

Workgroup Report

CMP300: Cost reflective Response Energy Payment for Generators with low or negative marginal costs

Overview: To ensure that the Response Energy Payment paid to or by generators with respect to a Balancing Mechanism Unit (BMU) with low or negative marginal costs is reflective of the cost or avoided cost of energy production.

Modification process & timetable	
1	<ul style="list-style-type: none"> • Proposal form • 17 May 2018
2	<ul style="list-style-type: none"> • Workgroup Consultation • 12 April 2019 - 22 May 2019
3	<ul style="list-style-type: none"> • Workgroup Report • 22 October 2020
4	<ul style="list-style-type: none"> • Code Administrator Consultation • 04 November 2020 - 04 December 2020
5	<ul style="list-style-type: none"> • Draft Modification Report • 10 December 2020
6	<ul style="list-style-type: none"> • Final Modification Report • 5 January 2021
7	<ul style="list-style-type: none"> • Implementation • 10 Working Days after Authority Decision

Have 5 minutes? Read our [Executive summary](#)
 Have 20 minutes? Read the full [Workgroup Report](#) document
 Have 30 minutes? Read the full [Workgroup Report](#) document and annexes

Status summary: The Workgroup have finalised the proposer’s solution as well as 1 alternative solution. They are now seeking approval from the Panel that the Workgroup have met their Terms of Reference and can proceed to Code Administrator Consultation. The Workgroup previously sought such approval at the November 2019 Panel.

This modification is expected to have a: **Medium impact** on Mandatory Frequency Response (MFR) providers and National Grid Electricity System Operator (ESO)

Governance route	This modification has been assessed by a Workgroup and Ofgem will make the decision on whether it should be implemented.	
Who can I talk to about the change?	Proposer: Paul Youngman, Drax Power Limited Paul.youngman@drax.com Phone: 07738802266	Code Administrator Chair: Paul Mullen paul.i.mullen@nationalgrideso.com 07794537028

Executive Summary

CMP300 seeks to improve the cost reflectivity of the Response Energy Payment (REP) as the current construction of the REP is not reflective of the costs or avoided cost of energy production for generators. It will achieve this by ensuring all BM Units with low or negative marginal costs, as a consequence of having a CfD FiT, are subject to the same REP methodology.

What is the issue?

The current methodology allows for the REP to be set by the Market Index Price (MIP) or at zero for “Non-Fuel” Balancing Mechanism (BM) units that have low or negative marginal costs.

The current construction of the REP does not reflect the cost or avoided cost of energy production for all generators. BM Units with low or negative marginal costs, as a consequence of having a CfD Feed in Tariff (FiT), are not managed the same as “non-fuel” BM Units that have equivalent low or negative marginal costs.

What is the solution and when will it come into effect?

Proposers solution:

Currently, the Reference Price which feeds into the calculation of the Response Energy Payment (REP) is set to £0/MWh for “non-fuel” cost BM Units only. Proposer suggests that this is set at £0/MWh for CfD BM Units as well.

Alternative solutions:

Market Participants will have an one-off choice for the REP to be set at £0/MWh (as per Proposer’s Solution) or at the prevailing MIP. This must be exercised within 28 calendar days of ESO’s letter asking them to indicate their choice. Where no choice has been made within 28 calendar days, the REP will be set at £0/MWh.

Implementation date:

Proposer of the Original and WACM1 has requested implementation to be 10 working days after decision from Authority.

If WACM1 is implemented, the ESO would, within 28 calendar days, write to all those relevant Users (those who, as per CMP300 Original, would be classified as being potential parties to whom CMP300 would apply) asking them to reply, within 28 calendar days, to the ESO confirming if they wished their REP (per asset) to be priced as either £0 per MWh or at the prevailing MIP (which could be positive or negative) as per the current baseline.

Workgroup conclusions:

The Workgroup concluded by majority (5 out of 6 votes) that both the Original and WACM1 better facilitated the Applicable CUSC Objectives than the Baseline (the current CUSC arrangements);

The Workgroup concluded by majority that WACM1 better facilitated the Applicable CUSC Objectives than the Original by 4 votes to 2; and

3 Workgroup Members voted that WACM1 was the best option, 2 votes were cast for the Original and 1 vote was cast for the Baseline.

What is the impact if this change is made?

The Proposer believes that the change will make the REP more cost reflective, and alleviate any potential distortion of the Mandatory Frequency Response (MFR) market.

Cost of implementing CMP300 would be negligible should implementation be aligned with the delivery of a new settlements system (~April 2022).

Interactions

Interactions with the Electricity Balancing Guideline (EBGL) Article 18

The Electricity Balancing Guideline (EBGL) is a European Network Code introduced by the Third Energy Package European legislation in late 2017. The EBGL regulation lays down the rules for the integration of balancing markets in Europe, with the objectives of enhancing Europe's security of supply. Article 18 of the EBGL states that TSOs such as the ESO should have terms and conditions developed for balancing services, which are submitted and approved by Ofgem.

There is a change process outlined in other EBGL Articles 4, 5, 6 & 10 on how a proposal should be submitted, approved by Ofgem, how it should be amended, and that there should be a one month public consultation.

ESO submitted terms and conditions for approval to Ofgem that included different sections of different GB network codes, BSC, CUSC and Grid Code, as well as some of the Standard Contract Terms (SCTs). This means that if any of those sections change through a modification, they will also legally have to go through a change process that meets the criteria set out in EBGL – **CMP300 is one such modification and therefore the Code Administrator Consultation will be run for 1 month.**

Contents

- **What is the issue?**
- **What is the solution?**
 - Proposer's solution
 - Workgroup considerations
 - Workgroup consultation summary
 - Legal text
- **What is the impact of this change?**
 - Workgroup vote
- **When will the change taken place?**
- **Acronyms, key terms and reference material**

What is the issue?

Certain generators are required by the Grid Code to provide a Mandatory Frequency Response (MFR) service to assist the ESO with keeping the electricity system frequency within a designated target of 50Hz and receive payments for doing so. These payments are designed to be cost reflective and are split between:

- a Holding Payment (HP) for being capable of providing response; and
- a Response Energy Payment (REP), which is a cost reflective utilisation payment designed to cover the costs of actual response energy.

Generators submit holding price (HP) tenders on a monthly basis to the ESO. The ESO then ranks these tender submissions in economic order.

- When generators are instructed to increase their output (Low Frequency Response), they receive a cost reflective REP payment; and
- When generators are instructed to reduce their output (High Frequency Response), they pay National Grid ESO to reflect the energy costs saved.

The REP is based either on the Market Index Price (MIP) or zero if the generator has low or negative marginal costs, and is classified “non-fuel”.

The classification of “non-fuel” was introduced by “*CMP237 Response Energy Payment for Low Fuel Cost Generation*” to ensure the REP better reflected costs. This was [approved by Ofgem on the 31 October 2016](#) to address an unintended consequence of the REP. The modification rectified an issue where generators with low or negative marginal costs were submitting HPs which were typically the highest in the market. The primary driver of this behaviour was that the REP, which was then based solely on MIP, did not reflect the actual and opportunity costs incurred for providing this service to the ESO.

The current methodology allows for the REP to be set by the Market Index Price (MIP) or at Zero for “Non-Fuel” Balancing Mechanism (BM) units that have low or negative marginal costs. However, it is not only “Non-fuel” BM Units that can have low or negative marginal costs.

The current construction of the REP does not reflect the cost or avoided cost of energy production for all generators. BM Units with low or negative marginal costs, as a consequence of having a CfD Feed in Tariff (FiT), are not managed the same as “non-fuel” BM Units that have equivalent low or negative marginal costs. The Proposer believes that this is a clear distortion that should be addressed.

What is the solution?

Proposer’s solution:

Currently, the Reference Price which feeds into the calculation of the Response Energy Payment (REP)¹ is set to £0/MWh for “non-fuel” cost BM Units only.

The Proposer suggests that all BM Units (including CFD BM Units) with a low or negative marginal cost the Reference Price which feeds into the calculation of the Response Energy Payment (REP) would be settled at £0/MWh.

¹ The REP is currently calculated by multiplying the response energy by the Reference Price

Workgroup Considerations

The Workgroup convened 4 times to discuss the perceived issue, detail the scope of the defect, devise potential solutions and assess the proposal in terms of the Applicable Objectives.

As part of this, the CMP300 Workgroup took into account the previous work done for CMP237 and assessed the terms of reference set by Panel. Ofgem addressed cost reflectivity of the REP within its decision document on CMP237, agreeing that low or negative marginal cost generators should have a REP set to zero. This was applied at the time to “non fuel” BM Units: Onshore wind, Offshore wind, Solar, Tidal and Wave. These BM Units reference price is set to zero when calculating the REP, to reflect their low or negative marginal cost.

Scope of cross code impacts:

The Workgroup made a firm assumption that no BSC modification would be required. Elexon have since confirmed this assumption on the basis that Low Carbon Contracts Company hold the list of parties who hold a CfD so there is no requirement for National Grid ESO to approach Elexon for this information.

Consideration of SOGL – Mandatory or Voluntary provision?

In line with the Terms of Reference Workgroup members considered interaction with the System Operator Guideline (SOGL); specifically if there were consequential changes to Mandatory Frequency Response.

During Workgroup meetings, it was highlighted that the Mandatory Frequency Response had not been changed. For other services, Grid Code Modification (GC0114) introduced a pre-qualification process for Frequency Containment Reserves (FCR), Frequency Restoration Reserves (FRR), Replacement Reserves (RR).

A Workgroup Member stated that SOGL applies to all new parties so this will capture anyone new connecting. Articles 155, 162, 168 of SOGL state that parties have to make an application to apply for the service and the application can be denied by the Transmission System Operator. It was clear from GC0114 that the services are voluntary and not mandatory, and therefore his view is that the question is whether or not mandatory services will continue or are in fact legally permissible.

It was noted by Workgroup members that the obligations for Mandatory Frequency Response have not yet been removed or altered in response to SOGL. There were no proposals during the workgroup stage to alter the MFR requirements as a consequence of SOGL and this mandatory service remains in place unchanged.

Workgroup Consultation to go to CfD BMU Parties

The Workgroup Consultation was sent to our CUSC distribution list but wasn't specifically issued to those parties who at the time been awarded a CfD contract and were listed on the “CfD Register” held on the Low Carbon Contract Company's website². As new parties have been awarded a CfD contract since the Workgroup Consultation was run, the Chair will contact the Low Carbon Contracts Company to circulate this Code Administrator

² <https://www.lowcarboncontracts.uk/cfds>

Consultation to all parties that have been awarded a CfD contract and are listed on the “CfD Register” as held on the Low Carbon Contract Company’s website³

National Grid ESO Workgroup member flagged that as a result of the Clean Energy Package there may be changes to REP payments in the future. However, the National Grid ESO Workgroup Member’s current view is that there aren’t any changes from the Clean Energy Package that impact CMP300.

Ensure no unintended consequences between non-fuel BMU and CfD BMU.

Neither the Proposer nor Workgroup Members nor Workgroup Consultation Respondents (although admittedly all Workgroup Consultation Respondents were Workgroup Members) foresee any unintended consequences emerging from CMP300.

Consideration to whether any values other than “zero” are appropriate

The Proposer stated that the intention of CMP300 is that the solution would replicate the application of CMP237 with a zero price as this is cost reflective.

The following question was posed to industry as part of the Workgroup Consultation:

“The workgroup considered 3 options.

- 1. The original figure of zero pounds per MWh*
- 2. The Market Price*
- 3. An optional price*

Do you favour an option; if so which option is your preference?

If this is option 3 how do you suggest this this would work?”

Following conclusion of the Workgroup Consultation, a Workgroup Member proposed an alternative which would allow market participants a one-off opportunity (for each of their relevant assets) to confirm to National Grid ESO if they wished to use either:

1. The original figure of £0 per MWh; or
2. The Market Price for that particular asset in terms of the applicable REP. Market Participants will have an one-off choice for the REP to be set at £0/MWh (as per Proposer’s Solution) or at the prevailing Market Price. This must be exercised within 28 calendar days of ESO’s letter asking them to indicate their choice. Where no choice has been made within 28 calendar days, the REP will be set at £0/MWh.

The Workgroup agreed that this was a valid Workgroup Alternative Code Modification (WACM) and would henceforth be known as WACM1.

Data provisions what can be shared, how will this work?

National Grid ESO stated that in order to implement the proposal of CMP300, National Grid ESO will need an up to date list of which generators have a valid CfD agreement that is updated as and when new CfD contracts are awarded or previously awarded CfD contracts

³ <https://www.lowcarboncontracts.uk/cfds>

are revoked. The Low Carbon Contracts Company (LCCC) has an online register (<https://www.lowcarboncontracts.uk/cfds>) which lists all those projects with a CfD contract.

From discussions with the LCCC, National Grid ESO are comfortable that new CfD contracts would be added to this register. However, it is not clear if or how projects that have CfDs removed would be shown on this register. Therefore NGESO are progressing on the assumption that revoked CfDs will be clearly shown on the register. National Grid ESO believes there could be a Sarbanes-Oxley Act (SOX) compliance risk ⁴for National Grid ESO as they do not own the data being published on the LCCC website but would be reliant on such data to determine who does and doesn't pay REP. Incorporation of the CMP300 solution within the new settlement systems minimises this SOX compliance risk.

Ofgem reason for approving CMP237 – based on economic rationale or the fuel type?

The Proposer believed it was based on economic rationale

The Proposer explained that the principle of applying a cost reflective REP was established in the Ofgem decision for CMP237. However, the decision of CMP237 did not apply to all low or negative marginal cost generators. The view of the Proposer is that Ofgem's consideration on CMP237 is directly associated with the economic case that the REP should be cost reflective and therefore should be applicable to units that have low or negative marginal costs as a consequence of a CfD.

*“Regarding costs covered under the REP, we accept the views expressed by the workgroup member that the intention of the payment mechanism is not only to cover fuel costs but all costs associated with energy production. **However, setting a REP to £0/MWh for providers with zero fuel costs would result in a utilisation payment that more accurately reflects these providers' costs. This change will result in increased certainty for this class of generator, allowing them to submit HPs based on their actual positions which is likely to enhance competition within the MFR market.**”*

The National Grid ESO Workgroup Member believed it was based on fuel type

The National Grid ESO Workgroup Member agreed that all fuel types do have marginal costs. Ofgem's decision letter on CMP237 proposed to exempt generators that have been classed as having zero fuel costs from receiving or paying the REP. This creates a distortion of the market as such generators have to increase their holding price tender to counter act REP payments they may have to pay the ESO when providing MFR. As the REP payments are designed to fairly compensate against fuel costs when providing both high or low frequency response and these generators had no attributable fuel costs it was deemed a barrier for them.

In the view of the National Grid ESO Workgroup Member the decision to approve CMP237 was taken due to fuel/technology type. In the view of the National Grid ESO Workgroup Member the generators mentioned in CMP300 have an attributable fuel cost to them and it is not clear how an asset with a CfD in place has a similar barrier to entry or is losing out

⁴ National Grid ESO's financial processes are subject to the SOX Act 2002, which requires management's opinion on the effectiveness of internal control over financial reporting – see page 14 of National Grid ESO's Annual Compliance Report - <https://www.nationalgrideso.com/document/171471/download>

in a similar way. The Proposer highlighted the Ofgem decision and specifically the cost of reducing output for a CfD generator:

'This generator also has to potentially forego renewable subsidies (e.g. RO, CfD and FITs3) as a result of reducing output. As a result, these generators are effectively submitting HP tenders to price themselves out of consideration which could be inhibiting competition within the MFR market.'

Benefits / Costs

The Proposer explained that he believes this modification to have a marginal cost on the non-CfD industry participants. However, the Proposer couldn't give a view on wider system costs. The National Grid ESO representative noted that a full Cost Benefit Analysis may not be appropriate in this case. However, they urged parties to provide any relevant commercially sensitive information about their plant's marginal cost directly to Ofgem to support the decision making process.

The Workgroup previously sought such approval at the November 2019 Panel; however, a Panel member raised concerns that the Workgroup Report didn't really explain to what extent a CfD plant loses out at the moment under the current arrangements, as it doesn't set out the payments that the affected generator receives/pays/forgoes when it provides response.

The Proposer responded that CMP300 is premised on the logical basis that £0/MWh is a better approximation of the CfD plant's marginal cost than the MIP (as the plant is getting a subsidy). This supports the principle of cost reflectivity. To prove this is the case, parties would have to reveal their plant's precise marginal cost, which is not appropriate in a public report however they noted that this could be addressed through a confidential response to Ofgem.

The Workgroup agreed the following table to illustrate the current distortion and this supports the conclusion to reduce the Reference Price/MIP, which feeds into the calculation of the REP, to £0/MWh.

The table illustrates the impact for all BM Units and highlights the difference in the treatment of BM units with CFD. The largest component of Non CFD providers Short run marginal cost is the fuel cost. For CFD providers is the loss of income from the CFD. The table below highlights the inconsistency in the treatment of BM units with CFD.

Altering the calculation so that all CFD BM Units with a low or negative marginal cost had a REP of £0 would be more reflective of the costs and reduced CFD income those sites incur.

Current scenario			For every additional MWh a party with a CfD generates for low frequency response	For every MWh less a party with a CfD generates for high frequency response	Impact
Non	CFD	BM	Increased SRMC (fuel costs) and receives MIP *1.25	Reduces SRMC (fuel costs) and pays MIP *0.75.	MIP based pricing broadly reflective of fuel cost based on MIP – No loss incurred through

			provision of either LFR or HFR .
CFD BM Units with a low or negative marginal cost	Incentivised under normal conditions to maximise CfD income / energy flows. MIP*1.25	Reduces flows losing the CFD income. Saves any marginal fuel costs but pays MIP*0.75	These units pay MIP*0.75 for any downturn as well suffering reduced income from their CFD when providing HFR. Units incentivised to generate so marginal ability to provide LFR. Not as cost reflective as a REP of £0/MWh.
“Non-fuel” CFD BM Units that can have low or negative marginal costs	No fuel costs and receive CfD Revenue up to Strike Price based on REP of £0/MWh (rather than MIP as more reflective of SRMC)	No fuel costs will pay to national grid based on REP of £0/MWh. (rather than MIP as more reflective of SRMC)	Approach consistent with Ofgem decision CMP237 that removed the distortion for non-fuel CFD BM Units.

Workgroup Consultation Summary

The Workgroup held their Workgroup Consultation between 12 April 2019 and 22 May 2019 and received 3 responses. The full responses can be found in Annex 3 but a summary of the key points is set out below:

The Workgroup Consultation responses are set out in full in Annex 3 of this Workgroup Report; however, the key points are summarised below:

- 2 respondents believe that the proposed change better facilitates the CUSC objectives than the Baseline. However, 1 of these respondents favours an optional pricing approach as it allows market participants to provide their own approach in terms of cost reflective pricing. This has subsequently been raised as WACM1;
- The ESO respondent did not support the proposed implementation approach as a system change (with a significant lead time) is required and stated that the ESO's implementation costs would be £100 – 200K and asked the Proposer to justify the consumer benefit and why this change should be prioritised; and
- 2 respondents agreed that, in their opinion, Ofgem made their decision on CMP237 on economic rationale and not the fuel type. The ESO respondent disagreed and stated that the economic rationale was driven by the fuel type.

Legal text

The legal text for this change can be found in Annex 5.

What is the impact of this change?

MFR Providers

This change will improve competition in the MFR by ensuring that the REP is cost reflective for all MFR providers and all generators with a low or negative marginal cost are treated equally.

Without this change:

- The REP payment will continue to not accurately reflect the generator's cost, or avoided cost for some technologies with a CfD / FiT due to the low or negative marginal cost for these BM Units;
- If a renewable generator was instructed to provide High Frequency Response (reduce output), it would be required to pay the ESO for the cost that was avoided in reducing its energy production when no costs would actually have been incurred. This generator also has to potentially sacrifice renewable subsidies (e.g. CfD FiT) as a result of reducing output. As such, it is not cost-reflective for them to have to pay the ESO for an avoided cost that does not exist.

ESO

To implement this change, ESO identified there would potentially need to be a system change. However, a manual workaround could be accommodated should implementation be earlier than April 2022 when a new settlements system will be delivered. Where there is alignment with this new settlements system then the cost of implementing CMP300 would be negligible as it can be included into this suite of changes. It would also lower the compliance risk impacts.

Consumers

By ensuring that the REP is more cost reflective for all MFR providers this will better facilitate competition for the provision of frequency response - this should consequently reduce the overall cost to the end consumer.

Workgroup vote

The Workgroup met on 31 October 2019 to carry out their Workgroup vote. The 6 Workgroup Members voted and the full Workgroup vote can be found in Annex 4. The tables below provide:

- a summary of how many Workgroup members believed the Original and WACM1 were better than the Baseline; and
- a summary of the Workgroup members' views on the best option to implement this change.

The Applicable CUSC non-charging Objectives are:

CUSC non-charging objectives

- The efficient discharge by the Licensee of the obligations imposed on it by the Act and the Transmission Licence;
- Facilitating effective competition in the generation and supply of electricity, and (so far as consistent therewith) facilitating such competition in the sale, distribution and purchase of electricity;
- Compliance with the Electricity Regulation and any relevant legally binding decision of the European Commission and/or the Agency *; and
- Promoting efficiency in the implementation and administration of the CUSC arrangements.

*Objective (c) refers specifically to European Regulation 2009/714/EC. Reference to the Agency is to the Agency for the Cooperation of Energy Regulators (ACER).

CMP300 - Assessment of the Original and WACM1 vs the Baseline (the current CUSC arrangements)

As shown by the table below, the Workgroup concluded by majority (5 out of 6 votes) that the Original and WACM1 better facilitated the CUSC Objectives than the Baseline.

Proposed Solution	Of the 6 votes, how many said that this option was better than the Baseline
Original	5
WACM1	5

The Workgroup concluded by majority that WACM1 better facilitated the Applicable CUSC Objectives than the Original by 4 votes to 2.

CMP300 Best Option

3 Workgroup Members voted that WACM1 was the best option, 2 votes were cast for the Original and 1 vote was cast for the Baseline.

Workgroup Member	Company	BEST Option?	Which objective(s) does the change better facilitate? (if baseline not applicable)
Paul Youngman	Drax Power Limited	Original	(a), (b), (d)
Garth Graham	SSE Generation Ltd.	WACM1	(b)
Grahame Neale (Alternate for Jamie Webb)	National Grid ESO	Baseline	n/a
Ewen Ellen	Scottish Power	WACM1	(b)
Karl Maryon	Haven Power	Original	(a), (b), (d)
Robert Longden	Cornwall Insight Ltd.	WACM1	(b)

When will this change take place?**Implementation date:**

The view of the Proposer was that CMP300 would require being implemented at the earliest opportunity to ensure there is a level playing field for all generators providing MFR. The Proposer of the Original and WACM1 has requested implementation to be 10 working days after decision from Authority.

If WACM1 is implemented, the ESO would, within 28 calendar days, write to all those relevant Users (those who, as per CMP300 Original, would be classified as being potential parties to whom CMP300 would apply) asking them to reply, within 28 calendar days, to the ESO confirming if they wished their REP (per asset) to be priced as either £0 per MWh or at the prevailing Market Price (which could be positive or negative) as per the current baseline.

The National Grid ESO representative would prefer implementation of CMP300 to be aligned with the delivery of the new settlements system in ~ April 2022.

Acronyms, key terms and reference material

Acronym / key term	Meaning
Baseline	The CUSC as it is currently
BM	Balancing Mechanism
CfD FiT	Contracts for Difference Feed in Tariff – difference payments are made by either LCCC to the generator or vice versa depending on whether the Reference Price is greater than or less than the 'strike price'.
LCCC	Low Carbon Contracts Company whose primary role is to manage CFDs with low carbon generators throughout their lifetime.
MIP	Market Index Price
REP	Response Energy Payment
Reference Price	A measure of the average market price for electricity in the GB market
Strike Price	A price for electricity reflecting the cost of investing in a particular low carbon technology

Reference material:

1. [CMP237 Ofgem decision](#)

Annexes

Annex	Information
Annex 1	CMP300 Proposal Form
Annex 2	CMP300 Terms of Reference
Annex 3	CMP300 Workgroup Consultation Responses
Annex 4	CMP300 Workgroup Vote
Annex 5	CMP300 Legal Text