Department for
Business, Energy
& Industrial Strategy

CONTRACTS FOR DIFFERENCE AND CAPACITY MARKET SCHEME UPDATE 2019

Contracts for Difference and Capacity Market Scheme Update 2019

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Executive Summary

1. This is the sixth annual update outlining the progress that has been made on the policy mechanisms implemented under the Electricity Market Reform (EMR) programme, which closed in 2015. The key mechanisms are the Contracts for Difference scheme and the Capacity Market. Both are designed to incentivise the investment required in the United Kingdom's (UK) energy infrastructure and to deliver low carbon and reliable energy supplies, while minimising costs to consumers.

2. This document sets out the headline achievements over the past 12 months in the following areas:

   - **The Contracts for Difference (CfD)** scheme, enabling investment in low-carbon electricity generation;
   - **The Capacity Market (CM),** ensuring electricity capacity during periods of system stress;
   - **The Electricity Demand Reduction (EDR)** pilot, provided financial support to organisations to test viability of support mechanism to deliver lasting electricity capacity savings at peak times.

Key progress since the 2018 update

Contracts for Difference

3. The third CfD Allocation Round concluded in September 2019 with contracts being awarded to 5,774.82 MW of new renewable electricity capacity and significant cost savings for consumers. In 2018, the government announced its intention to hold auctions every two years, giving industry the certainty it needs to invest in bringing forward new projects, with the fourth Allocation Round scheduled for 2021. Annual low carbon generation under the CfD scheme has increased from 6.6 TWh in 2017/18 to 12.1 TWh in 2018/19.

4. In June 2019, Hinkley Point C's first major milestone was achieved – the construction of the common raft of the nuclear island for reactor 1. The common raft is the reinforced concrete structure on which the reactor building, and immediately adjacent buildings will be placed.

Capacity Market

5. On 15 November 2018, the General Court of the Court of Justice of the European Union annulled the European Commission's State aid approval of Great Britain (GB)'s CM[1] in response to a challenge by Tempus Energy. The CM was put into standstill while the Commission conducted an investigation to reassess the compatibility of the scheme with European Union (EU) State aid rules. On 24 October 2019, the Commission confirmed its original decision in 2014 to grant State aid approval for the CM.[2] This allowed the government to restore the scheme and restart CM activities.

6. The government published its statutory Five-year Review of the Capacity Market on 22 July 2019.[3] The review was informed by a Call for Evidence in August 2018. The review assessed the appropriateness of the CM's objectives and its implementing legislation, the extent to which those objectives have been achieved and whether those objectives remain appropriate. The review found that the scheme has been working well and performance against objectives has been good.

Electricity Demand Reduction

7. The EDR pilot concluded in December 2018 and its final evaluation was published in July 2019.[4] The pilot showed that energy savings could be delivered at peak times, and the evaluation concluded that the pilot had been cost effective with a positive net present value (NPV) of just over £9 million. It suggested that aggregators could be key to unlocking energy efficiency potential at scale.

8. Although the pilot has provided some useful learning, we have concluded that energy efficiency projects are not yet ready to enter the CM. This is because the findings of the pilot indicate that participation in the CM as currently designed would likely be low and energy efficiency projects would be unlikely to win CM agreements, combined with the view that significant design changes would likely be needed to accommodate energy efficiency in the CM. A Call for Evidence on facilitating energy efficiency in the electricity market was conducted from July to September 2019. The government sought views on market barriers to energy efficiency in the UK, and how we can create new markets for energy efficiency, securing its role in the wider energy market, contributing to flexibility and becoming a reliable alternative to increased generation and network reinforcement. We are currently considering the responses to the Call for Evidence and we will publish a summary in due course.

1 http://ec.europa.eu/competition/state_aid/cases/253240/253240_1579271_165_2.pdf
2 https://europa.eu/rapid/press-release_IP-19-6152_en.htm
3 https://www.gov.uk/government/publications/capacity-market-5-year-review-2014-to-2019
4 https://www.gov.uk/guidance/electricity-demand-reduction-pilot

Contracts for Difference Scheme

Deliverable	Achieved	When
Documents confirming the third CfD Allocation Round published	✔	1 May 2019
Third CfD Allocation Round opens	✔	29 May 2019
Third CfD Allocation Round results announced	✔	20 Sept 2019
Third CfD Allocation Round contracts signed	✔	18 Oct 2019

Introduction

1. The CfD scheme is the government's main mechanism for supporting low-carbon electricity generation projects. Contracts for renewable electricity generation projects are awarded in a series of competitive auctions, with the lowest price bids being successful, which drives efficiency and cost reduction. CfDs give greater certainty and stability of revenues to electricity generators by reducing their exposure to volatile wholesale prices, while protecting consumers from paying for higher costs when electricity prices are high.

2. The scheme has been a success, delivering substantial new investment and helping deliver significant reductions in the costs of capital for some renewable technologies. Following the conclusion of the third CfD Allocation Round in September 2019, the scheme currently supports 49 renewable electricity projects (73 CfDs) across a range of technologies, totalling around 15.5 GW. In addition to this, there is also a CfD contract for the 3.2 GW Hinkley Point C nuclear project which is currently under construction. CfD contracts are managed by the Low Carbon Contracts Company (LCCC), a government-owned company. Information on the CfD projects managed by the LCCC is published on their CfD Register.[5]

[5] https://www.lowcarboncontracts.uk/cfds

3. As of December 2019, 4.1 GW of that capacity is operational, with 2019 being the most active commissioning year to date.

The Third CfD Allocation Round

4. On 1 May 2019, the details of the third CfD Allocation Round were confirmed in a series of documents published by the Department for Business, Energy and Industrial Strategy (BEIS),[6] including statutory notices, the Allocation Framework setting out the rules for the Allocation Round and the final Contracts for Difference Standard Terms and Conditions and other contract templates. The budget was set at £65 million (2011/12 prices) for projects starting to generate electricity in either 2023/24 or 2024/25. The Allocation Round was subject to an overall capacity cap of 6 GW.

5. The eligible technologies for the Allocation Round were:

    - Advanced Conversion Technologies
    - Anaerobic Digestion (>5 MW)
    - Dedicated Biomass with CHP
    - Geothermal
    - Offshore Wind
    - Remote Island Wind (>5 MW)
    - Tidal Stream
    - Wave

6. The administrative strike prices (£/MWh, in 2012 prices) applicable to the third CfD Allocation Round were:

Technology Type	2023/24 Strike Prices	2024/25 Strike Prices
Advanced Conversion Technologies	113	111
Anaerobic Digestion (>5 MW)	122	121
Dedicated Biomass with CHP	121	121
Geothermal	129	127
Offshore Wind	56	53

6 https://www.gov.uk/government/collections/contracts-for-difference-cfd-third-allocation-round

Remote Island Wind	82	82
Tidal Stream	225	217
Wave	281	268

Figure 1 - Administrative Strike Prices for the third CfD Allocation Round

7. Further information on the budget and eligible technologies is set out in the Final Budget Notice and Accompanying Note on the third Allocation Round, available on GOV.UK.[7]

8. The third CfD Allocation Round opened for applications on 29 May 2019. National Grid Electricity System Operator (ESO), in its role as the EMR Delivery Body, invited sealed bids from qualifying applicants from 9 to 29 August. Following an auction and independent audit, the results of the Allocation Round were announced on 20 September 2019.[8]

9. Twelve new renewable electricity projects have been awarded CfDs. The successful technology types were Offshore Wind, Advanced Conversion Technologies and Remote Island Wind. These new projects will provide nearly 6 GW of capacity by 2025, 2.4 GW more than was achieved in the last CfD Allocation Round held in 2017 and represent another important step towards decarbonising the UK.

10. The competitive approach in the CfD auction has continued to drive down prices. Clearing prices – the prices that the successful projects have been awarded in the auction – were well below the administrative strike prices for each of the successful technologies. Projects delivering in 2023/24 have been awarded £39.65 for each megawatt hour of electricity that they generate, while projects delivering in 2024/25 have been awarded a strike price of £41.61. The clearing prices achieved for the offshore wind projects is around 30% lower than in the 2017 round. The whole auction capacity cap helped to promote competitive tension in the Allocation Round, maximising value for money for consumers.

11. The government has a statutory obligation to conduct a five-year review of the Contracts for Difference Scheme, as required by the Energy Act 2013. The focus of the five-year review is to outline to what extent policies in each chapter met their original objectives and if the objectives remain appropriate and, if so, the extent to which those objectives could be achieved in a way that imposes less regulation. The CfD five-year review will be evidenced by the first phase of an external evaluation of the scheme that

7 https://www.gov.uk/government/publications/contracts-for-difference-cfd-allocation-round-3-statutory-notices

8 https://www.gov.uk/government/publications/contracts-for-difference-cfd-allocation-round-3-results

will provide an evidence base that can inform ongoing design and development of the CfD and related low carbon generation schemes. We will lay the findings of the five-year review in Parliament in due course.

Hinkley Point C

12. On 29 September 2016, the government signed a Contract for Difference for Hinkley Point C, the first new nuclear plant in the UK for more than 20 years. The strike price is £92.50[9] per megawatt hour.

13. Hinkley Point C will provide 3.2 GW of secure, base load, low carbon electricity for at least 60 years, meeting around 7% of the UK's current energy needs and powering nearly six million homes. It will boost the local and national economy, providing 25,000 job opportunities and apprenticeships during construction and operation. A total of almost £4 billion will go into the regional economy over the lifetime of the project. This is composed of c£1.5 billion during construction and c£2.4 billion during operations in today's money.

14. On 17 July 2018, the government published the Hinkley Point C Wider Benefits Realisation Plan.[10] This plan, which was produced with support from the developer, sets out how the wider benefits of the project will be delivered over its construction period.

15. Significant progress has been made in the early stages of construction with over 4,500 people now working on site. In June 2019, the project's first major milestone was achieved – the construction of the common raft of the nuclear island for reactor 1.

16. On 25 September 2019, following a detailed review of the project's costs, schedule and organisation by EdF SA, EdF SA announced that:

    - The next milestone of completing the common raft for Unit 2 in June 2020, which was announced earlier this year, is confirmed;
    - The management of the project remains mobilised to begin generating power from Unit 1 at the end of 2025. To achieve this, operational action plans overseen by the project management are being put in place. These involve the EDF Group's engineering teams in GB and France, buildings and ancillary works contractors, and suppliers of equipment and systems throughout the supply chain;

9 In 2012 prices, assuming Sizewell C project has not achieved a Final Investment Decision, otherwise the Strike Price is reduced by £3/MWh

10 https://www.gov.uk/government/publications/hinkley-point-c-wider-benefits-realisation-plan

- The previously communicated risk of Commercial Operation Date delay of unit one and two (of 15 months and nine months respectively) has increased;
- The project completion cost is now estimated between £21.5 billion and £22.5 billion, an increase of £1.9 billion to £2.9 billion compared to the previous estimate. The range depends on the effectiveness of action plans to be delivered in partnership with contractors;
- Cost increases reflect challenging ground conditions which made earthworks more expensive than anticipated, revised action plan targets and extra costs needed to implement the completed functional design, which has been adapted for a first-of-a-kind application in the UK context; and
- Under the terms of the Contract for Difference, there is no impact for UK consumers or taxpayers.

Capacity Market

1. The CM is intended to ensure the long-term security of GB's electricity supply at least cost to consumers. The CM provides all forms of capacity capable of contributing to security of supply the right incentives to be on the system and to deliver during periods of electricity system stress, for example during cold, still periods where demand is high and wind generation is low.

2. The CM works by allowing eligible capacity providers to bid into a competitive auction to provide capacity when the electricity system needs it. Capacity providers who made a successful bid in the auction receive a steady payment to ensure enough capacity is in place to meet demand at times of system stress. CM revenue from capacity payments incentivises the necessary investment to maintain and refurbish existing capacity, and to finance new capacity. Capacity providers face penalties if they fail to provide electricity, or temporary demand reduction, when requested to during a system stress event.

3. The CM is required to be technology neutral, which means it does not seek to procure specific volumes of capacity from particular types of technology. All types of capacity are able to participate – except for capacity providers in receipt of State support from other policy measures – provided they can demonstrate sufficient technical performance to contribute to security of supply.

4. Auctions are held one (T-1) and four (T-4) years ahead of the year capacity must be delivered, giving investors certainty over part of the future revenues they will receive. Existing generating capacity competes against new build, Demand Side Response (DSR) and interconnectors, with the auction procuring whatever mix of capacity provides best value for consumers.

State Aid

5. In 2014, the European Commission found the main GB CM scheme to be compatible with EU State aid rules and granted it State aid approval. A challenge to that decision was brought by Tempus Energy, who considered that certain aspects of the CM scheme disadvantaged DSR providers in comparison to other operators, such as more conventional generation.

6. In November 2018, the General Court of the Court of Justice of the European Union annulled the Commission's decision on procedural grounds. This prevented the UK

government from making capacity payments under existing agreements until the Commission could investigate and approve the scheme again. The Commission is appealing the General Court judgment.

17. The government worked with the Commission to ensure it had everything necessary to reconsider the case for approval of the CM scheme as quickly as possible. On 24 October 2019, the European Commission announced its decision that the CM was compatible with EU State aid rules.[11]

18. On 25 October 2019, the Secretary of State for BEIS notified the CM Settlement Body (the Electricity Settlements Company or ESC)[12] and the CM Delivery Body (National Grid ESO)[13] of the Commission's State aid decision and instructed them to undertake the necessary activities to fully restart the CM.

19. The Commission's State aid decision also notes that the UK has committed to implementing a number of improvements to the CM's design to reflect recent market and regulatory developments, including those identified through our recent statutory five-year-review of the effectiveness of the CM. We will consult on arrangements for implementing these commitments in 2020.

20. Figure 2 lists the planned auctions for 2020. Changes were made to the Regulations and Rules[14] ahead of the 2019 pre-qualification window to enable a T-3 auction to be run in early 2020. This T-3 auction replaces the T-4 auction for delivery in 2022/23 that was scheduled for early 2019 but was cancelled following the General Court judgment.

11 https://europa.eu/rapid/press-release_IP-19-6152_en.htm
12 https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/842240/Trigger_Letter_-_ESC_SIGNED.pdf
13 https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/842238/Trigger_Letter_-_NGESO_SIGNED.pdf
14 https://www.gov.uk/government/publications/capacity-market-rules

Auction	Delivery Year	Auction Date
Year ahead Capacity Auction (T-1)	2020/21	6-7 February 2020
Three year ahead Capacity Auction (T-3)	2022/23	30-31 January 2020
Four year ahead Capacity Auction (T-4)	2023/24	5-6 March 2020

Figure 2 - List of Capacity Auctions to be held in 2020

Capacity Market Delivery Year 2018/19

21. 2018/19 was the second full CM delivery year. The year ahead Capacity Auction (T-1) that concluded in January 2018 secured 5.79 GW of capacity for delivery in 2018/19.

22. National Grid's margin forecast as set out in the 2018/19 Winter Outlook publication was 11.7% on an underlying demand basis.[15] There were no system stress events during the winter period from November 2018 to the end of February 2019.

Capacity Market Payments

23. The Electricity Settlement Company records show that £175.6m was paid out to CM agreement holders during the 2018/19 financial year.[16][17]

24. The General Court judgment resulted in a "standstill period" from 15 November 2018 until the Commission's State aid decision on 24 October 2019 during which capacity payments were suspended. Back payments for payments suspended during this period are due to be made in January 2020.

Replacement T-1 Auction for Delivery Year 2019/20

25. The replacement T-1 auction for delivery in 2019/20, which topped up the capacity secured through the earlier T-4 auction, was held on 12 June 2019, and the final results

[15] https://www.nationalgrideso.com/document/127551/download
[16] https://www.lowcarboncontracts.uk/sites/default/files/2019-07/ESC Annual Report and Accounts 2018-2019_0.pdf
[17] Due to the standstill period beginning on 15 November 2018, the figure quoted refers to CM payments made between April 2018 and November 2018. The CM went into standstill prior to the end of the financial year 2018/19.

were published on 24 June 2019.[18] This auction replaced the T-1 auction originally scheduled for early 2019, which was cancelled following the General Court judgment. Conditional Capacity Agreements were awarded in the Replacement T-1 Auction as payments under those agreements were conditional on a positive State aid decision by the European Commission. Those Conditional Capacity Agreements became full Capacity Agreements on 24 October 2019 upon the Secretary of State's notification of the State aid decision to the Delivery Body and Settlement Body. The £0.77 clearing price was the lowest to date for a T-1 capacity auction, securing 3.6 GW of capacity. The total forecast cost of capacity awarded in this auction is £2.8m (in 2019 prices).

26. Figure 3 shows the breakdown of Conditional Capacity Agreements awarded by technology type in terms of capacity (MW).

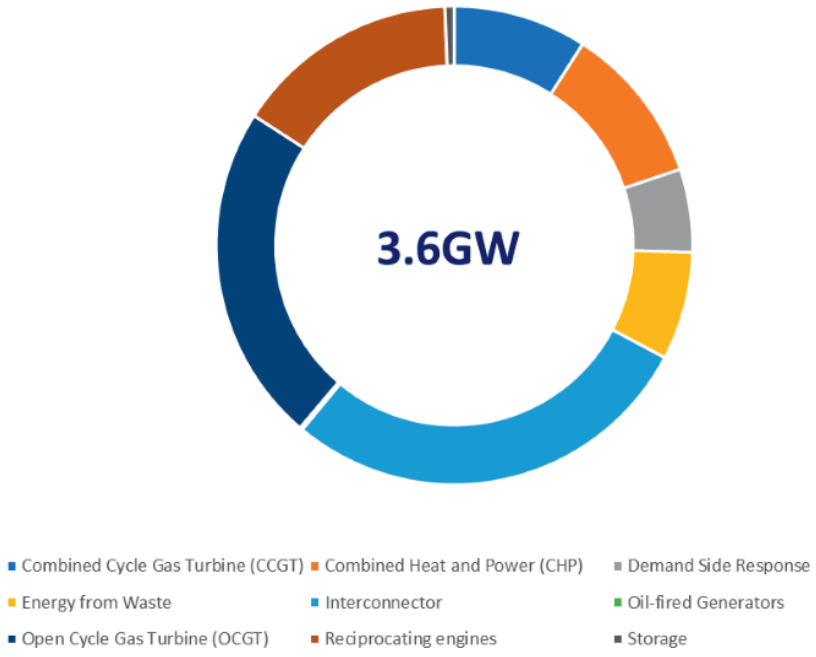

Figure 3 - The breakdown of Conditional Capacity Agreements awarded by technology type in 2019/20 Replacement T-1 Auction

Prequalification appeal decisions for Cancelled T-4 Auction for delivery year 2022/23 and Replacement T-1 Auction for delivery year 2019/20

27. To participate in a capacity auction, capacity must first prequalify; a process managed by the CM Delivery Body. All unsuccessful applicants for prequalification have the opportunity

[18] https://www.emrdeliverybody.com/Capacity%20Markets%20Document%20Library/T-1%202018%20Final%20Results%20Report%20(DY%2019-20).pdf

to have the decision reviewed as part of a two-tier appeal process – initially by the CM Delivery Body, National Grid ESO (Tier One) and subsequently by Ofgem (Tier Two).

28. Prequalification applicants can request that the Delivery Body reviews its prequalification decisions; this is a Tier One appeal. Should the applicant disagree with the result of the Delivery Body review they can request that Ofgem consider the Delivery Body's decision; this is a Tier Two appeal.

29. The Tier Two appeals process covered the T-4 auction for delivery year 2022/23 (which was later cancelled) and for the Replacement T-1 auction for delivery year 2019/20. Ofgem received 69 appeals from prequalification applicants. Ofgem grouped analogous appeals into 21 thematic areas. Ofgem upheld the Delivery Body's prequalification decisions in 16 thematic areas. Ofgem overturned the Delivery Body's prequalification decisions in five thematic areas and directed the Delivery Body to prequalify the eight affected prequalification applicants.

Changes to Capacity Market Rules and Regulations

30. After consultation, a series of changes were made to the CM during 2019. Firstly, new regulations were made to enable the CM to operate during the standstill period to the extent possible given the General Court judgment. The Electricity Capacity Market (No. 1) Regulations 2019 came into force on 9 April 2019. Secondly, regulations were made to provide clarity on how the scheme would operate should the Commission give State aid approval for the scheme. The Electricity Capacity Market (No. 2) Regulations 2019 came into force on 19 July 2019. Five sets of amendments to the CM Rules[19] were also made during 2019 in support of these objectives and regulations.

31. The Government published its first Five-year Review of the CM in July 2019, following a Call for Evidence held in August 2018 and publication of a summary of responses in March 2019.[20] [21] Overall, the review found that the scheme has been working well and performance against objectives has been good. We therefore do not intend to make any major changes to the CM at this stage, but we intend to continue to make incremental changes based on the evidence of the scheme's operation, feedback from stakeholders, and to honour the commitments noted in the Commission's State aid decision.

19 https://www.gov.uk/government/publications/capacity-market-rules
20 https://www.gov.uk/government/publications/capacity-market-5-year-review-2014-to-2019
21 https://www.gov.uk/government/consultations/capacity-market-and-emissions-performance-standard-review-call-for-evidence

32. Ofgem published its five-year review of the CM[22] on 16 April 2019 and consulted on a number of amendments to the CM rules with the objective of reducing the complexity and burden of prequalification, participation and reporting, as well as facilitating a more open and liquid secondary trading market for capacity agreements. This resulted in a number of minor changes to the CM Rules as well as identifying areas requiring further development and consultation including the rules change process, secondary trading and additional rule changes association with prequalification for which a forward plan was published.[23]

Panel of Technical Experts

33. The Panel of Technical Experts (PTE) is an independent advisory group appointed by government to advise on technical aspects of Electricity Market Reform. The panel has a technical function and its remit does not include policy commentary, advising the government on its objectives for the CM or wider policy issues. The panel focuses on providing scrutiny of the analysis in National Grid ESO's annual Electricity Capacity Report (ECR). The PTE produce an annual report providing advice on the ECR, and to assist the Secretary of State for BEIS to set the parameters for the CM auctions. The most recent report was published in July 2019.[24]

34. This year the government appointed new members to the PTE. The following members have agreed to sit on the panel, and their biographies are available online[25]:

- Professor Derek Bunn (Chair)
- Dr Guy Doyle
- Ms Lisa Waters
- Professor Nick Jenkins
- Professor Frank Kelly CBE FRS

35. In their PTE roles, members do not represent their organisations and are obliged to inform BEIS of their interests and conflicts of interests. The PTE's terms of reference are publicly available.[26]

22 https://www.ofgem.gov.uk/publications-and-updates/five-year-review-capacity-market-rules-first-policy-consultation
23 https://www.ofgem.gov.uk/publications-and-updates/report-our-five-year-review-capacity-market-rules-and-forward-work-plan
24 https://www.gov.uk/government/publications/national-grid-electricity-capacity-report-2019-findings-of-the-panel-of-technical-experts
25 https://www.gov.uk/government/groups/electricity-market-reform-panel-of-technical-experts
26 https://www.gov.uk/government/groups/electricity-market-reform-panel-of-technical-experts

The Emissions Performance Standard

1. The Emissions Performance Standard (EPS), introduced by the Energy Act 2013, acts as a regulatory backstop to ensure that new fossil fuel-fired electricity generation contributes to electricity security of supply in a manner consistent with the UK's decarbonisation objectives.

2. In outline, the EPS places a notional limit on the carbon dioxide (CO_2) emissions produced by new fossil-fuel generation plants (described as "the emissions limit duty"). The limit, which is set at 450 g/kWh of CO_2, a level around half that produced by unabated coal, applies at individual plant level and is an absolute limit, so provides no facility for a plant to exceed its annual limit either by way of trading or year to year carry over. The EPS complements the National Planning policy, which requires new coal fired power stations to be equipped with Carbon Capture and Storage.

3. Since implementation of the EPS no new or substantially refurbished plant in scope of the measure has been built or started generating electricity. The emissions limit duty has therefore not been applied to any plant, and it has not been necessary for the regulators to monitor compliance with and enforce the emissions limit duty. We anticipate that plant in scope of the measure will be built in future years and fully expect these will comply with the emissions limit.

4. The government has a statutory obligation to conduct a five-year review of the EPS, as required by the Energy Act 2013, to establish whether the measure is achieving its objective, whether the objective remains appropriate, and whether it can be achieved in a way that imposes less regulation. It is intended that the outcome of the first such five-year review will be laid in Parliament in due course as part of the Energy Act 2013 review.

5. To inform the five-year review of the EPS, the government published a Call for Evidence, which was open to the public for eight weeks from 8 August 2018 to 1 October 2018.[27] A total of 27 responses to the EPS-related questions were submitted by a wide variety of organisations, including generators, developers, non-governmental organisations, trade associations and others. A summary of Call for Evidence responses was published on 7 March 2019.[28]

[27] https://www.gov.uk/government/consultations/capacity-market-and-emissions-performance-standard-review-call-for-evidence

[28] https://www.gov.uk/government/consultations/capacity-market-and-emissions-performance-standard-review-call-for-evidence

6. An overwhelming majority of the respondents to the Call for Evidence noted that the EPS has been achieving its objective and supported maintaining the measure. Many acknowledged the role of the EPS and that as a backstop it complements other decarbonisation policies, including the carbon price floor.

Electricity Demand Reduction Pilot

1. Energy systems are being transformed by rapid adoption of renewables at all scales, the anticipated increase in electric vehicles, and a range of new technologies including battery storage and advanced metering. Energy efficiency ("EE") has an important role in this energy system transition as it avoids the need to build new generation and reinforce electricity networks, but its impacts are rarely measured in a way that allows its contribution to be valued by market and network operators. It can, however, help to solve future challenges of a more distributed and low carbon electricity system at least cost and lowest risk as part of a more open and accessible market. EE was identified by the Committee on Climate Change as a key and low regret measure for the UK to reach net-zero greenhouse gas emissions,[29] as there is considerable potential for further action. 40 TWh/yr of EE potential has been identified in private sector commercial and industrial buildings, as well as 10 TWh of potential through more efficient industrial processes.[30]

2. At the time of EMR implementation in 2012, it was unclear whether and how EE projects that delivered lasting electricity savings at peak times could compete for funding in the CM. The EDR pilot was launched in 2014 to provide financial support to businesses that implemented EE measures that delivered electricity savings at peak times (defined as 4-8pm on winter weekdays for the EDR pilot).

3. In order to test whether EDR could be viable as part of the CM, the pilot was designed to reflect as closely as possible some of the key potential requirements likely to be placed on EE if it were to participate in the CM. This included the allocation of capacity agreements via two separate auctions (held in January 2015 and January 2016), the obligation to report and substantiate delivery of peak reductions over the following winter months, and a payment regime based on the delivery of capacity savings (on a £/kW basis) rather than the installation cost of EE measures or those savings made outside peak hours.

4. The EDR pilot is now complete and has delivered electricity savings of over 19 MW at peak times primarily through the installation of LED lighting against a contracted capacity of 22 MW across the two phases. Savings will continue to be made year on year over the lifetime of the measures implemented, and the participants will also have reduced their energy costs and associated carbon emissions, through non-peak time energy savings. The EDR pilot evaluation was published[31] in July 2019 to meet the obligation under the

[29] https://www.theccc.org.uk/publication/net-zero-the-uks-contribution-to-stopping-global-warming/
[30] BEIS Business Energy Statistical Summary, July 2018.
[31] https://www.gov.uk/guidance/electricity-demand-reduction-pilot

Energy Act 2013 to report to Parliament as soon as possible after the conclusion of the EDR pilot. The evaluation concluded that the pilot was cost effective with a positive net present value (NPV) of just over £9M, and that aggregators may be key to unlocking EE potential at scale. Aggregators could reduce the administrative burden, build portfolios with smaller energy saving projects and lower the risks of more innovative projects by packaging them with less risky projects.

5. Additionally, the EDR pilot evaluation found that the design of the pilot may have made it difficult for participants to develop new, fully additional projects due to a range of factors including the limited time for applications to be made, low funding amounts as a percentage of total cost, and what were viewed as challenging process and data requirements for participation in the scheme. The evaluation also highlighted the potential role for aggregators in delivery of EE. Although the pilot has provided some useful learning, we have concluded that EE projects are not yet ready to enter the CM. This is because the findings of the pilot indicate that participation in the CM as currently designed would likely be low and EE projects would be unlikely to win CM agreements, combined with the view that significant design changes to the CM would likely be needed to accommodate EE.

6. Under different regulatory landscapes in other regions, forward capacity markets have been successful in mobilising investment in energy efficiency measures that would otherwise not take place and bringing clearing prices down. EE has competed for several years in forward capacity markets in the US, including the New England Independent System Operator[32] and the Pennsylvania, Jersey, Maryland Interconnection Regional Transmission Organization.[33] But there are significant challenges including high transaction costs, measurement and verification (M&V) of EE in real time, and an abundance of low-cost fossil fuel power plants and rapidly increasing levels of low carbon electricity generation. Also, suppliers of EE capacity must navigate a highly complex set of processes, rules, and procedures to enrol in and then participate in network activities. These obstacles contribute to high project transaction costs and diminish returns.

7. Moreover, since the introduction of the CM and the launch of the EDR pilot, there have been significant changes in the energy system, with smart technologies and low carbon generation often located closer to consumers. For example, there is greater uptake of businesses and households generating their own energy, electricity battery storage, DSR, heat pumps and electric vehicles. Increasing demand from low carbon technologies such as heat pumps and electric vehicles will increase the importance of EE to both reduce energy costs, and the need for costly reinforcement of the electricity networks, allowing us to decarbonise at least cost to consumers.

[32] https://www.iso-ne.com/
[33] https://www.pjm.com/

8. As a result of actions set out in government and Ofgem's Smart Systems and Flexibility Plan,[34] new markets are emerging which reward peak network demand reduction in areas where expensive network reinforcement would otherwise be required. Distribution Network Operators now tender for demand reductions as an alternative to building new network. However, there are still barriers to EE participation in these tenders. Trials have demonstrated that EE could be effective; SSE's SAVE initiative delivered a 5-7% reduction in electricity peak demand through implementation of EE measures.

9. EE has a range of benefits, including peak and non-peak network demand reductions, rapid deployment compared to some generation, potential for lower wholesale energy prices, and air quality improvements. Given these benefits, there is a strong argument that further work would be warranted to assess how EE could be enabled to compete on a level playing field with other technologies across a range of markets.

10. Insights for further consideration are that EE projects would be more likely to come forward if they can leverage multiple sources of funding ("revenue-stacking"), reduce transaction costs through economies of scale, and implement more cost-effective M&V systems.

11. Given the potential, we published a Call for Evidence,[35] alongside the EDR evaluation,[36] which sought views on market barriers to EE in the UK, and how we can create new markets for EE, securing its role in the wider energy market, contributing to flexibility and becoming a reliable alternative to increased generation and network reinforcement.[37] The Call for Evidence was open until 25 September 2019 and we are currently analysing feedback.

34 https://www.gov.uk/government/publications/upgrading-our-energy-system-smart-systems-and-flexibility-plan
35 https://beisgovuk.citizenspace.com/energy-strategy-networks-markets/facilitating-energy-efficiency-call-for-evidence/
36 https://www.gov.uk/guidance/electricity-demand-reduction-pilot
37 https://www.gov.uk/government/consultations/facilitating-energy-efficiency-in-the-electricity-system

Low Carbon Contracts Company and Electricity Settlements Company

1. LCCC and ESC are responsible for helping government to deliver key elements of the CM and CfD schemes, designed to incentivise the significant investment required to keep energy supplies secure and affordable, as well as help meet our climate change targets.

2. LCCC, as counterparty to CfDs (including the Investment Contracts which have been transferred to LCCC[38]), enters into and manages long-term contracts with low carbon generators, managing difference payments for qualifying generation. The details of these projects are listed on the CfD Register, available on the LCCC website.[39]

3. The ESC is responsible for all financial transactions relating to the CM, including managing capacity payments, credit cover, penalties, and volume reallocation.

4. Both the LCCC and ESC are companies limited by shares and wholly owned by the Secretary of State for BEIS. The companies became operational on 1 August 2014 and operate within two main frameworks: EMR legislation (the Energy Act 2013 and the relevant regulations made under the Act) and the corporate and company law frameworks.

5. In the past year, there have been a number of highlights across CfD and CM schemes. These include:

    - Providing technical and contractual support to BEIS in the drafting of the contract documents for the third CfD Allocation Round, and advising BEIS on operational improvements to the CfD Standard Terms;
    - Supporting the third CfD Allocation Round allocation process, including the delivery and management of the joint Allocation Round microsite and launch event, developing a new CfD guide document, publication of guidance[40] and running three Master Classes for applicants;

[38] Investment contracts, which have been transferred to LCCC, are treated by virtue of regulation 2(4) of the Contracts for Difference (Electricity Supplier Obligations) Regulations 2014 as CfDs for various purposes. Any reference to a CfD in this document is to be treated as including any such Investment Contracts.

[39] https://www.lowcarboncontracts.uk/cfds

[40] https://www.lowcarboncontracts.uk/publications?f%5B0%5D=publications_category_taxonomy_term_name%3AGuidance%20documents

- Signing 12 new contracts with successful third Allocation Round projects and supporting applicants in their understanding of their contractual obligations;
- Providing support to BEIS officials on Carbon Capture Usage and Storage business model development and the work to develop the intermediary body function for the Nuclear Regulated Asset Base model;
- Supporting BEIS and stakeholders through the CM suspension process, including delivering the CM Voluntary Supplier Arrangements in April 2019;
- Publishing the Stress Event Guide in partnership with LCCC and National Grid, and on consultation with industry and other partners, as per agreement in May 2019.[41] This guide offers an up to date single point of reference to industry when they are managing a stress event. LCCC also published CM Restart guidance in August 2019 detailing what suppliers and capacity providers need to do when the CM restarts, and enabled an interim solution to enable BEIS and Ofgem policy intent that extends Final Consumption Levy extensions to as many licenced storage sites as possible; and
- Publishing a first set of CfD Dashboards[42] in response to the government's Energy Data Transparency Task Force agenda.

41 http://www.lowcarboncontracts.uk/sites/default/files/2019-05/Capacity%20Market%20Stress%20Event%20Guide%20v1_0.pdf

42 https://www.lowcarboncontracts.uk/dashboards

National Grid Electricity System Operator

1. National Grid Electricity System Operator (ESO) runs the electricity system in GB through the management of the electricity markets and is responsible for maintaining the transmission network.

2. National Grid ESO, as the EMR Delivery Body, has continued to play a central role in facilitating the CM and CfD regimes. The Delivery Body ran key stages of the third CfD Allocation Round, including the following:

    - It managed the registration and qualification of participants, together with valuations of applications and sealed bids as well as the sealed bids and auction process;
    - In order to support applicants and participants, the Delivery Body published guidance documents and videos. It also carried out pre-validation checks and hosted surgeries to assist participants with queries regarding the qualification and auction process;
    - The Delivery Body and LCCC developed a joint microsite which held all relevant material for customers. They also operated a joint query management process; and
    - Working with BEIS and LCCC, the Delivery Body also developed a joint engagement and communications plan for the end to end CfD process.

3. Regarding the CM, the Delivery Body carried out key activities relating to the auctions and agreement management:

    - In June 2019 it ran the Replacement T-1 Auction for delivery in 2019/20;
    - The Delivery Body also ran the prequalification process for the T-1, T-3 and T-4 auctions to be held in early 2020. As part of this, it held a launch event, provided guidance to potential applicants and carried out pre-validation checks;
    - The Delivery Body provided technical and regulatory support to BEIS during the suspension and restart of the CM. It has also facilitated the implementation of CM Rules changes to support the forthcoming T-1, T-3 and T-4 auctions, working collaboratively with the Settlement Company to deliver IS system change; and
    - The Delivery Body has also continued to manage capacity agreements, including the monitoring of delivery milestones.

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