

3.5 Capital Expenditure Thresholds

3.5.1 Context

Section 2.3.3 of the CfE sought views on the continued use of Capex thresholds to determine eligibility for multi-year agreements. The rationale for the current approach is that projects with a high level of Capex might struggle to access finance without the benefit of a reliable long-term revenue stream from a multi-year CM Agreement.

The thresholds were set in 2013 at £250/kW for a 15-year agreement and £125/kW for a 3-year agreement but are linked to inflation and so have risen to £280/kW and £140/kW respectively. These thresholds are based on the following reference cost levels:

- 15-year agreement: the new build costs of an Open Cycle Gas Turbine; and
- 3-year agreement: the costs of fitting Selective Catalytic Reduction (a nitrogen oxide abatement technique) to a coal plant.

The reference cost levels for the thresholds have not been revised since the CM's inception, but the changing technology mix of the CM and developments in the power sector more broadly indicate the need for these to be reviewed.

Responses to the CfE indicated broad support for the continued use of Capex thresholds in determining eligibility for multi-year CM agreements (see section 3.4 above for alternative views), and for revising the reference cost levels underpinning these thresholds. The government is minded to retain the use of Capex thresholds in the CM, but to revise the reference cost levels underpinning the 3- and 15-year thresholds as set out below, and to consider the introduction of a new 9-year threshold targeted at low carbon refurbishments to better enable power sector decarbonisation.

3.5.2 Proposed revisions to the reference cost levels underpinning the 3- and 15-year thresholds, and considerations regarding the introduction of a 9-year threshold

The government considers that the 3-year refurbishment threshold may have an important role to play in supporting the transition to net zero by enabling existing carbon intensive CMUs to extend their lifetimes to provide continued security of supply as the power sector decarbonises. The 3-year threshold is likely to be of particular relevance to unabated gas generation, including OCGTs and CCGTs. To ensure the 3-year refurbishing threshold is accessible to OCGTs and CCGTs, the government is minded to set the reference cost level underpinning the 3-year threshold at a third of the Capex costs of a new-build OCGT, and therefore

proposes a Capex threshold of £135/kW[7] (in the CM year 2021/22). This reflects the fact that the largest source of Capex costs for a refurbishing unabated gas plant is the replacement of the gas turbine, which the government have assumed accounts for roughly one third of the total Capex costs of a new build OCGT. However, the government welcomes stakeholder views on this assumption.

The CM's 15-year new build threshold is also likely to continue to play an important role in supporting investment in new build capacity, which the government expect will include increasing amounts of low carbon capacity as the power sector decarbonises. For this reason, the government has considered a number of technologies whose Capex costs could act as the reference cost level for the 15-year threshold going forward, including a range of low carbon flexible technologies. The government has considered technologies including hydrogen and CCUS conversion of existing unabated gas generators, new build batteries and new build pumped storage hydropower plants, with Capex costs ranging from £280/kW to over £1,000/kW[8]. The government is aware that low-carbon technologies have been eligible for 15-year agreements at the current Capex threshold, and do not wish to create barriers to such low-carbon technologies being eligible for long multi-year agreements by increasing the threshold. The government is therefore minded to keep the 15-year threshold at £280/kW to ensure that a wide range of low carbon technologies can continue to benefit from eligibility for long multi-year agreements to better support their investment case. The government welcomes stakeholder views on this approach.

The government is also seeking views on the introduction of a new mid-point 9-year Capex threshold. This threshold would account for projects whose Capex costs are significantly above the 3-year threshold, but which do not meet the 15-year threshold. In particular, the government is concerned that although the investment case for some low carbon refurbishing projects (including the refurbishment of existing low carbon CMUs and the decarbonisation of existing carbon intensive CMUs) would benefit from the increased revenue certainty provided by a longer multi-year agreement, the large range of Capex costs for such projects means that some projects may not meet the 15-year threshold and would therefore only be eligible for a 3-year agreement. As noted in the introduction to chapter 3 of this consultation the government is keen to remove barriers to participation and competition for low carbon capacity in the CM where possible. The introduction of a 9-year Capex threshold would enable low carbon projects with a range of Capex costs higher than the 3-year threshold to be eligible for longer multi-year agreements, while ensuring that the longest multi-year agreements of 15 years continue to be reserved for projects with the most significant Capex costs. The government welcomes views on this proposal and evidence of any low carbon projects which may benefit from a Capex threshold set at the mid-point between the existing 3- and 15-year thresholds.

If this new threshold is introduced, the government is minded to set the reference cost level underpinning the 9-year threshold at the average of the figures used for the reference cost levels for the existing 3-year and 15-year Capex thresholds, resulting in a Capex threshold of

[7] The BEIS Electricity Generation Costs (2020) (https://www.gov.uk/government/publications/beis-electricity-generation-costs-2020) report was used to for the OCGT Capex costs, adjusted for inflation.
[8] Based on the BEIS Electricity Generation Costs (2020) report and market intelligence.

£205/kW (based on CM Delivery Year 2021/22). However, the government welcomes stakeholder views on this level of threshold. Projects which meet the 9-year Capex threshold would also be required to meet the post-2034 emissions intensity limit proposed in section 3.2.2 of this consultation in order to be eligible for an agreement of up to 9 years.

Question 22

Do you agree with the proposed changes to the reference cost levels underpinning the CM's 3-year and 15-year Capex Thresholds?

Question 23

Do you have any concerns about the assumptions made regarding the calculation of the revised reference cost levels?

Question 24

Do you foresee any unintended consequences which could result from making this change to the approach for the 3-year and the 15-year Capex Thresholds? Conversely, do you foresee any unintended consequences which could result from not making substantial changes to the level of the 3-year and the 15-year Capex Thresholds?

Question 25

Do you agree with the proposed introduction of a 9-year Capex Threshold for low carbon CMUs? Do you foresee any unintended consequences?

Question 26

Do you agree with the proposed reference cost level underpinning the new 9-year Capex Threshold for low-carbon CMUs? If not, do you have further evidence on alternative reference cost levels?

3.5.3 Total Project Spend

Section 2.3.3 of the CfE considered changes to the definition of Total Project Spend in the CM. Under the current Rules, the Capex for new build CMUs in effect must be spent within a 77-month window in order to count towards the Capex thresholds. This window was defined to ensure that new build CMUs in the first round of CM auctions could capture their full Capex costs. The CfE considered whether the permitted period for Capex in respect of new build and Refurbishing CMUs should be harmonised such that the window for Capex would run from auction results day until the start of the first Delivery Year for both new build and Refurbishing CMUs. In general, feedback to the CfE welcomed a review of the 77-month window, but also indicated a strong preference to extend the existing permitted 77-month Capex period for new build CMUs to Refurbishing CMUs.

The government has considered this feedback in light of the potential for complex and capex-intensive refurbishments in the CM should Capacity Providers take action to decarbonise their CMUs in the coming decade as alternative low carbon fuels become available. The government is therefore minded to amend the definition of Total Project Spend in the Rules such that the window for Capex for Refurbishing CMUs is aligned with that of new build CMUs to cover a period of 77 months prior to the commencement of the first Delivery Year. The government is not minded to include Interconnector CMUs in this change as they are not eligible for more than 1-year contracts.

Question 27

Do you agree with the proposed changes to the definition of Total Project Spend to extend the scope of the existing permitted period for Capex in respect of new build CMUs (i.e. in effect a 77-month period prior to the commencement of their first Delivery Year) to include Refurbishing CMUs? Do you foresee any unintended consequences which could arise from this change?

3.6 Projects with long build times

Section 2.4 of the CM CfE (2021) considered whether new build Generating CMUs, that suitably evidence that they need more time for construction than the start of the Delivery Year of the T-4 auction, should be afforded the ability to declare in their prequalification application for a T-4 auction a later first Delivery Year (a ‘declared later Delivery Year’).

The proposal would benefit projects which may require longer build times than are provided for under the current design (including, but not limited to, pumped storage hydropower projects). Supportive responses to the CfE tended to support the view that long duration electricity storage may have a significant role to play in the future electricity system and can support the delivery of net zero targets.

The potential for interactions between CM design changes and wider changes to support long duration electricity storage was also a common theme in responses which (although supportive in principle) expressed reservations about the approach considered in section 2.4 of the CFE.

For example, five responses gave the view that CMUs which take up the option of a declared later Delivery Year should not be able to access any Cap and Floor mechanism, and vice versa, in order to avoid the risk of government over-subsidising some technologies and distorting competition in the CM.

The government response on facilitating the deployment of large-scale and long-duration energy storage confirms that the government will ensure the deployment of sufficient large-scale, long-duration electricity storage (LLES) to balance the overall system by developing

appropriate policy to enable investment by 2024.[9] Most respondents to the LLES CfE identified a Cap and Floor type mechanism as the most suitable for LLES. The government recognises that a Cap and Floor mechanism may be suitable in principle, but detailed design work is needed to assess the benefits and interactions of such a scheme with the energy system.

As stated in the CfE, the government anticipate that very few new build CMUs would seek to take advantage of a declared later Delivery Year, as it would be limited to those technologies and projects that can sufficiently evidence that there are no examples of comparable projects coming to market in a future 4-year period.

The government has considered this feedback and analysed the security of supply and affordability implications for the CM.

Since the CfE was published, the government have further considered how a declared later delivery year could be introduced within the current CM. Following consideration, the government has identified significant implementation and operational issues which would add additional complexity to all aspects of the CM's operational processes. In addition, the government has considered that a declared later Delivery Year could introduce additional risks to procuring target capacity, by increasing the amount of capacity that needs to be purchased through the T-1, if capacity procured through a declared Delivery Year fails to deliver.

As such, the government will not currently progress this proposal for introduction in 2023 but will instead consider feedback and operational challenges further. In addition, the government will ensure that responses are considered alongside those received in response to the Review of Electricity Market Arrangements (REMA) consultation, Chapter 8 of which addressed Capacity Adequacy.[10]

Question 28

The government remains open to considering proposals to address challenges faced by projects with long build times. Please provide further evidence or proposals that you feel would address such challenges.

[9]https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1096002/large-scale-long-duration-electricity-storage-govt-response.pdf
[10] https://www.gov.uk/government/consultations/review-of-electricity-market-arrangements

4. Additional improvements to the Capacity Market

4.1 Introduction

The government has continued to keep the CM's design under review, including through regular engagement with industry stakeholders and delivery partners, with a view to making clarifications to the CM's Regulations and Rules where necessary, and to improving and simplifying the CM's design wherever possible. This approach has resulted in the proposals set out below, which include clarifying the CM's auction clearing mechanics and removing administrative burdens in the auction cycle, amending the transfer route between the CM and CfD scheme as set out in the CM Regulations. This is to ensure it can be used in practice, removing some cost and administrative burdens for prospective CMUs related to construction progress reporting, and taking a phased approach to the implementation of emissions verification to ensure the new process runs smoothly.

4.2 Clarifying auction clearing mechanics

4.2.1 Context

As part of the CM auction clearing process, Rule 5.9.7 describes how to determine which participants in an auction are awarded capacity agreements. While Rule 5.9.7 describes which bidders must be awarded capacity agreements following the clearing of an auction, it does not clearly detail the scheme for awarding agreements in scenarios where the capacity supplied at the start of an auction is less than the capacity demanded and so the clearing capacity is not explicitly exceeded. This could occur due to the way in which the auction parameters have been set or if eligible capacity opts to withdraw from the auction after the parameters for the auction have been announced. For example, this was observed in the T-1 auction (for delivery year 2022/23) held in February 2022, where the target capacity of the auction exceeded the total amount of capacity entered into the auction and all bidding capacity was awarded an agreement.

The primary function of the CM auctions is to procure capacity to ensure that the security of electricity supply standards are met.[11] In scenarios where auction parameters have been set, in line with the security of supply responsibilities required of Secretary of State (SoS),[12] and the clearing capacity is not exceeded the intention is that all eligible bidding capacity should be awarded agreements. The government acknowledges that the current drafting of Rule 5.9.7 may unintentionally introduce ambiguity into the mechanics of how an auction clears. The government believe that there is scope to improve the clarity of Rule 5.9.7.

[11] The Reliability Standard of 3 hours loss of load expectation (LOLE).
[12] Under the Electricity Act 1989, the Energy Act 2013 and the Electricity Capacity Regulations 2014.

4.2.2 Proposal to clarify auction clearing mechanics

To provide additional clarity regarding policy intent, the government proposes making a minor amendment to Rule 5.9.7. This amendment will clarify that in scenarios where auction parameters have been set with the intention of procuring capacity to meet security of supply requirements, but the amount of capacity required for an auction to clear cannot be exceeded due to demand being higher than supply, then each eligible bidding CMU should be awarded an agreement.

Question 29

Do you agree with the proposed clarification to Rule 5.9.7? Does the proposed clarification have any unintended consequences?

4.3 Requirements on the Secretary of State in determining whether capacity auctions need to be held

4.3.1 Context

As part of the CM auction clearing process, Regulation 10 describes how, every year, the SoS must determine whether a capacity auction is to be held for the following Delivery Year. Regulation 10(5) states that the SoS must publish their intention to hold these auctions on an annual basis, following receipt of advice from the Delivery Body on the volume of capacity required. The CM is now well-established and the SoS has confirmed their intent to hold CM auctions every year since their inception. This being the case, it is now more appropriate for the SoS to notify the market when they do **not** intend to hold an auction.

4.3.2 Proposal to amend the publication requirements on the decision of Secretary of State to hold a Capacity Market auction

The proposed amendment is to amend the publication requirements such that the SoS is required only to publish a decision **not** to hold an auction, rather than publish their decisions to hold auctions annually. This amendment streamlines the CM auction process by removing administrative burdens on the SoS.

Question 30

Do you agree with the proposed amendment? Does the proposed amendment have any unintended consequences?

4.4 Changes to the Capacity Market/Contracts for Difference transfer process

4.4.1 Context

The principles governing eligibility for the CM and the CfD scheme are designed to prevent projects from receiving subsidy from both schemes at the same time. For the CM, this aim is achieved through regulations 15(5) and 16(2) of the Electricity Capacity Regulations 2014, which provide that the Delivery Body must not prequalify a CMU for a CM auction if that CMU is subject to a CfD which applies for any of the delivery period. For the CfD scheme, this is achieved through regulation 14(10) of the CfD (Allocation) Regulations 2014, which excludes projects with a capacity agreement, or with a pending CM application, from participating in a CfD Allocation Round. The government considers these provisions to be an important safeguard against overcompensating projects.

Regulation 34(1) of the Electricity Capacity Regulations 2014 allows Capacity Providers to withdraw voluntarily from the CM with a view to becoming eligible to participate in a CfD Allocation Round, provided their CMUs are of a technology type permitted in the relevant CfD Allocation Round. This withdrawal is made possible in theory by the Delivery Body terminating a CMU where a "CfD Transfer Notice" has been received from the relevant Capacity Provider. CM Rule 6.10.4 sets out that a Capacity Provider may voluntarily terminate their agreement in order to become eligible to participate in a CfD Allocation Round and requires the Capacity Provider to send a CfD Transfer Notice to the Delivery Body no later than 16 months before the commencement of the CMU's delivery period. Regulation 34(3) provides that the "CfD Transfer Notice" itself must state that the CfD Counterparty (the Low Carbon Contracts Company, or LCCC) intends to grant a CfD to the CMU in question for any part of its delivery period.

However, in practice, LCCC can never know in advance that the CMU in question will be successful in a CfD Allocation Round. This means that LCCC cannot provide a Capacity Provider with a the "CFD Transfer Notice" as currently defined in regulation 34(3). The way in which CM Regulations and Rules interact with those of the CfD scheme therefore means that, in practice, eligible Capacity Providers are unable to use the transfer route set out in regulation 34. Following the recent consultation on Allocation Round 6 of the CfD scheme, which outlined some of the interactions between the CM and CfD schemes regarding this transfer route,[13] the government is now proposing amendments to the CM Regulations as set out below.

4.4.2 Proposal to amend the Capacity Market to Contract for Difference transfer process and considerations for the future of this process

The government is minded to take a two-stage approach to addressing the issues with the current transfer process. Firstly, the government proposes to amend the CM Regulations to redefine the term "CfD Transfer Notice". The "CfD Transfer Notice" would be redefined to mean a notice provided by the relevant Capacity Provider to the Delivery Body stating that the Capacity Provider intends to withdraw their CMU from the CM in order to become eligible to bid

[13] https://www.gov.uk/government/consultations/considerations-for-future-contracts-for-difference-cfd-rounds

in a CfD Allocation Round. This notice would be required to state this intent and should be signed by the Director or Directors. The Capacity Provider would be required to submit this notice no later than 16 months before the start of the delivery period, as per Rule 6.10.4. This timeframe enables potential replacement capacity to be sought prior to the commencement of the relevant Delivery Year.

This amendment to the Regulations would enable Capacity Providers to use the transfer process set out in Regulation 34. However, the proposed amendment would involve a Capacity Provider withdrawing from the CM without any certainty of being successful in the relevant CfD Allocation Round. The government considers this to be fair, insofar as the decision to withdraw from an existing Capacity Obligation in order to become eligible to bid in a CfD Allocation Round is a commercial decision for a Capacity Provider.

Secondly, the government is seeking views on whether the transfer route set out in Regulation 34 should be available to CMUs with existing CM agreements only and should not be an option for new CMUs going forward – for example, the CM Regulations could be amended such that the transfer route does not apply to future agreements taken under the CM. The amended transfer route set out above would continue to be available to CMUs with existing agreements.

The government welcome views from stakeholders on whether allowing the transfer route between the CM and CfD schemes delivers benefits in terms of the CM's core objectives (to ensure security of supply at least cost to consumers, and to avoid unintended consequences, including by complementing the wider decarbonisation agenda) and should therefore continue to be available. Before implementing any changes, the government will need to consider the impact on future CfD Allocation Rounds, and the government welcomes stakeholder views on this point in response to the questions below.

Question 31

Do you agree with the proposed change to the CM Regulations to enable Capacity Providers with relevant CMUs to use the CM to CfD transfer route in practice? Do you foresee any unintended consequences of making this change?

Question 32

Do you think that the amended transfer route should continue to be available to new CM agreements in the future, or should it be restricted to existing agreements?

4.5 Requirement for Independent Technical Expert assessments for material changes to construction plans

4.5.1 Context

The government is aware that Capacity Providers have raised concerns about some of the requirements under Rule 12.2 on the monitoring of construction progress of prospective CMUs. Rule 12.2.1 requires Capacity Providers to deliver a progress report to the Delivery Body every

6 months from the 1 June after the Capacity Agreement was awarded until the Substantial Completion Milestone is achieved (or the agreement is terminated, or a Non-completion Notice is issued). Rule 12.2.1(a) states that the progress report must identify the earliest and latest dates on which each Construction Milestone is likely to be achieved and must provide an explanation of any material change to these dates since the previous report. For the purposes of Rule 12.2.1(a) material change occurs when the date for a Construction Milestone is at least 2 months earlier or later than the date stated under Rule 3.7.2(b) (i.e., than the schedule submitted as part of the prequalification application identifying the earliest and latest dates for achieving the Construction Milestones).

Progress reports must be accompanied by a certificate from two directors of the Capacity Provider which must state that they believe the report to give a fair view of the information requested under Rule 12.2.1. In the case of a material alteration, the Capacity Provider must also provide an assessment from an Independent Technical Expert (ITE).

Capacity Providers have raised concerns that it can be very challenging to avoid material alterations, particularly in the form of changes to the earliest and latest dates for Construction Milestones, and that this has resulted in Capacity Providers needing to pay several thousand pounds per CMU for ITE assessments.

4.5.2 Proposed amendments relating to the requirements of Rule 12.2

In 2019, Ofgem sought stakeholder views on reducing the regulatory burden on Capacity Providers by removing the requirement for the progress report and ITE assessment. Stakeholder feedback indicated that the reports continue to be a useful tool and could play a role in target-setting for T-1 auctions. More recently, Capacity Providers have indicated in engagement sessions that removing the requirement for ITE assessment and removing the requirement to provide an explanation if a Construction Date has moved more than two months earlier than the previous report's earliest date would reduce the cost and administrative burden associated with progress reports.

In light of stakeholder feedback, the government is minded to make amendments to implement these two changes. The government considers that sufficient delivery assurance is provided by the certificate signed by two Directors submitted with the progress report, and notes that in cases where the CMU's Substantial Completion Milestone moves to after the relevant Delivery Year has commenced, Rule 12.2.4 is engaged and requires a remedial plan to include an ITE commentary, thereby ensuring that additional delivery assurance measures are in place when a change in Construction Milestone dates impacts the Delivery Year.

Question 33

Do you agree with the proposed amendment? Does the proposed amendment have any unintended consequences?

4.6 Temporary rule amendment for Fossil Fuel Emissions Declaration verification deadlines

4.6.1 Context

Under the CM Emissions Limits framework, all Applicants with Fossil Fuel components are required to provide a FFED that demonstrates compliance as part of their application. Since the introduction of Emissions Limits to the CM in 2019, it has been the government policy intent to introduce independent verification of Applicants declared emissions. This requirement has previously been postponed due to timeframes needed to carry out the accreditation process of the Independent Emission Verifiers (IEVs). As things currently stand, IEV checks will be required for all FFEDs from the 2023 Prequalification Window onwards, in line with Rule 3.15.1. As set out in Rule 4.4.2 (j), if an applicant is required to provide a FFED under Rule 3.6.5 or Rule 3.9.5 but has not done so, the Delivery Body must not Prequalify the CMU.

The UKAS accreditation service has now accredited four organisations as IEVs which can carry out the verification. The contact details of these can be found on the UKAS website below.

https://www.ukas.com/accreditation/about/developing-new-programmes/development-programmes/ecm-verification/.

The government have been made aware of constraints on the availability of IEVs in the two quarters in the run up to prequalification for the 2023 auction opening in July. The government are also conscious that this new process may be unfamiliar to CMU providers. This creates a risk that not all CMUs will be able to have their emissions verified in time for the Prequalification Window 2023, creating potential risks to auction liquidity and security of supply.

4.6.2 Proposed temporary changes to emissions verification for 2023 Prequalification Window

To ensure Capacity Providers are not precluded from prequalification the government proposes to create a phased implementation whereby verification will be required to submit an application to prequalification 2024. This will be delivered via a temporary rule change. The government propose that any verifications completed in 2023 will remain valid for the following year, including complex verifications which would usually need to be verified annually.

This approach will ensure that a Capacity Provider which has already completed, or plans to complete, checks for their 2023 application, will not be required to verify again in 2024, and would therefore not be disadvantaged by this temporary rule change. This proposal would not make changes to the type of verification required. The standard Fossil Fuel Emission Formula will require simple verifications which will remain non time sensitive and can be carried out for either the Prequalification Window 2023 or 2024. This can be found in Part 1.2(a) of Schedule 8 of the Rules.

The government strongly encourage Capacity Providers to continue getting their FFED verified this year to avoid over subscription of the IEVs before the 2024 prequalification window, which could result in emissions not being verified in time and providers failing to prequalify. IEVs have long lead time due to other business commitments, and it is therefore necessary to book verifications ahead of time.

After 2024, it is proposed that the rules will revert to their original format.

Question 34

Do you have any comments or concerns regarding our proposed phased implementation of the requirement for Fossil Fuel Emissions Declarations to be independently verified?

5. Assessment of impacts

5.1 Satisfactory Performance Days

The proposal sets clear pass windows for each of the three SPDs with the intention to improve the visibility of non-delivery risk early during the Delivery Year. SPDs are an important component of monitoring capacity delivery and therefore a key part of how the CM meets its security of supply objective.

At present, it is possible for Capacity Providers to continue to hold a CM agreement without risk of suspension or termination until the end of April, even if they are no longer able to deliver their contracted capacity. This means that there is a lack of clarity on the total available capacity during the winter period, which is a risk to security of supply – for example, the government, the ESO and other organisations use this value to inform some of their contingency planning. Clearly defining the pass windows and moving one window much earlier in the Delivery Year will improve the understanding of the total available capacity and may improve security of supply. In addition, the proposed closer monitoring early in the Delivery Year may encourage Capacity Providers to ensure that they are ready to deliver on their obligations during a System Stress Event from the beginning of the Delivery Year, potentially further improving security of supply.

CM agreement holders aim to demonstrate that they can deliver the capacity they are contracted for at the least cost to themselves. Shortening the time window that they have available to do this may force them to choose times that are sub-optimal from this point of view, for example during negative wholesale pricing periods. This may increase their costs which could lead them to increase their auction bid prices, potentially increasing the overall CM clearing prices. However, the pass window remains relatively wide at a full month with an additional month for an extended pass window with payments suspended. While suspension of payments could have an impact on the revenue stream of Capacity Providers and therefore their financing costs, the government has worked with CM delivery partners to ensure that the timing of the pass windows has a minimal impact on the normal payment timelines for Capacity Providers. The approach proposed will align with payment timelines such that where a CMU fails to meet the SPD in the relevant pass window but is capable of meeting during the extended pass window, there should be minimal impact on the security of their revenue streams. As mentioned in the proposal section 2.2.2, around 90% of de-rated capacity already demonstrated their SPDs by the end of November in Delivery Year 2021/22 even though they would not have been expected to do so until the end of April, therefore this proposal is expected to affect a relatively small proportion of Capacity Providers.

The government will present further detail on the assessment of impact of the final version of this proposal in the government response to this consultation, primarily focusing on further detail on when Capacity Providers have satisfied their SPDs, including a view of different technology types.

5.2 Penalty Regime

The proposal strengthens the penalty regime of the CM by increasing the penalty rate that determines how much a CMU must pay if it does not deliver its contracted capacity. The penalty regime is intended to ensure compliance and therefore it is a key part of how the CM meets its security of supply objective. It is made up of two parts: the penalty cap and the penalty rate – both have a role in ensuring capacity delivery during System Stress Events but stakeholders have emphasised that the penalty cap has a considerably larger impact on financing costs than the penalty rates. The government has therefore opted to focus on penalty rates for now.

The proposed change increases the costs of non-delivery of capacity during System Stress Events and therefore it increases the incentive for Capacity Providers to deliver. In turn, this may lead to providers improving the reliability of their capacity, for example by undertaking more regular maintenance and repairs, or by seeking out secondary trading when on outage. In turn, this may reduce the overall unserved energy in a System Stress Event, benefiting consumers. However, this depends on the frequency and depth of System Stress Events and the ability of providers to improve their reliability. In addition, Capacity Providers that take part in the wholesale market or the Balancing Mechanism are already incentivised to be available during System Stress Events, as the prices in these markets are higher during these events. Over the last three Delivery Years, an average of almost 10% of successful de-rated capacity belonged to embedded Capacity Providers that did not participate in the Balancing Mechanism. The government notes that the Electricity System Operator's Industry Consultation on De-rating Factor Methodology for Embedded Generation Technologies[14] included analysis implying that some embedded technology types have lower availability than what would be expected based on their CM de-rating factors. The analysis was not able to cover System Stress Events and focused on only some technology types, but it implies that further delivery incentivisation may be possible in some cases.

Changes to the penalty regime may change the financial risk a Capacity Provider takes on when receiving a CM agreement, which could have an impact on the cost of obtaining finance, for example on the debt-to-equity ratio. This could increase auction bid prices and in turn may increase the overall clearing price of an auction. However, this will depend on the providers' expectation of there being a System Stress Event and their confidence in being able to deliver, as well as their risk appetite. In addition, the penalty cap will remain the same, so the maximum possible penalty received by any provider will not increase. Respondents to the CfE emphasised an increased financial risk if the penalty cap is increased above 100% of the value of their CM agreement, and therefore the government expects that an increase of the penalty rate alone will have a limited impact on the cost of financing and therefore on the auction bid prices.

14 https://www.emrdeliverybody.com/Capacity%20Markets%20Document%20Library/Industry%20Consultation%20-%20De-rating%20Factor%20Methodology%20for%20Embedded%20Generation%20Technologies%20v1.0.pdf

5.3 Aligning Capacity Market Agreements with decarbonisation commitments

This proposal will move the UK closer to meeting the government's ambition for a fully decarbonised electricity system by 2035, subject to security of supply, by reducing bill payer support for unabated non-peaking fossil fuel plants past this date, as most generation by unabated gas plants come from these technology types. The proposal also recognises that as unabated gas generation remains the only flexible technology to have been deployed at scale in GB to date, it is reasonable to expect it to continue to play a key role in filling any capacity gaps to ensure capacity adequacy whilst low carbon alternatives reach maturity. The government is planning to carry out further research on this role and on the volume of unabated gas generation necessary to de-risk potential gaps in capacity to ensure security of supply during this time.

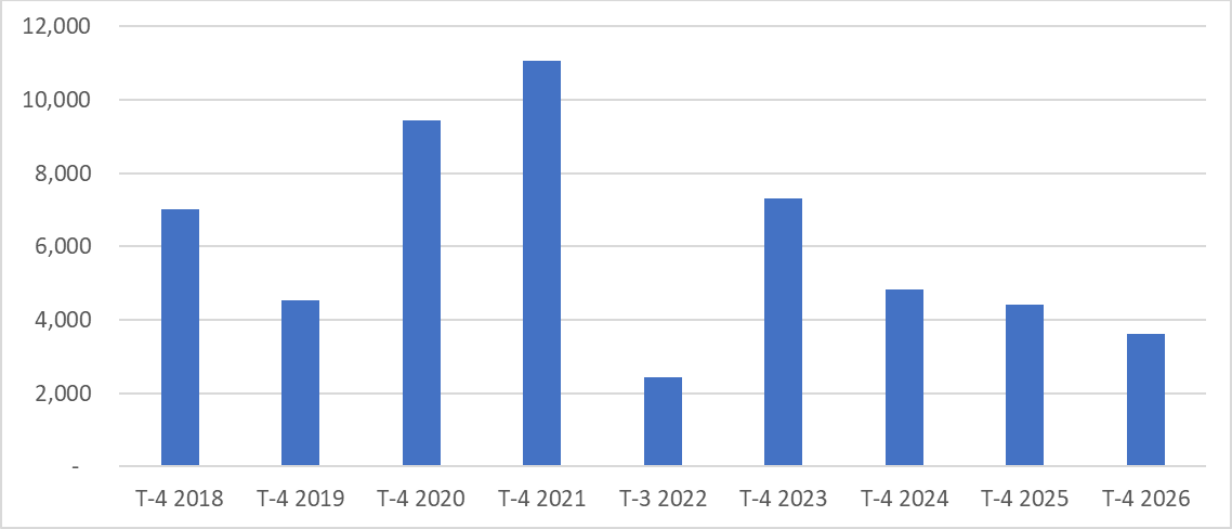
As such it is intended that new build unabated gas peaking plants will not be impacted by the proposal as they will be able to comply with the yearly emissions limit, and that there will be sufficient headroom in this limit to ensure compliance even in exceptional years.

This proposal is intended to increase investor certainty but the government anticipates differential impact on unabated non-peaking and peaking gas plants. In terms of specific outcomes for new build unabated non-peaking gas plants, the government might expect to see the following impacts from our proposal:

- Firstly, a continued decrease in the number of new-build unabated non-peaking gas plants, such as CCGTs, coming through the CM. This may reduce auction liquidity and can increase the total costs of the CM;
- Secondly, a potential increase in unabated non-peaking gas plants bidding for shorter agreements, with a corresponding increase in exit bids;
- Thirdly, an increased incentive for these plants to abate from 2035 through commitments made when bidding for a 15-year contract, with a corresponding increase in exit bids; and
- Fourthly, some plants may bid for 15-year contracts and commit to reducing expected operating hours post 2035 to comply with yearly emissions limits, with a corresponding increase in exit bids.

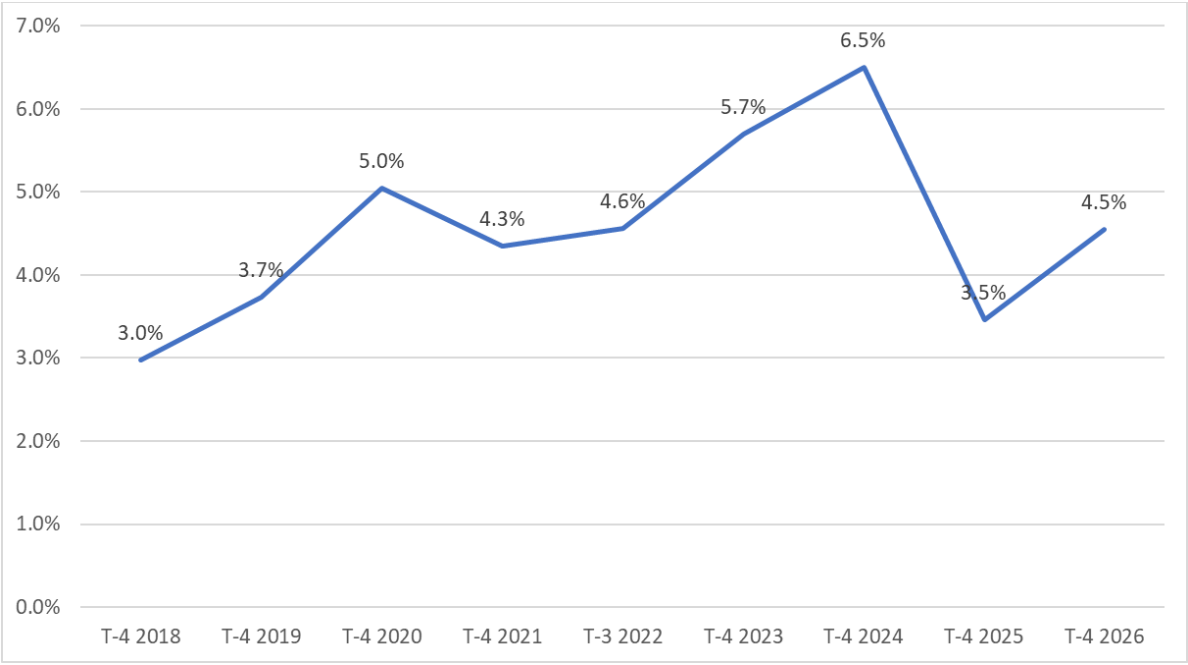
Whilst it is accepted that this proposal could have a greater impact on new build unabated non-peaking gas plants such as CCGTs, it is recognised that since being implemented the CM has had a limited role in bringing forward these plants with only two new build plants ever receiving agreements (Keadby 2 and Carrington, with a total of about 1.6GW of de-rated capacity – most recently in 2020), with the total prequalified capacity steadily decreasing across T-4 auctions (Figure 2). This means that a potential increase in the exit bid of these plants is unlikely to have an impact on the overall costs of the CM.

Figure 2: Total de-rated capacity of prequalified and conditionally prequalified CCGTs across auctions (MW)



At the same time, over 300 new-build OCGTs and engines (almost 6GW de-rated capacity) received agreements but the proportion of de-rated capacity of pre-qualified capacity has been decreasing in the last two T-4 auctions (Figure 3).

Figure 3: Percentage of de-rated capacity of new build OCGTs and reciprocating engines prequalifying and conditionally prequalifying across auctions



This decrease may have been due to policy uncertainty around the role of peaking plants and their decarbonisation pathways. The changes in this proposal, as well as the ongoing work on supporting the creation of the decarbonisation pathways may help a return to the historic average proportions seen in previous auctions, thereby potentially improving auction liquidity and reducing total CM costs. This means that the expected overall impact of this proposal on the total costs of the CM and on security of supply is low.

5.4 Multi-year Agreements for Low Carbon, Low Capex Technologies

The proposal will enable technology types with lower Capex costs to access longer agreements, as long as the technology meets the emissions intensity limit. While other technologies are likely to come forward using the changes in this proposal, a large majority is expected to be DSR.

The government has heard from stakeholders that 1-year agreements are a particular barrier to some technology types such as aggregated DSR units, as the costs of initial engagement with the CM (e.g. administrative and testing costs), are harder to overcome for smaller providers that would not otherwise engage with the power sector, even if the Capex costs are not high enough to meet existing thresholds. The proposal will provide greater revenue certainty by increasing access to multi-year agreements, so it is expected that participation of low-capex technologies in the CM will increase. This assumption is further supported by the fact that a greater number of relevant technology type CMUs have previously participated in the CM (Figure 1), which suggests that there is some additional capacity that this proposal could reach again, as discussed in the section 3.4.

CM payments are typically used to cover some of the fixed costs of participating units and as the Capex of the units covered by this proposal is low, their auction exit bid profile is not expected to change. However, this proposal is likely to increase the volume of relevant technology types participating, thereby increasing auction liquidity. In turn, this may place downward pressure on the CM auction clearing prices. In addition, the degree of impact this proposal could have on overall CM costs is expected to be limited, as the highest participation rate of DSR in a T-4 auction was 2.7% of all de-rated capacity awarded an agreement.

Due to the nature of some sources of DSR, they could be considered less reliable than other generation technologies and this could lead to an increased risk to security of electricity supply. However, under existing CM arrangements, DSR technologies are able to enter capacity below their de-rated capacity to cover this risk. The government believes existing penalty regime and the proposed improvements to the CM's delivery assurance included in this consultation (such as the SPD proposal), if adopted, are likely to incentivise Capacity Providers to continue to deliver on their contracted capacity and therefore the government does not anticipate increased risk to security of supply arising from this proposal.

Certain low-Capex technologies are either high-carbon or include an element of high-carbon generation, such as behind-the-meter generation. Allowing them to access the new 3-year agreements may have led to locking in additional carbon emissions, therefore the proposal has been developed to include an eligibility requirement, ensuring that generation must satisfy carbon intensity limit whilst also restricting the use of annual running hours. As such, this is preventing lock in of additional carbon emissions.

5.5 Capital Expenditure Thresholds

The proposals adjust the Capex processes of the CM to broaden the pool of projects of different technology types that can participate in the CM by introducing a new 9-year agreement and associated threshold, in addition to extending the permitted period for Capex for refurbishing plants.

The new proposed 9-year agreements would increase revenue certainty for eligible projects. CM payments are typically used to cover some of the fixed costs of the participants and multi-year agreements allow participants to spread the repayment of these costs across multiple years, thereby reducing their auction bid prices. In the absence of the new 9-year agreements, projects with Capex costs which are higher than the 3-year threshold but lower than the 15-year threshold would only be able to access 3-year agreements and therefore have only three years of revenue certainty. Increasing this agreement to nine years would therefore be expected to lead to a reduction in their auction bid prices. In turn, this may also reduce the auction clearing price and therefore the costs of the CM.

Based on engagement with stakeholders, the government understands that the pre-qualification process has a pre-selection effect with some projects not entering the auction if they do not anticipate being successful. Therefore, this proposal may prompt additional projects to come forward to participate in the auctions. In turn, this would increase auction liquidity and potentially reduce the auction clearing price.

There is a risk that some CMUs may be incentivised to inflate their costs to reach the new threshold to be eligible for 9-year agreements that they would not need, potentially resulting in unnecessary costs to consumers. However, the government notes that the CM has seen cases of restraint in similar situations for 15-year agreements: for example, over 100MW (de-rated) of successful CMUs have been eligible for 15-year agreements but have chosen to take shorter agreements according to their financing needs. The government expect a similar approach to be taken by projects eligible for 9-year agreements with successful participants opting for agreement lengths between 3 and 9 years, according to their financing needs.

Extending the permitted period for accounting Capex for Refurbishing CMUs (discussed in Section 3.5.2) will reduce the risk of termination for participating Refurbishing CMUs delivering their capacity. This lower level of risk could increase the participation of Refurbishing CMUs and reduce their bids, potentially reducing the costs of the CM.

The numerical value of the 15-year agreement thresholds is not changed in this proposal and the numerical value of the 3-year agreement threshold changes by less than 4% (only the associated reference cost levels are proposed to change). This means that this proposal is not expected to have an impact on the behaviour of CM participants in recent auctions. The government welcomes stakeholder views on whether the level of thresholds should also change over time as the cost of different technology types change.

5.6 Other proposals

The government response to this consultation will include an assessment of impacts on the final versions of the proposals on Connection Capacity (2.3) and on Mothballed Plant (2.4).

Question 35

Do you agree with the consideration of impacts in section 5? Are there any additional impacts which the government has not considered? Please provide supporting evidence where possible.

Consultation questions

Question on Chapter 2

1. Do you agree with the proposed changes to the SPD process? Are the proposed changes likely to cause any unintended consequences?

2. Are there any barriers faced by storage CMUs in meeting the CM's performance and duration testing requirements, and if so, can you suggest any potential solutions? Please provide evidence to support your response.

3. Do you agree with the proposed changes to enable Capacity Providers to determine a CMU's connection capacity solely on the basis of TEC, MEC or Average Output? Are there any unintended consequences of taking this approach?

4. Should Capacity Providers be allowed to self-nominate their CMUs' connection capacity, provided the nominated figure is not higher than TEC, MEC or Average Output?

5. Do you agree with the proposed changes to enable mothballed plants which are existing Generating CMUs to return to the CM? Would these changes result in any unintended consequences?

6. Do you agree with the proposed changes to the CM's penalty rate? Are any unintended consequences likely to result from this change?

7. Do you agree with the proposed changes to the timelines for calculating non-delivery penalties?

Questions on Chapter 3

8. Do you agree with our proposal to introduce lower emissions limits for new and Refurbishing CMUs from 2035?

9. Do you agree with our proposed changes to the emission limits regime?

10. Are there any further required changes to the emissions limits regime which have not been identified?

11. Do you have any views or evidence on the impact that the emissions limit proposal may have on investment in transitional pathways, such as hydrogen blending or CCUS retrofit?

12. If you have an unabated gas CMU in the CM, what are your plans for this capacity as the power sector decarbonises? Do you intend to decarbonise your CMU once viable pathways such as the DPA are available?

13. From the perspective of a Capacity Provider, are there any additional barriers to decarbonisation than those mentioned above? Would it be necessary to terminate your CM agreement in order to decarbonise your CMU?

14. How long would it take to retrofit your plant(s) to either CCUS or Hydrogen and when would it be feasible for your plant(s) to come offline to do so? Please provide a breakdown of this where possible.

15. Do you have any comments on our suggestions of how CMUs could decarbonise or suggestions of your own? If so, please provide details of this.

16. Could secondary trading provide a pathway to the decarbonisation of an existing CMU? Please provide an explanation to your answer.

17. Could reactively procuring capacity provide a pathway for CMUs to decarbonise whilst ensuring security of supply? Please provide an explanation for your answer.

18. Could over-procurement of replacement capacity via the CM enable CMUs to decarbonise whilst ensuring security of supply? Please provide an explanation to your answer.

19. Do you agree with the proposal to introduce 3-year agreements for low carbon, low capex CMUs? If not, do you have any suggestions for an alternative approach?

20. Are there any potential consequences or risks that you think the government should further consider?

21. Specifically, which low carbon technologies do you expect might benefit from a 3-year agreement with no capex threshold?

22. Do you agree with the proposed changes to the reference cost levels underpinning the CM's 3-year and 15-year Capex Thresholds?

23. Do you have any concerns about the assumptions made regarding the calculation of the revised reference cost levels?

24. Do you foresee any unintended consequences which could result from making this change to the approach for the 3-year and the 15-year Capex Thresholds? Conversely, do you foresee any unintended consequences which could result from not making substantial changes to the level of the 3-year and the 15-year Capex Thresholds?

25. Do you agree with the proposed introduction of a 9-year Capex Threshold for low carbon CMUs? Do you foresee any unintended consequences?

26. Do you agree with the proposed reference cost level underpinning the new 9-year Capex Threshold for low-carbon CMUs? If not, do you have further evidence on alternative reference cost levels?

27. Do you agree with the proposed changes to the definition of Total Project Spend to extend the scope of the existing permitted period for Capex in respect of new build CMUs (i.e. in effect a 77-month period prior to the commencement of their first Delivery Year) to include Refurbishing CMUs? Do you foresee any unintended consequences which could arise from this change?

28. The government remains open to considering proposals to address challenges faced by projects with long build times. Please provide further evidence or proposals that you feel would address such challenges.

Questions on Chapter 4

29. Do you agree with the proposed clarification to Rule 5.9.7? Does the proposed clarification have any unintended consequences?

30. Do you agree with the proposed amendment? Does the proposed amendment have any unintended consequences?

31. Do you agree with the proposed change to the CM Regulations to enable Capacity Providers with relevant CMUs to use the CM to CfD transfer route in practice? Do you foresee any unintended consequences of making this change?

32. Do you think that the amended transfer route should continue to be available to new CM agreements in the future, or should it be restricted to existing agreements?

33. Do you agree with the proposed amendment? Does the proposed amendment have any unintended consequences?

34. Do you have any comments or concerns regarding our proposed phased implementation of the requirement for Fossil Fuel Emissions Declarations to be independently verified?

Question on Chapter 5

35. Do you agree with the consideration of impacts in section 5? Are there any additional impacts which the government has not considered? Please provide supporting evidence where possible.

Next steps

The government will consider responses to this consultation and aims to publish a response in Spring 2023.

The response will outline the proposals the government aims to implement. The government has historically made changes to the CM through secondary legislation for the following delivery year, however – as in every year - this is subject to when parliamentary time allows. These proposals will be informed by the range of responses the government receive to this consultation, by further stakeholder engagement and by additional analysis. In particular, implementation of the post-2035 emissions regime proposal will be subject to detailed analysis of any impact to security of supply from the late 2020s. Implementation will also be subject to ensuring the proposed changes are compliant with the requirements of the UK's new domestic subsidy control regime, which will be in force from January 2023.

Glossary

Abbreviation	Definition
Aggregator	An aggregator provides an intermediary service of aggregating DSR capacity from a range of other organisations for the purposes of National Grid ESO Balancing Services or the CM, in return for a share in the revenues generated by those organisations.
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.
Auction parameters	The parameters of the capacity auction, which are determined by the Secretary of State. This includes the capacity target, net-CONE, the price-taker threshold, price cap, the capacity margins and the capital expenditure thresholds.
Balancing Services / Balancing Mechanism	The services procured by / mechanism used by National Grid ESO to balance electricity demand and supply across the national transmission network.
Baseload	Electricity generation that is at the bottom of the merit order, i.e. tends to have low short run marginal costs and a high load factor.
Behind the meter generation	DSR that reduces electricity demand on the distribution network or transmission network by starting up on-site generators to provide electricity. Also known as generation derived DSR.
Cap and Floor	A scheme designed to incentivise investment in interconnectors between GB and other countries by reducing uncertainty in electricity prices for interconnectors.
Capacity	An amount of electrical generating capacity or DSR 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, as a result of which successful bidders are awarded capacity agreements.
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

Abbreviation	Definition
	auction. It is the product that forms the capacity to be purchased 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.
Capital Expenditure Thresholds (Capex)	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).
Carbon Capture, Utilisation and Storage (CCUS)	The process of capturing carbon dioxide from industrial processes, power generation, certain hydrogen production methods and greenhouse gas removal technologies such as bioenergy with carbon capture and storage and direct air capture. The captured carbon dioxide is then either used, for example in chemical processes, or stored permanently in disused oil and gas fields or naturally occurring geological storage sites.
Combined Cycle Gas Turbine (CCGT)	An electrical power plant in which a gas turbine and a steam turbine are used in combination to achieve greater efficiency.
Combined Heat and Power (CHP)	An electricity generating unit that also supplies heat.
Connection Capacity	The capacity available to a CMU on the distribution or transmission network.
Contracts for Difference (CFDs)	CFDs are 15-year private law contracts between low carbon generators and the Low Carbon Contracts Company. CFDs stabilise revenues for generators at a fixed price level, set by the Government (the ‘strike price’). Generators receive revenue from selling their electricity into the market as usual, but when the market reference price is below the strike price they receive a top-up payment. If the reference price is above the strike price, the generator must pay back the difference.
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

Abbreviation	Definition
	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.
Decarbonisation	A process of reducing the amount of carbon dioxide we release into the atmosphere.
Delivery Assurance	An umbrella term that refers to the framework of checks and balances that are used to ensure that CMUS are available to deliver their capacity obligation at start of and during the delivery year. This includes processes in the lead up to the delivery year, such as termination events and the posting of credit cover, as well as processes within the delivery year such as satisfactory performance days.
Delivery Body	The national electricity system operator (i.e. National Grid ESO).
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 1st October- 30th September of each calendar year. The delivery year 2022/23 commences on 1st October 2022.
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).
Demand Side Response (DSR) Component	A constituent component of a DSR CMU. DSR CMUs are typically made up of multiple components that are aggregated together to form a single CMU.
Demand Side Response (DSR) Tests	Tests carried out to ensure that DSR capacity providers are on track to deliver their capacity obligation before the start of the delivery.
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	A factor that is applied to a CMU's capacity to derive its de-rated capacity.

Abbreviation	Definition
Distribution Network	This consists of smaller and lower-voltage 'local' networks (compared to the high-voltage transmission network). It is used to carry electricity from the high voltage transmission network to industrial, commercial and domestic users.
Electricity Market Reform (EMR)	A programme created by BEIS (formerly DECC) to deliver secure electricity supply and new low carbon generation. It consists of four mechanisms: Contracts for Difference, the Capacity Market, Carbon Price Support and an Emissions Performance Standard.
Electricity Settlements Company (ESC) / Settlement Body	Referred to in the CM legislation as the "Settlement Body". A private limited company owned by the Secretary of State for the Department, established to oversee the settlement of payments to and from suppliers and capacity providers such as the supplier charge and capacity payments.
Extended Performance Test (EPT)	Requires a CMU from a Storage Generating Technology Class with an agreement awarded after 21 December 2017 to generate continuously at an average of their Connection Capacity multiplied by Technology Class Weighted Average Availability for a number of consecutive Settlement Periods equivalent to the CMU's storage duration. This test is taken at one of the CMU's three Satisfactory Performance Days in the winter of the CMU's first Delivery Year and must be repeated once every three years thereafter.
Flexibility	The ability to change generation and/or demand in response to an external signal (e.g. price or contract terms). Flexibility enabling technologies include batteries, demand side response, interconnectors and fossil fuel generators.
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)
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)

Abbreviation	Definition
Load Factor	The proportion of total hours that an energy generation resource runs throughout the year.
Maximum Export Capacity (MEC)	The maximum amount of capacity a CMU can export to the distribution network, as defined in the CMU's Distribution Connection Agreement.
Megawatt (MW)	A unit of capacity (1000 kilowatts)
Merit Order	A way of ranking available sources of energy, especially electrical generation, based on ascending order of price (which may reflect the order of their short-run marginal costs of production) together with amount of energy that will be generated.
Mid-merit	Refers to plants that fall in the middle of merit order (i.e. plants that tend to have short-run marginal costs and load factors that are neither relatively low nor high).
National Grid Electricity System Operator (NGESO) / Electricity System Operator (ESO)	The organisation operating the national electricity transmission network for GB.
Net Capacity Obligation	Total Capacity Obligation for a CMU following any secondary trades
New build capacity / New build generator/ New build generation	Generators that are to be or are being constructed.
New build CMU	A generating CMU that is not built at the time of the relevant capacity auction.
Open Cycle Gas Turbine (OCGT)	A combustion turbine plant fired by liquid fuel to turn a generator rotor which produces electricity.
Operating Expenditure (Opex)	The ongoing day-to-day cost for running a product, business or system.
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".
Peaking Capacity	Electricity generators that do not normally operate but are ready to do so when needed at times of peak demand or low generation.
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.

Abbreviation	Definition
Prequalification Window	For any Capacity Auction, the period specified in the Auction Guidelines within which applications for prequalification are to be made.
Pumped Storage Hydropower (PSH)	PSH is a storage technology that stores energy in the form of gravitational potential energy of water, pumped from a lower elevation reservoir to a higher elevation.
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.
Satisfactory Performance Days (SPDs)	Days within the delivery year in which capacity providers must demonstrate that they are able to deliver their capacity obligation.
Secondary Trading	Trading by capacity providers in respect of the capacity obligations they hold. Takes the form of obligation trading or volume reallocation.
Settlement Period	A period of 30 minutes beginning on an hour or half-hour.
System Stress Event (SSE)	A SSE 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 the large majority of capacity needed in the relevant delivery year.
Termination	In order to prevent speculative bidding and create strong incentives for new build CMUs to deliver new capacity on time, new build capacity and unproven DSR that is not on track to deliver in time for the delivery year may have its capacity agreement terminated, resulting in termination fees.
The Electricity Capacity Regulations ("the Regulations)	This refers to the Electricity Capacity Regulations 2014, S.I. 2014/2043, the principal regulations underpinning the CM.
Transmission entry capacity (TEC)	The total amount of capacity that a transmission connected energy resource requires on the network.
Transmission Network	This is the high-voltage electricity network that transmits large quantities of electricity over long distances across the country (cf. distribution network).
Turn-down Demand Side Response (DSR)	DSR that reduces electricity demand by temporarily switching off generators.

Abbreviation	Definition
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.
Wholesale electricity market	The market in which generators sell electricity to suppliers.
Winter	A period from 1 October to the following 30 April.

This consultation is available from: www.gov.uk/government/consultations/capacity-market-consultation-strengthening-security-of-supply-and-alignment-with-net-zero

If you need a version of this document in a more accessible format, please email electricity.security@beis.gov.uk. Please tell us what format you need. It will help us if you say what assistive technology you use.