nationalgrid

Stage 03: Second Workgroup Consultation

Connection and Use of System Code (CUSC)

CMP237

'Response Energy Payment for Low Fuel Cost Generation'

What stage is this document at?

01	Initial Written Assessment
02	Workgroup Consultation
03	**Second Workgroup Consultation**
04	Workgroup Report
05	Code Administrator Consultation
06	Draft CUSC Modification Report
07	Final CUSC Modification Report

CMP237 seeks to take into account the different costs of generators with low or zero energy costs through the calculation of the Response Energy Payment.

This document contains the discussion of the Workgroup which formed in October 2014 to develop and assess the proposal. This document also contains details of the Workgroup Consultation responses and the Workgroup Consultation Alternative Request received in the response to the previous Consultation.
Any interested party is able to make a response in line with the guidance set out in Section 9 of this document.

Published on:	**24 March 2015**
Length of Consultation:	**20 Working days**
Responses by:	**23 April 2015**

Low Impact:
Generators

Contents

About this document

This document is the second CMP237 Workgroup Consultation which seeks the views of CUSC and interested parties in relation to the issues raised by the Original CMP237 CUSC Modification Proposal which was raised by National Grid Electricity Transmission Plc and developed by the Workgroup. The Workgroup feel that the solution to the defect outlined in the Original Proposal and potential alternatives have altered significantly since the first Workgroup Consultation so are re-consulting with the Industry.

Parties are requested to respond by 5pm on 23rd April 2015 to cusc.team@nationalgrid.com using the Workgroup Consultation Response Pro-forma which can be found on the National Grid website via the following link: http://www2.nationalgrid.com/UK/Industry-information/Electricity-codes/CUSC/Modifications/CMP237/

Document Control

Version	Date	Author	Change Reference
0.1	02/12/2014	Code Administrator	Draft Consultation for Workgroup comment
0.2	12/12/2014	Code Administrator	Final Consultation for Workgroup comment
1.0	19/12/2014	Workgroup	Workgroup Consultation

Any Questions?

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			to Industry
2.0	11/03/2015	Code Administrator	Draft second Consultation for Workgroup comment
2.1	24/03/2015	Workgroup	Second Workgroup Consultation to Industry

1 Summary

1.1 This document describes the Original CMP237 CUSC Modification Proposal (the Proposal), summarises the deliberations of the Workgroup and the options for potential Workgroup Alternative CUSC Modifications (WACMs). Prior to confirming any alternative proposals the Workgroup are seeking views on the options they have identified, what is the best solution to the defect and also any other further options that respondents may propose.

1.2 CMP237 was proposed by National Grid Electricity Transmission Plc and submitted to the CUSC Modifications Panel (the Panel) for their consideration on 26th September 2014. A copy of this Proposal is provided in Annex 1. The Panel decided to send the Proposal to a Workgroup to be developed and assessed against the CUSC Applicable Objectives. The Workgroup is required to consult on the Proposal during this period to gain views from the wider industry (the Workgroup Consultation). Following the first Consultation, the Workgroup considered all responses and the Workgroup Consultation Alternative Request which were received. The Workgroup felt that the Original solution and potential alternatives have changed significantly since the first Consultation so are re-consulting with the Industry. Following this second Workgroup Consultation, the Workgroup will consider any responses, vote on the best solution to the defect and aim to report back to the Panel at the May 2015 Panel meeting.

1.3 The Workgroup first met on 7th November 2014. A copy of the Workgroup Terms of Reference is provided in Annex 2. The Workgroup have considered the issues raised by the CUSC Modification Proposal and as part of their original discussions, the Workgroup had noted that there were number of potential solutions to the defect CMP237 seeks to address. These potential options for change are highlighted within the Workgroup Alternatives in Section 5 of this document which gives an overview of Workgroup discussions prior to the first Workgroup Consultation.

1.4 Following the first Workgroup Consultation, the Workgroup considered all responses and the Workgroup Consultation Alternative Request which were received. The Workgroup felt that the Alternative Request could be a practical option and that it highlighted an additional defect which the Workgroup aims to form a solution to as part of CMP237. The discussions following the Workgroup Consultation are captured within Section 5 of this report.

1.5 The Proposal seeks to take into account the different costs of generators with low or zero energy costs by setting the Response Energy Payment at £0/MWh.

1.6 The first Workgroup Consultation closed on 21st January 2015 and 5 responses (including 1 late response) were received. A Workgroup Consultation Alternative Request was also received in response to the Consultation.

1.7 This Workgroup Consultation has been prepared in accordance with the terms of the CUSC. An electronic copy can be found on the National Grid Website http://www2.nationalgrid.com/UK/Industry-information/Electricity-codes/CUSC/Modifications/CMP237/ along with the Modification Proposal form.

2 Background

2.1 All licensed generators are obliged under the Grid Code to provide the Mandatory Frequency Response service (an automatic change in a generator's Active Power output in response to an increase/decrease in System Frequency from the Target Frequency of 50Hz). Currently, when instructed to provide Frequency Response, a generator is paid an hourly Holding Payment and then either (i) pays or (ii) is paid a Response Energy Payment (REP) for their net delivery per settlement period.

2.2 The Holding Prices vary and are submitted by generators on a monthly basis.

2.3 The REP is defined within the CUSC. Conceptually the REP has been designed to reflect the cost of providing the energy. The REP is made for the expected volume of frequency response delivered. It is intended to compensate generators for the Energy Imbalance exposure under the Balancing and Settlement Code (BSC) due to providing frequency response. The mechanism also includes an element to compensate for the cost or avoided cost of energy production; which includes the associated cost of fuel. The REP is based on the Market Index Price (MIP) with different ratios: -0.75 for High Frequency (reduction in Active Power) and 1.25 for Low Frequency (increase in Active Power). The negative ratio for High Frequency indicates that the REP is paid by the generator as it is anticipated that the generator has saved money by not generating, including using less fuel. The positive ratio for Low Frequency Response indicates that the REP is paid to the generator as it is anticipated that the generator will incur additional costs, including by using more fuel.

2.4 This methodology was agreed during a time when the majority of generators providing frequency response had fuel costs that made up a reasonable proportion of the cost of providing frequency response; although it was recognised that in implementing the methodology there could be more additional frequency response available from a variety of providers such as non-conventional sources of generation which would add to available supply and liquidity in the mandatory frequency response market. Therefore, the current methodology is tailored to these conventional generators and does not consider the different costs of generators with low or zero energy costs.

2.5 An example of this would be a wind farm that has a financial incentive to output at full capacity as they receive ROCs which are paid on a MWh output basis. If this unit were to be instructed to provide High Frequency Response, it would pay REP for any consequent reduction in their energy output, although in this case, the wind farm would have no avoided fuel cost to offset this against. There is a reverse effect for Low Frequency Response; the wind farm would first need to be bid down (its output reduced through acceptance of a bid in the balancing mechanism) in order for it to have the headroom to be able to provide Low Frequency Response. The bid price that the generator submits for this would include their lost ROC revenue, and when the wind farm provides the Low Frequency Response it would also get paid the REP despite having used no additional fuel.

2.6 The costs and benefits for Conventional and Low Fuel Cost plant are illustrated in the table below;

Generator type	Response type	Cost	Benefit
Conventional	High Frequency	MIP* -0.75	Avoided fuel
	Low Frequency	Used fuel reduced output (if required)	MIP*1.25 BOA payment (if required)
Low Fuel Cost	High Frequency	MIP* -0.75	-
	Low Frequency	Reduced output	BOA payment MIP *1.25

Table 1 – Costs and benefits for generators providing Frequency Response

2.7 It should be noted that when a generator has been dispatched for frequency response, they are not subject to imbalance payments (or cashout) as a result of changes in output from their notified position or position post-BOA.

2.8 The current methodology therefore provides a measure of cost mitigation for conventional fuel-stock generators by balancing the avoided/used fuel costs against the REP, but does not appropriately reflect the cost for renewable generators. With the increasing installed capacity of these generators, the Proposer believes the calculation of the REP needs to be re-defined to accommodate a diverse range of frequency response service providers.

3 Modification Proposal

3.1 CMP237 proposes that the REP calculation be retained for conventional generators or generators that have a fuel cost (e.g. fossil fuel or biomass). For all other generators, the REP would be settled at £0/MWh. This will ensure that the REP better reflects the cost of changing a generator's energy output in providing frequency response, whether that change involves a fuel cost or not. The effect of this is illustrated in the following table:

Generator type	Response type	Cost	Benefit
Conventional	High Frequency	MIP* -0.75	Avoided fuel
	Low Frequency	Used fuel reduced output (if required)	MIP*1.25 BOA payment (if required)
Low Carbon	High Frequency	MIP* -0.75	-
	Low Frequency	Reduced output	BOA payment

Table 2 – Costs and benefits for generators providing Frequency Response under Original Proposal

3.2 The Proposer considers this proposal to be a pragmatic step that should be straightforward to implement at minimal cost. By removing the REP from non-conventional generators the proposal removes the financial penalty as a result of assumed fuel costs, whilst ensuring that there would be minimal impact for existing fossil fuel generators.

4 Summary of Workgroup Discussions prior to first Workgroup Consultation

Presentation of Original Proposal

4.1 At the first Workgroup meeting, the Proposer presented the background and reasons for raising CMP237. The Original Proposal form can be found in Annex 1 and the supporting presentation can be found on the National Grid Website[1].

4.2 The Proposer noted that the System Operator (SO) has a statutory duty to maintain the secure operation of the National Electricity Transmission System (NETS) and does this by managing the frequency of the network. The system is designed to operate at 50Hz and the SO has set an upper and lower operational limit of 50.2Hz and 49.8Hz. The Proposer stated that, in order to remain within these limits, the SO needs to ensure that generation equals demand at all times; if generation is greater than demand, the frequency increases and if generation is less than demand the frequency decreases.

4.3 The Proposer explained that in order to stabilise the frequency to 50Hz, the SO purchases frequency response services from Users. Users must provide prices for Mandatory Frequency Response (which is required from all licenced BMUs in accordance with the Grid Code). Users also have the option of providing Commercial Frequency Response (which is procured through a monthly tender process). One Workgroup member asked whether Generators may be instructed to provide response to a frequency set point higher than 50Hz if there is a significant system loss. The Proposer clarified that Generators were not instructed to do this anymore, but that historically it had happened in order to maintain clock speeds.

4.4 Only Generators that are classed as 'large' generators (as defined within the Grid Code) and therefore have a Mandatory Services Agreement (MSA) are required to be able to provide Mandatory Frequency Response (it should be noted that parties can request to sign an MSA if they so wish). One Workgroup member noted that the definition of the different sizes of generators will change with the introduction of the EU Network Codes. The Proposer also clarified that once a generator is dispatched to provide Frequency Response, they are not exposed to Cash Out charges.

4.5 The Proposer noted that pricing for Mandatory Frequency Response is made up of two payments; the Holding Payment (which covers the cost of being ready to provide response) and the Response Energy Payment (REP) (which covers the cost of changes in energy production). It was noted that this Modification only deals with the Response Energy Payment. There may be a number of effects of changing the REP, one of which being that it may lead to parties amending their Holding Payments.

4.6 The Proposer explained that Holding Payments are posted by individual generators on a monthly basis for Primary, Secondary and High Frequency Response[2], whereas the REP is based on the Market Index Price (MIP) and is calculated as follows;

- For an increase in output, a generator will receive the MIP*1.25

[1] CMP237 Workgroup Information on National Grid website http://www2.nationalgrid.com/UK/Industry-information/Electricity-codes/CUSC/Modifications/CMP237/

[2] ϕ Primary and Secondary frequency response: the automatic response to a decrease in system frequency. Primary response must be provided within 10 seconds and be sustainable for at least a further 20 seconds. Secondary response must be provided within 30 seconds and be sustainable for at least a further 30 minutes. High frequency response: the automatic response to an increase in system frequency. High frequency response must be provided within 10 seconds of the frequency change.

- For a decrease in output, a generator will pay the MIP*0.75

4.7 The Proposer explained that the value of these multipliers in the REP (1.25 for low frequency response and 0.75 for high frequency response) were identified from historical analysis undertaken as part of CAP107 'Redefinition of Response Energy Payment (REP) for Mandatory Frequency Response'. They represent the average spread between the System Buy Price (SBP) and System Sell Price (SSP), adjusted to achieve the smallest net monthly REP and were introduced as it was generally agreed at the time that this option would address the degree of risk associated with the exposure of National Grid to the spread between SBP and SSP and generators' exposure to more extreme imbalance prices in any given Settlement Period.

4.8 The Proposer noted that, in their view, the purpose of the REP is to cover changes in fuel costs as a result in changing output to provide frequency response and stated that this is not cost reflective for plant that does not pay to generate, e.g. wind, solar and tidal. For a wind generator providing high frequency response, there is a cost to the generator in reducing their output but no fuel saving to balance this cost. For a wind generator providing low frequency response, the generator will increase its output and get paid for the additional fuel it uses, even though the generator did not incur any costs in obtaining that fuel. The Proposer believes that this is deterring participation in the Frequency Response market by members of a growing market segment.

4.9 One Workgroup member asked whether the System Operator had ever instructed a wind generator to provide Frequency Response. The Proposer clarified that in the past, wind generation have been bid down in the Balancing Mechanism (BM) for energy reasons, and then have been dispatched for Frequency Response as a secondary measure. The Proposer noted that more recently (7th November 2014) several wind plant were placed into Frequency Sensitive mode, however this is the only instance of this happening[3]. Another Workgroup member asked whether it would be possible to determine how many times a wind generator had been given a BOA and then asked to provide Frequency Response. The Proposer noted that it would not be feasible to provide this information as it would require going back through all control room logs and cross-referencing them against every action taken on a wind farm to identify whether there were any secondary actions taken.

4.10 The Proposer presented three graphs which showed that the majority of plant providing primary, secondary and high frequency response are pricing themselves at less than £10/MWh. However, a proportion of these are submitting prices higher than £10/MWh and even higher than £100/MWh, the majority of which were identified as being wind plant. One Workgroup member noted that although there is a large amount of wind generation pricing themselves high, there are other (non wind) generation types providing prices as high as wind. These graphs can be seen in figures 1, 2 and 3;

[3] Data for this can be seen in the 2014-15 Frequency Response Volumes D9 spreadsheet: http://www2.nationalgrid.com/UK/Industry-information/Electricity-transmission-operational-data/Data-explorer/Outcome-Energy-Services/

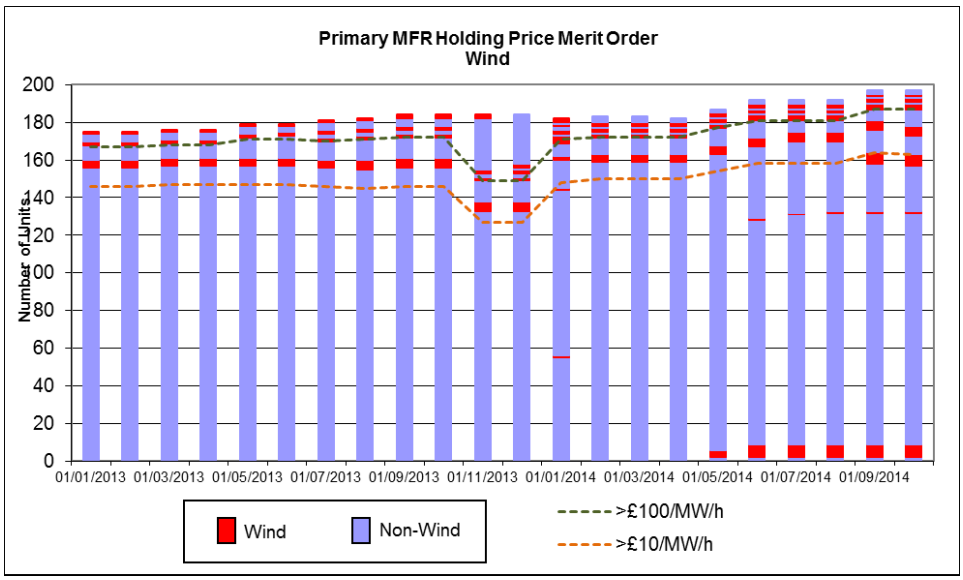

Figure 1 - Wind holding price for Primary frequency response

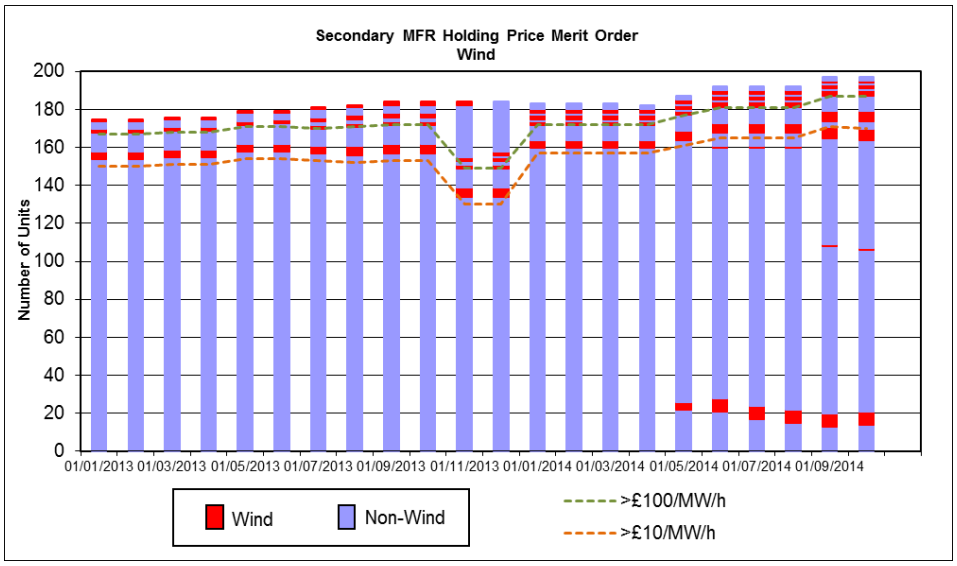

Figure 2 - Wind holding prices for Secondary frequency response

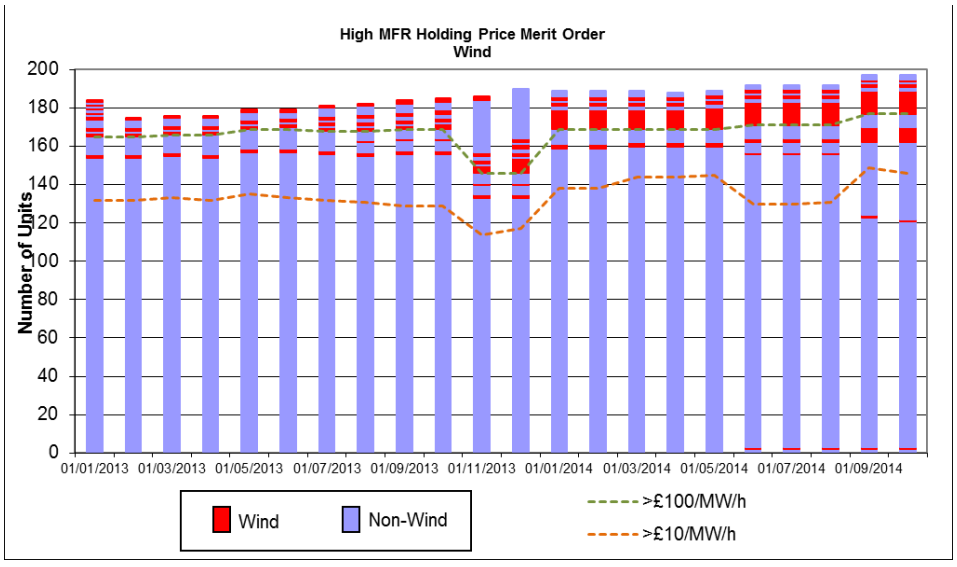

Figure 3 - Wind holding prices for High frequency response

4.11 One Workgroup member noted that on all three graphs presented, there is an anomaly in winter 2013 where a larger proportion of plant submitted prices higher than £100/MWh and asked if there was any reason for this. The Proposer noted that after investigation, no clear reason could be found for the behaviour as the plants involved were CCGT and coal from several different companies in different parts of the country. This is the first year that the behaviour has been exhibited, and therefore it is suspected that the values may have been default inputs into the FRPS system.

4.12 The Proposer also presented a graph (Figure 4 below) which illustrated the submitted holding prices per generator against the estimated BM cost to move the generator to the assumed most responsive point for the 30th September 2014. The size of the bubbles on the graph represents the available response. This graph can be seen below. The proposer noted that the graph was a snapshot, and the data for the whole year had been created as a video. The Workgroup agreed that this should be available alongside the Workgroup Consultation. If you wish to receive this video, please request this from the Code Administrator (contact details on page 2 of this report).

4.13 The proposer noted that the graph was intended to illustrate the total costs associated with instructing wind for response, as they typically have to be bid down in the BM before being instructed to provide response. For consistency, estimated BOA prices have been included for non-wind generation, however care should be taken in comparing wind with non-wind in the chart as instructing non-wind generation does not typically require an associated BOA.

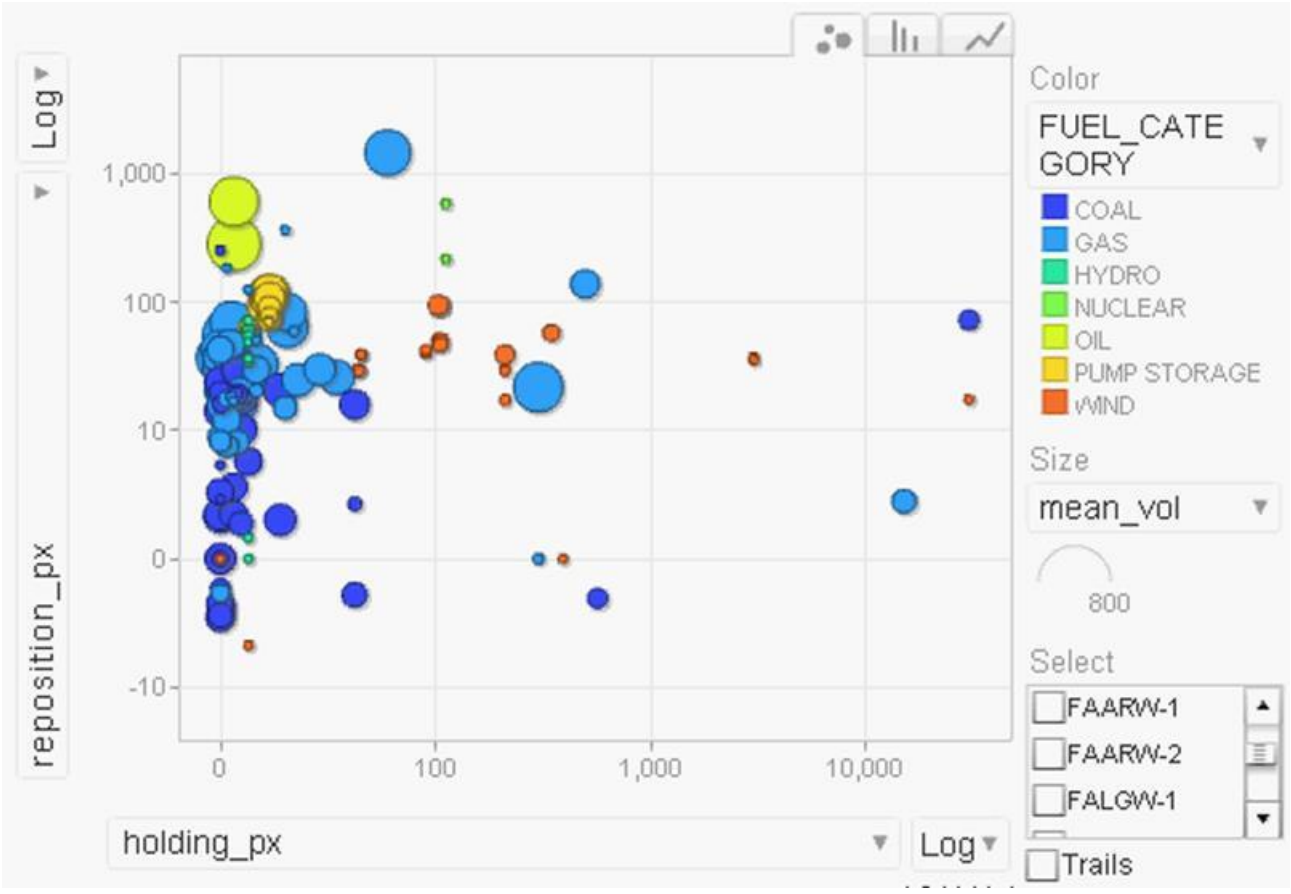

Figure 4 - submitted holding prices per generator against the estimated BM cost to move the generator to the assumed most responsive point for the 30th September 2014

4.14 A Workgroup member suggested that it would be useful to see the difference between high and low wind speeds and how this affects the BOA prices. After investigation it was identified that this would be a significant piece of work as it would require locational wind speed and historical BOA data to be combined per wind farm per settlement period. Whilst

it is technically feasible to do so, the Proposer considers it to be outside the scope of the Workgroup as it is not related to the REP or holding prices (which are submitted on a monthly basis).

4.15 One Workgroup member noted that on fig 4 above, the general trend for generation with a fuel cost tended to follow the Y axis, whereas those without a fuel cost tended to follow the X axis. The Workgroup member stated that as hydro generation clearly following the Y axis like other conventional plant, this supported the view that they should be considered as having a fuel cost for the purpose of this Modification. It was noted, however, that there may be other reasons why a group of generators had similar holding prices; e.g. plant with similar construction may have similar sunk costs to recover, and that this was not direct evidence of the existence of a short-term fuel cost.

Which generators should be classed as low fuel cost generation under CMP237?

4.16 The Proposer had initially categorised all GB generation that are able to provide Frequency Response into two groupings; namely (i) 'Fuel Cost' and (ii) 'No Fuel Cost'; and invited views from the Workgroup on the table 3 below.

Fuel Cost	No Fuel Cost
Gas	Onshore Wind
Coal	Offshore Wind
Oil	Solar
Nuclear	Tidal
Biomass	Wave
Electricity Storage Technologies (inc. pumped storage, batteries)	Hydro

Table 3 – Fuel cost / no fuel cost categorisation

4.17 Battery technology was originally presented to the Workgroup as having no fuel costs, however a Workgroup member noted that a battery is similar to a pumped storage generator in that there is a cost associated with taking the electricity from the system in the first place in order to be able to provide it back under Frequency Response conditions, and therefore this was equivalent to a fuel cost. The Proposer agreed that under the Original Proposal, battery technology would be classed as having a fuel cost. Another Workgroup member suggested that with new types of generation being introduced within Europe, there could be a situation where there is a wind generator (with no fuel cost) and a battery (with a fuel cost) connected behind the same meter. It was therefore agreed to include 'battery' in a new classification in the table above of 'Electricity Storage Technologies' for clarification. This would also include pumped storage, and would be limited to storage that is a separate BMU.

4.18 The chart of submitted holding prices per generator against the estimated BM cost was produced which highlights the No Fuel Cost generators as per the Original Proposal.

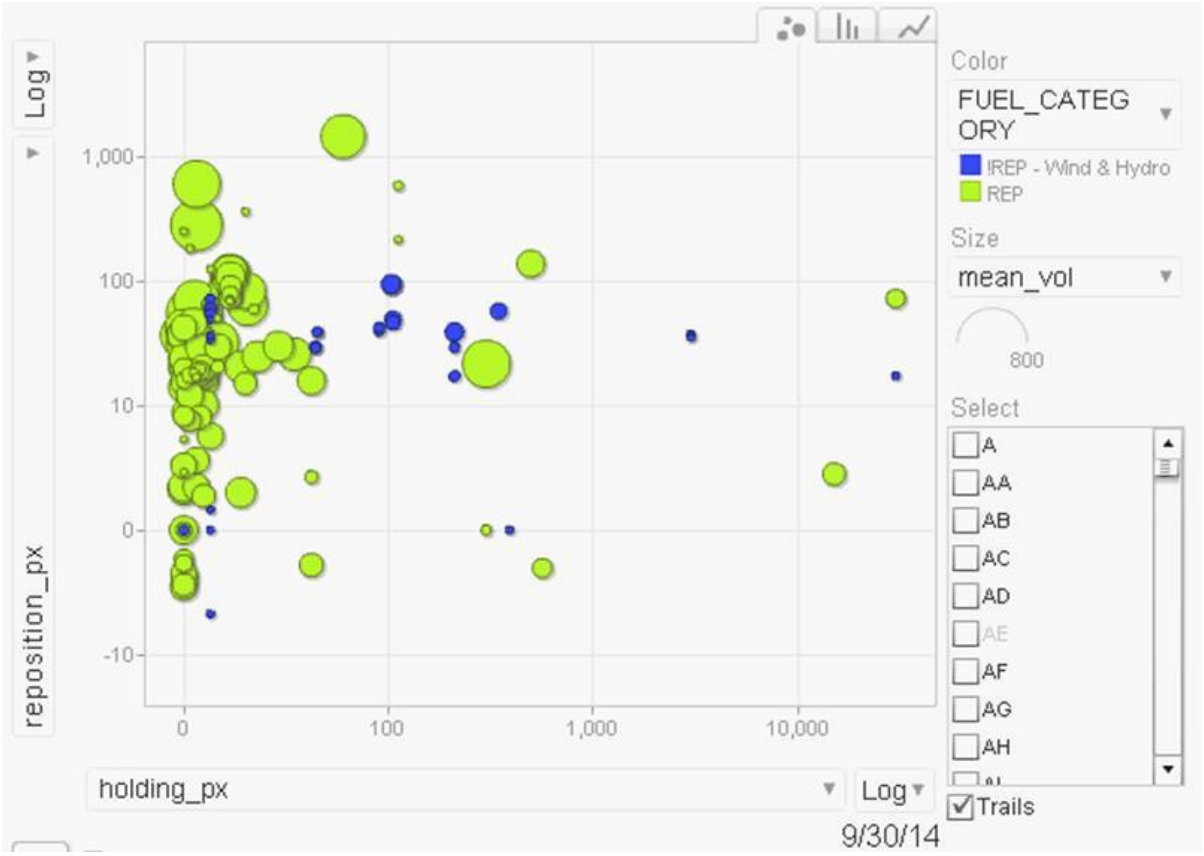

Figure 5 – Submitted holding prices per generator against the estimated BM cost – No fuel cost generators under Original proposal.

4.19 One Workgroup member questioned whether demand should be included within table 3. The Proposer clarified that although there are no demand sites providing mandatory frequency response, they would be included in the no fuel cost group. The Workgroup agreed that there were no other generation types that should be included within the table 3 in paragraph 4.16.

4.20 One Workgroup member suggested that Hydro (storage) generation should be included in the table above as having a fuel cost. The Workgroup member explained that the fuel used to provide Mandatory Frequency Response from a Hydro (storage) unit has both an energy production cost associated with it in terms of its handling and holding as well as a (lost) opportunity cost because if it is not used for providing Mandatory Frequency Response, it can be sold into the energy market at a later date. This is unlike, for example, wind generation where the fuel cannot, per se, be stored. The Proposer agreed that there is a missed opportunity cost with the fuel stored, however this should not be classed as a fuel cost. The Proposer considered that the water collected and stored behind the Hydro station has a value, in that it can be used to generate electricity, but not a cost, in that rain and river water is free to collect.

Potential options for change

4.21 Based on discussions within the first meeting (as set out in paragraph 4.17), one Workgroup member suggested that a potential alternative to the Original Proposal should be to have Hydro (storage) being classed as having a fuel cost (with all other generation

types classified as per the Original Proposal) and the Workgroup agreed to consider this as a potential option for change.

4.22 One Workgroup member noted that Table 3 only takes account of current technologies in GB and in order to future proof this Modification, the Workgroup may wish to consider alternative technologies which are being used within Europe but are yet to be used in GB. In order to do this, the Workgroup member suggested a potential option for change which specifically referenced technologies such as tidal barrage and generating plant with batteries as having a fuel cost. Another Workgroup member noted that these technologies are currently being used in France and Germany and could potentially be introduced to GB in coming years. The Workgroup agreed to consult on this potential option for change.

4.23 One Workgroup member also suggested that generators should be allowed to opt-in or opt–out of the REP calculation, therefore deciding themselves whether they have a fuel cost or not. It was clarified that only those generators classified as having no fuel cost in Table 3 would have a choice on how their REP is calculated and that this would be a 'binary' choice of either (i) pay or paid MIP * -0.75/1.25 (the 'status quo') or (ii) pay or paid £ zero (the CMP237 Original approach). The Workgroup agreed that this could be a potential alternative to discuss. The Workgroup noted that this decision, by the categorised no fuel cost generator, could be made either monthly, yearly or on a one off basis. The Ofgem Representative asked whether there would be a consumer benefit from allowing this choice for generators. The Proposer took an action to provide cost benefit analysis on how optionality may impact prices.

4.24 The Workgroup decided to apply this choice to the three options outlined so far and are consulting on the six options outlined in Table 4 below;

	No option to choose what REP is based on	Option to choose what REP is based on
Original Proposal	X	X
Hydro (storage) has a fuel cost	X	X
Hydro (storage) / Tidal Barrage / any generation with a connected battery has a fuel cost	X	X

Table 4 – Potential options for change

4.25 The Workgroup have not included an option on the possible timing of making the REP choice; either (i) monthly, (ii) annual or (iii) on a one off basis; however the Workgroup would like to invite views on these three options.

Implementation approach

4.26 The Workgroup considered the Implementation approaches for all potential options and the option to decide what REP is based on as being either (i) a monthly, (ii) annual or (iii) a one off basis.

4.27 The Proposer noted that in terms of process changes there would be a relatively low cost to implementation, and therefore CMP237 could be implemented as soon as reasonably practicable for both the stand alone options and the options with a choice. One Workgroup member suggested that other parties may require system changes that should be taken into account when proposing implementation timescales. The Workgroup agreed to ask industry parties for their views on this.

4.28 One Workgroup member noted that there would be a need for a transition period to allow effective communication of the change, if CMP237 were approved and for parties to adjust their prices to reflect those changes. The Workgroup agreed that an appropriate transition would leave a full clear month in between an Authority decision and the effective implementation of the Modification. The Workgroup agreed that this should be the same for all six potential options for change outlined in Table 4.

4.29 A Workgroup member asked if the option which included a choice on a one off basis (e.g. when signing a MSA) was implemented, whether existing MSAs would be amended. It was also questioned that, if this was the case, whether one full clear month between an Authority Decision and an effective implementation date would allow sufficient time for National Grid and Users to amend existing MSAs.

4.30 The Workgroup noted that there were different stages of a plant lifecycle where an MSA could be changed and that all of these would need to be considered when discussing implementation timescales, these are;

1. New plant – MSA not issued – no offer
2. New plant – MSA not signed – had offer
3. New plant – MSA signed - Not commissioning
4. Existing plant – Commissioning
5. Existing plant – Operational

4.31 It was noted that the first stage would require little to no change, the second stage would require resubmitting (by National Grid, to the User) an amended MSA and the last three stages would require National Grid contacting the User to amend their MSA. The National Grid representative considers that the proposal could be implemented with a side letter to the MSA rather than needing to amend existing MSAs. It is estimated that this process would take a maximum of three months.

4.32 A Workgroup member stated that if the Authority implemented an option which included optionality on a monthly basis, this would require a change to the FRBS which would require a short amount of time to implement.

4.33 One Workgroup member suggested that if an option where non fuel cost generators choose how they are classed (in terms of fuel type) is implemented, this information should be transparent so competitors can see how generators class themselves. It was suggested that this information could be provided within the Transmission Entry Capacity (TEC) Register. Another Workgroup member disagreed with this approach and thought that this information could be commercially confidential to the Generator.

4.34 At the third Workgroup meeting, following the Workgroup Consultation, the Workgroup noted that there was some support in the Consultation responses for the CUSC implementation 10 Working days following an Authority decision and practical implementation at least one clear month after the decision. One Workgroup member noted that this would probably be done using a side letter and it was questioned how long would be given to parties to sign and return the letter. It was noted that it could take up to three months to return a signed letter. Another Workgroup member advised that this should be long enough as there is an incentive for the generator to sign and return the letter as soon as they can and many would take much less than three months to return.

5 Post Workgroup Consultation discussions

Workgroup discussion on responses

5.1 The Workgroup met to discuss all responses received to the Workgroup Consultation. One Workgroup member referred to their own response to the Consultation, stating that Ofgem had moved away from cost reflectivity to a more value based approach with the Response Energy Payment, whereas the Original solution to CMP237 seems to be doing the opposite. The Workgroup member also noted that most responses had favoured the potential option to include a choice for generators when it comes to their REP and that in his opinion a monthly choice would be the best for this option as it aligns with the Monthly Holding Payments.

5.2 The Workgroup noted that there was a mixture of views for the frequency of REP choices for generators, with some preferring monthly and some preferring annually. Other Workgroup members noted that although within their responses they had stated a preference for an annual choice, they could also see the benefit of having a monthly choice.

Drax Power CUSC Workgroup Consultation Alternative Request

5.1 A CUSC Workgroup Consultation Alternative Request was also raised by Drax Power, this can be found in Annex 5 of this Consultation. Representatives from Drax Power were invited to the Workgroup meeting to discuss their alternative request. The Drax Power representative noted that since the initial determination of the methodology on which the REP is calculated, the market has become much more diverse and this methodology is no longer appropriate. It was also noted that the Market Index Price can vary considerably within day, which increases financial risk for generators when providing frequency response. The Drax Power representative stated that the Alternative Request included the option for all parties to choose the price of the REP so that they are aware of what prices they face and also clarified that this included negative prices.

5.2 A Workgroup member questioned whether, within the proposed alternate, the REP would be submitted alongside the Holding Price or separately. The Drax representative noted that the process would remain the same as it is currently, however a generator would also have the option to choose their REP payment, so therefore the prices would be submitted separately. A Workgroup member thought that this option sounded more complex than the Original Proposal and the other potential alternatives the Workgroup have discussed previously, as with these options the REP and the Holding Price would be submitted together. It was noted that if these were submitted separately, there would be more room for error for both the generator and National Grid.

5.3 The National Grid representative noted that currently Holding Prices are submitted on the Frequency Response Price Submission (FRPS) website, he assumed that with the proposed options, parties would submit their REP alongside their Holding Prices, which would be simple. However, he also noted that if every generator has their own REP it may prove problematic to identify the most cost efficient generators to provide Frequency Response. This is as a result of the optimisation algorithm, which would require an forecast of the response energy that would be used in the next settlement period in order to include REP prices in the decision process.

5.4 The Workgroup questioned how the optimisation algorithm would include the zero REP for certain generators under the Original Proposal. The National Grid representative clarified the difference between the Original Proposal and the alternate proposal by Drax, stating that there will be an uplift in the Market Index Price for the Original which would not require

the optimisation algorithm to consider the REP, whereas the alternative would require the REP to be built into the optimiser. The National Grid representative agreed to find out how this could be achieved and reported back to the Workgroup in the following meeting (para 5.14).

5.5 The Workgroup welcomed views from a Frequency Response expert from Drax Power who stated that currently the market is hugely distorted and that it is expected that the Market Index Price will reach a value below zero in the near future. The Drax representative stated that currently there seems to be no relationship between the Market Index Price and the incremental costs that Frequency Response providers are subject to. The National Grid representative asked if Drax Power had any analysis to show the variability of the Market Index Price to provide to the Workgroup. The Drax Power representative noted that it was not clear which types of generators provide Frequency Response, however agreed to provide its available data to the Workgroup which National Grid agreed to feed in to.

5.6 The Workgroup discussed whether they thought that the alternative request should be taken forward by the Workgroup as an official WACM. It was agreed that the Workgroup would have a better view of whether they would want to consider this option as a WACM once they have seen the analysis provided by National Grid and Drax. The Workgroup also decided to wait until they had sight of this analysis before agreeing any other WACMs for the Workgroup Report.

5.7 One Workgroup member thought that Drax's proposed alternative, alongside the Original and potential alternatives, provides a range of flexibility, noting that Drax's alternative would be the most flexible option allowing generators to choose any price they wanted for their REP.

5.8 It was noted that if the Workgroup chose to include Drax's alternative request as a formal WACM, they may wish to re-consult on the WACMs as it would have a broader impact on the Industry than the Original Proposal and initial options.

5.9 One Workgroup member advised that under the Drax alternative request there is a possibility that market participants recover all their costs via the REP and that this could be an unintended consequences with the interaction between the REP and the Balancing Mechanism. The National Grid representative took an action to consider the impact of any unintended consequences and whether there would be any consequential code changes as a result of CMP237. Within the next Workgroup meeting, the Proposer noted that there should be no consequential code changes from CMP237 and no impact on the BSC or Balancing Mechanism was identified.

Drax Power analysis

5.10 Within the next Workgroup meeting, the Drax representative presented analysis[4] to support their Workgroup Consultation Alternative Request to the Workgroup, this is included within Annex 5 of this document. The Drax representative noted that the different marginal costs of different generation technologies is wide and that there is a threat that marginal costs will continue to increase bringing volatility. He noted that there are specific examples within the analysis provided to the Workgroup where wholesale prices had moved around quite dramatically within a short period of time. He noted that Drax believe that their paper illustrates that from a frequency response perspective, the Workgroup Consultation Alternative Request better meets the Applicable CUSC Objectives as it facilitates competition and helps National Grid meet its licence requirements.

[4] Drax analysis for CMP237 is available under 'Workgroup meetings' on the CMP237 page: http://www2.nationalgrid.com/UK/Industry-information/Electricity-codes/CUSC/Modifications/CMP237/

5.11 The Workgroup thanked Drax for providing this useful analysis to support their decision on whether or not to accept their Alternative Request as a formal WACM within the Workgroup Report.

5.12 In response to the action taken in the previous meeting, the Proposer noted that he had spoken with the Commercial Optimisation department at National Grid to see if it was possible for parties to choose the price of their REP in line with the Alternative Request. He noted that the current methodology calculated REP payments post-event, i.e. when the volume of response energy used was known. He noted that the Alternative Request would require individual REP prices to be included in the decision of which generators to despatch for response, and this would require forecasting the volume of response energy pre-event. The level of response energy that will be used in a given settlement period is impossible to forecast, however, as it will depend on variables such as the second by second level of NHH demand. Without being able to know this variable, it would not be possible to make a decision on which generator would be the most economic for frequency response. Putting this aside, the Proposer also noted that he had spoken to the IT department who had estimated that any development of the optimisation and despatching algorithm would not be able to start until at least 2017 and could cost £10m to implement, however National Grid would need to spend ~£30k on a feasibility study before any level of confidence could be ascribed to this figure, and this could take a month or more. In summary, the Proposer's view was that the Alternative Request raised by Drax is not a workable solution, and if it were to be attempted it would have major time and cost implications. The Proposer noted that, although he did not think this option was practical, the Drax analysis does highlight that there is an issue with MIP volatility that needs to be addressed.

5.13 The Drax representative questioned how the optimisation of the REP would be more complicated for the Alternative request than it would be for the Original solution which offers two options (REP of zero or based on MIP). The Proposer noted that this is because it would be included within the holding price. One Workgroup member asked if National Grid put in a proxy or would change the holding price to cover the risk. The Proposer took and action to get more clarification on how the Original proposal would have factored costs into the optimisation.

5.14 The Proposer noted that he considered that an additional defect of the negative impact on REP costs as a result of MIP volatility had been highlighted by the Drax analysis and asked the Workgroup if they would want to come up with a solution for this (along with the original defect outlined within the Modification Proposal form) within the CMP237 Workgroup process.

Potential options for change

5.15 It was noted that there were two potential options for the Workgroup in regards to targeting this additional defect, these were;

1. Include the defect within CMP237 and come up with one or more solutions that resolve both the original defect and MIP volatility, or;

2. Focus on the original defect and raise another modification which tackles MIP volatility separately.

5.16 It was noted that if the Workgroup went for option 1, they would need to re-consult with the industry and if they went for option 2, a decision from the Authority on CMP237 may be delayed as a result of having a related modification underway. Therefore whichever option was chosen there would be a delay to the expected CMP237 process.

5.17 The Proposer considered that the additional defect identified in the Drax analysis could be addressed within CMP237 by setting the REP to zero for all parties. This would address the issue of MIP volatility affecting REP prices as well as the REP calculation not being appropriate for low fuel cost plant. The Proposer stated that this would be the revised Original proposal.

5.18 The Drax representative noted that the revised Original solution targets the issue of MIP volatility but it does not target the issue of uncertainty in response volumes. The Proposer noted that volume uncertainty is about forecasting how much response energy will be used, which would be an issue under any option. He noted that if the REP is set to zero, the generators will have to make an estimate of how much response energy they will use, which should tend to zero over time, and what their costs are and factor this into their holding prices. However if generators are allowed to submit individual REP prices, National Grid would need to make an estimate of the response energy that will be used over the total system and then undertake an optimisation based on this. The Proposer believed that generators are better placed to manage this risk as they can average the estimated energy used over time, as it should net to around zero, whereas the SO has to consider each settlement period in isolation and hence there would be a much greater impact of an inaccurate forecast.

5.19 The Proposer noted that another idea for a solution to the MIP volatility issue would be to settle the REP over a longer period of time (e.g. monthly) as this would average out the effect of MIP volatility in the REP price, however this would not tackle both defects and hence would need to be paired with one of the solutions to the REP calculation defect. He also noted that the Drax solution would address both issues however reiterated that he did not think it was proportionate.

5.20 One Workgroup member noted that if the potential alternative from Drax was not adopted by the Workgroup, it could potentially be raised in the future to make another change which would allow for a transitional change from an option less flexible to the most flexible option.

5.21 A Workgroup member noted that the most efficient way to proceed would be to adopt the secondary defect and come up with a solution which aims to fix both defects within the CMP237 Modification process; however it was noted that this would require another Workgroup consultation. The Workgroup agreed that there should be another Workgroup Consultation on CMP237.

5.22 Another Workgroup member noted that, although the Workgroup now considers there to be an additional defect, after the Workgroup Consultation the Workgroup may still decide not to include this within the CMP237 Modification Report to the CUSC Panel, revert back to the Original solution and options outlined within Section 4 of this report and suggest another Modification should be proposed to target the additional defect.

5.23 The Workgroup considered whether the potential options for change previously consulted on would also address the new defect. The Proposer noted that the new defect could be addressed by including the proposal of settling the REP on a longer period to each option. A Workgroup member questioned whether this would be mandatory. The Proposer thought that this should be mandatory to avoid complication. The Workgroup decided that new options for change should be considered as the ones which have already been consulted on (outlined in para 4.24) did not address both defects effectively.

5.24 The Workgroup felt the Drax Alternative Request should be included within a second Workgroup consultation as a potential option for change alongside the revised Original. A Workgroup member suggested another option which included aspects from both the revised original and the Drax Alternative Request. He noted that as the Drax Alternative Request could not be implemented until at least 2017, phase 1 could be to have the REP set to zero (revised Original solution) and in 2017 introduce the solution of generators

choosing their own REP (Drax's Alternative Request). The Workgroup member noted that this would provide a useful stepping stone to the Drax Alternative Request, rather than waiting until 2017 for this to be implemented.

5.25 The Workgroup agreed that they should re consult on the revised Original solution and the two potential options for change. These are summarised within the table below;

Option	**Description**
Revised Original Solution	Remove REP for everyone
Potential option for change 1 (Drax Alternative Request)	Allow generators to submit their own REP
Potential option for change 2 (Hybrid option)	Remove REP for everyone until it is possible for generators to submit their own REP.

Table 5 - Potential options for change for second Workgroup Consultation

5.26 The Workgroup noted that if the Drax Alternative was preferable by the Industry, then appropriate cost benefit analysis would be done on this option to provide within the Workgroup Report to the CUSC Panel. However, the Workgroup also noted that there would still be the choice to revert back to the original defect, solution and potential options after the second Workgroup Consultation if they chose not to include the second defect with this.

5.27 A Workgroup member noted that it needs to be clear within the Workgroup Consultation the time and cost implications that would be required to understand whether or not the Drax Alternative Request was even achievable. The Proposer reiterated that in his view the Drax alternative could not be implemented for reasons given above, however it was estimated that it would take £30k and 6-8 weeks for National Grid's IT contractor to provide a quote and timescales for any change to the EBS system. The Proposer noted that he did not want to ask for this unless the Workgroup voted for the Drax option to be a formal Workgroup Alternative CUSC Modification Proposal (WACM), as it would delay the EBS implementation work that was currently in progress. For reference, it was noted that any change would not be able to be started until 2017, and changes of this magnitude could cost around £10M.

6 Workgroup Alternatives

6.1 When developing the CMP237 Proposal the Workgroup had considered potential options for change. The options included within the first consultation are outlined within paragraphs 4.21- 4.25 of this report.

6.2 Once the Workgroup Consultation closed, the Workgroup fully considered these options along with the Consultation responses and the Workgroup Consultation Alternative Request. The Workgroup identified an additional defect that they would like to address as part of CMP237; details of this defect are outlined in paragraph 5.16 of this report. The Workgroup are now consulting on a revised Original solution and new potential alternatives, these are outlined within paragraph 5.27 of this report.

6.3 Once this second Workgroup Consultation has closed, the Workgroup will consider these options along with any responses received and agree on any Workgroup Alternative CUSC Modifications (WACMs) to present to the CUSC Modifications Panel within the Workgroup Report.

6.4 The Workgroup note that they may revert back to the Original solution and potential alternatives outlined within the first Workgroup Consultation, if as a result of this Workgroup Consultation they seem the more practical approach.

7 Impact and Assessment

Impact on the CUSC

7.1 Changes to Section 4

Impact on Greenhouse Gas Emissions

7.2 None identified.

Impact on Core Industry Documents

7.3 None identified.

Impact on other Industry Documents

7.4 None identified.

8 Proposed Implementation and Transition

8.1 The Workgroup agree that CMP237 should be implemented into the CUSC 10 Working days after an Authority decision, with a transitional period depending on which option is implemented (see paragraphs 4.26-4.34 for further details).

9 How to Respond

9.1 This Workgroup Consultation is seeking the views of CUSC Parties and other interested parties in relation to the issues noted in this document and specifically in response to the questions highlighted in the report and summarised below:

Standard Workgroup Consultation questions:

Q1: Do you believe that CMP237 revised Original solution or either of the new potential options for change better facilitates the Applicable CUSC Objectives?

Q2: Do you support the proposed implementation approach?

Q3: Do you have any other comments?

Q4: Do you wish to raise a Workgroup Consultation Alternative request for the Workgroup to consider? Please see 9.3.

Specific CMP237 Workgroup Consultation questions:

Q5: Do you agree that there is a defect around the volatility of the MIP that is used to calculate the REP?

Q6: Do you agree that the proposed Workgroup approach of considering solutions that only address both defects is appropriate?

Q7: Do you think that the revised Original solution and potential alternatives better facilitate the Applicable CUSC Objectives better than those outlined in the first Workgroup Consultation.

Q8: Do you consider the potential alternatives practical options considering the time and cost implications of implementing them.

9.2 Please send your response using the response pro-forma which can be found on the National Grid website via the following link: http://www2.nationalgrid.com/UK/Industry-information/Electricity-codes/CUSC/Modifications/CMP237/

9.3 In accordance with Section 8 of the CUSC, CUSC Parties, BSC Parties, the Citizens Advice and the Citizens Advice Scotland may also raise a Workgroup Consultation Alternative Request. If you wish to raise such a request, please use the relevant form available at the web link below: http://www.nationalgrid.com/uk/Electricity/Codes/systemcode/amendments/forms_guidance/

9.4 Views are invited upon the proposals outlined in this report, which should be received by **5pm on 23rd April 2015**. Your formal responses may be emailed to: cusc.team@nationalgrid.com

9.5 If you wish to submit a confidential response, please note that information provided in response to this consultation will be published on National Grid's website unless the response is clearly marked "Private & Confidential", we will contact you to establish the extent of the confidentiality. A response market "Private & Confidential" will be disclosed to the Authority in full but, unless agreed otherwise, will not be shared with the CUSC

Modifications Panel or the industry and may therefore not influence the debate to the same extent as a non-confidential response.

10 Responses to the first Workgroup Consultation

10.1 Five responses (including 1 late response) were received to the Workgroup Consultation. These responses are contained within Annex # of this report. The following table provides an overview of the representations received;

Respondent	Do you believe that CMP237 Original Proposal or either of the potential options for change better facilitate the Applicable CUSC Objectives?	Do you support the proposed implementation approach?	Do you have any other comments?
DONG Energy	• Yes. Better facilitates objective (a) as current REP calculation does not reflect characteristics of a more diverse generation portfolio. • Better facilitates (b) as it more closely represents the specific characteristics of these generation portfolios. • Also expect overall cost for high frequency response from no-fuel generation will reduce.	• If an approach is chosen where generators have a choice of REP calculation, then there needs to be sufficient time to switch operationally. • We support to lead time of one month.	• We agree with the classification of generators into no-fuel cost and fuel costs as shown in Table 3. • We believe generators that have no-fuel cost should have the option to choose the REP calculation and support the option to switch annually. • Electricity storage connected to no-fuel cost generation should also be given the possibility to choose the REP calculation. • We believe there is no material costs to consumer, and any costs would be outweighed by the benefits.
Drax	• No. Don't think any option addresses the defect. • Any proposal to amend the REP calculation should endeavour to solve the problem of increase volatility risk and costs. • This proposal does not better facilitate ACO (a) as it will not better enable National Grid to procure and utilise Frequency Response more efficiently. • No to (b) as it favours a particular group of generation technologies – those classified as having no fuel cost. • We are proposing an alternative solution - all generators should be allowed to submit their own price to properly reflect their marginal cost.	• Yes.	• We believe all generators regardless of technology should be able to choose their stance on what their REP is based on. • Don't agree with the classification of generators with or without fuel costs as it should reflect marginal costs. • Support the option of monthly choice for generators due to market conditions and prices changing and also coincides with holding fees which are currently being updated monthly. • This modification may bring a benefit to consumers, however it will distort competition which may ultimately increase costs to consumers.
EDF Energy	• Yes. Original proposal slightly better facilitates objective (b) as it would remove a (slight) barrier to competition.	• Do not disagree with one month notice, however think three months' notice to implementation, might be prudent, so that MSA's can (via a side letter) be amended in time, to avoid uncertainty as to what REP regime generators are operating under, so that frequency response market	• We agree with the categorisation in table 3. • We do not agree with 'non fuel cost Users' being able to choose what their REP is based on. • If there was a choice, annual would be the best option. • Total monthly REP costs are from £100k to £200k per

		participation can be efficient, and to give time for legal scrutiny of the side-letter by affected parties.	month, so allowing these users to access REP payments which they perhaps oughtn't to, contrary to table 3, will have no discernible impact on bills.
Scottish Power Energy Management Ltd	• Yes. By ensuring that low fuel cost generators are not required to make a response energy payment based upon an avoided fuel cost from which they do not benefit, the proposal will ensure that they are compensated when required to provide Mandatory Frequency Response and will therefore better facilitate competition.	• We agreed with the proposed implementation of 10 Working days after an Authority decision.	• We agree with the generator classifications in table 3. • If non fuel cost Users were able to make this choice we believe that it should not be made more frequently than annually although we would expect most Users to make a one off election.
SSE	• CMP237 assumes that the REP is only to pay for fuel costs incurred or avoided by a generator which is not the case. • Low fuel cost generators also seem to have been overlooked as the Workgroup discussions focus on 'fuel cost' and 'no fuel cost'. • All options are neutral to Applicable CUSC Objective (c). • Original Proposal does not better facilitate (a) or (b) as it is discriminatory and (re)introduces a barrier to competition. • The Hydro storage option does not better facilitate (a) and (b) in comparison to the Baseline, however is better than the Original Proposal. • Opt in /out option does not better facilitate (a) and (b) in comparison to the Baseline, however is better than the Original Proposal.	• We concur with the comments on leaving a full clear month between an Authority approval and the practical implementation. • We agree with Workgroup concerns in regards to allowing sufficient time for National Grid to amend existing MSAs which is highly unlikely to be achieved in one month. • We concur that a short amount of time would be require to change FRBS • Don't see what the option chosen by a generator should not be published.	• It would be appropriate for the REP choice to be made monthly and aligned with the monthly Holding Payment submissions. • Don't agree with classification of generators in table 3 – no justification for these has been made. • We note there is no reference to 'low fuel cost' generator as per the title of the Modification. • In regard to hydro generation with storage, there is not, as suggested 'no fuel cost'. • We would question the legality of this Original proposal in regards to property rights. • The Original proposal is silent on how interconnectors are to be classified. • Allowing non fuel cost Users to freely choose how their REP is calculated will lead to a lower cost for consumers than the alternative of now allowing this choice.

Annex 1 – CMP237 CUSC Modification Proposal Form

Title of the CUSC Modification Proposal

Response Energy Payment for Low Fuel Cost Generation

Submission Date

18 September 2014

Description of the Issue or Defect that the CUSC Modification Proposal seeks to address

The current Response Energy Payment methodology creates a barrier to competition for low fuel cost generators.

All licensed generators are obliged to provide the mandatory frequency response service as required by the Grid Code. Currently, when instructed to provide frequency response, a generator is paid an hourly Holding Payment and is paid or pays a Response Energy Payment (REP) for net energy delivery per settlement period.

Generators submit individual Holding Prices on a monthly basis whilst the universally-applied REP is defined in the CUSC and is designed to reflect the energy cost incurred or saved from service provision, which includes the associated cost of fuel. The REP is based on Market Index Price (MIP) with different ratios: -0.75 for High Frequency and 1.25 for Low Frequency. The negative sign for High Frequency indicates that the REP is made by generators, as it is anticipated that the generator has saved money by not using as much fuel.

This methodology evolved during a period when the majority of generators providing frequency response had fuel costs that made up a reasonable proportion of the cost of providing frequency response. As such, the current methodology is tailored to these conventional generators, and does not consider the different financing approaches of generators with low or negative energy costs or those that receive additional financial incentives, e.g. Renewable Obligation Certificates (ROC) and, in the future, Feed In Tariff incentives.

An example of this might be a wind farm for whom there is a financial incentive to output at full capability, as ROCs are earned on a MWh output basis. If this unit were to be instructed to carry High Frequency response, it would pay REP for any consequent reduction in energy output, but would have no avoided fuel cost to offset this against. There is a reverse effect for low frequency response, as the wind farm would first need to be bid down (i.e. its output is reduced through acceptance of a bid in the balancing mechanism) in order for it to have the headroom to be able to provide low frequency response. The bid price for this would include lost ROC revenue, and the wind farm would also get paid REP despite having used no additional fuel.

This is illustrated in the following table:

Generator Type	Response Type	Cost	Benefit
Conventional	High Frequency	MIP*-0.75	Avoided fuel
	Low Frequency	Used fuel [Reduced output if req.d]	MIP*1.25 [BOA payment if req.d]
Low Carbon	High Frequency	MIP*-0.75	-
	Low Frequency	Reduced output	BOA payment MIP*1.25

For clarity it should be noted that when a generator has been dispatched for frequency response they are not subject to imbalance payments (or cashout), and therefore any variations in output from their position as a result of providing response would not affect the amount of ROCs earnt.

The current methodology therefore provides a measure of cost mitigation for conventional fuel-stock generators by balancing the avoided/used fuel costs against the REP, but does not appropriately reflect the cost for renewable generators. With the increasing installed capacity of these generators we believe the calculation of the REP needs be re-defined to accommodate a diverse range of frequency response service providers.

Description of the CUSC Modification Proposal

It is proposed that the REP calculation be retained for conventional generators or generators that have a fuel cost (e.g. fossil fuel or biomass). For all other generators the REP would be settled at £0/MWh. This will ensure that generators are not penalised by the cost of changing their energy output in providing frequency response, whether that change involves a fuel cost or not. The effect of this is illustrated in the following table:

Generator Type	Response Type	Cost	Benefit
Conventional	High Frequency	MIP*-0.75	Avoided fuel
	Low Frequency	Used fuel Reduced output (if req.d)	MIP*1.25 BOA payment (if req.d)
Low Carbon	High Frequency	-	-
	Low Frequency	Reduced output	BOA payment

NGET considers this proposal to be a pragmatic step that should be straightforward to implement at minimal cost. By removing the REP from non-conventional generators the proposal removes the financial penalty as a result of assumed fuel costs, whilst ensuring that there would be minimal impact for existing fossil fuel generators.

Impact on the CUSC

Changes would be required to Section 4.

Do you believe the CUSC Modification Proposal will have a material impact on Greenhouse Gas Emissions? Yes / No

No. It is envisaged that the new methodology would encourage renewable generators to participate in the frequency response market, however payments for frequency response are not sufficiently large by themselves to drive a material change in either the investment in new generation or the operation of existing generation.

Impact on Core Industry Documentation. Please tick the relevant boxes and provide any supporting information

BSC ☐

Grid Code ☐

STC ☐

Other ☐
(please specify)

This is an optional section. You should select any Codes or state Industry Documents which may be affected by this Proposal and, where possible, how they will be affected.

Urgency Recommended: Yes / No

No.

Justification for Urgency Recommendation

N/A

Self-Governance Recommended: Yes / No

No.

Justification for Self-Governance Recommendation

N/A

Should this CUSC Modification Proposal be considered exempt from any ongoing Significant Code Reviews?

N/A

Impact on Computer Systems and Processes used by CUSC Parties:

Low impact on:

- Generator frequency response pricing processes

Medium impact on:

- National Grid administration of Frequency Response Price Submission process
- National Grid and Generator Settlement processes

Details of any Related Modification to Other Industry Codes

No other Codes would be impacted.

Justification for CUSC Modification Proposal with Reference to Applicable CUSC Objectives:

Please tick the relevant boxes and provide justification:

☒ (a) the efficient discharge by The Company of the obligations imposed upon it by the Act and the Transmission Licence
This modification proposal proposes relatively simple changes that are believed to have modest implementation costs which should be outweighed by the benefit brought by facilitating competition described below.

☒ (b) 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.
This modification proposal removes a barrier to competition that the current Response Energy Payment methodology presents to generators that have low fuel costs.

☐ (c) compliance with the Electricity Regulation and any relevant legally binding decision of the European Commission and/or the Agency.
These are defined within the National Grid Electricity Transmission plc Licence under Standard Condition C10, paragraph 1.

Objective (c) was added in November 2011. This refers specifically to European Regulation 2009/714/EC. Reference to the Agency is to the Agency for the Cooperation of Energy Regulators (ACER).

Additional details

Details of Proposer: (Organisation Name)	National Grid
Capacity in which the CUSC Modification Proposal is being proposed: (i.e. CUSC Party, BSC Party or "National Consumer Council")	CUSC Party

Details of Proposer's Representative: Name: Organisation: Telephone Number: Email Address:	 Adam Sims National Grid 01926 655292 adam.sims@nationalgrid.com
Details of Representative's Alternate: Name: Organisation: Telephone Number: Email Address:	 Steve Lam National Grid 01926 653534 steven.lam@nationalgrid.com
Attachments (Yes/No): No If Yes, Title and No. of pages of each Attachment:	

Contact Us

If you have any questions or need any advice on how to fill in this form please contact the Panel Secretary:

E-mail cusc.team@nationalgrid.com

Phone: 01926 655223.

For examples of recent CUSC Modifications Proposals that have been raised please visit the National Grid Website at http://www.nationalgrid.com/uk/Electricity/Codes/systemcode/amendments/currentamendmentproposals/

Submitting the Proposal

Once you have completed this form, please return to the Panel Secretary, either by email to jade.clarke@nationalgrid.com and copied to cusc.team@nationalgrid.com, or by post to:

Jade Clarke
CUSC Modifications Panel Secretary, TNS
National Grid Electricity Transmission plc
National Grid House
Warwick Technology Park
Gallows Hill
Warwick
CV34 6DA

If no more information is required, we will contact you with a Modification Proposal number and the date the Proposal will be considered by the Panel. If, in the opinion of the Panel Secretary, the form fails to provide the information required in the CUSC, the Proposal can be rejected. You will be informed of the rejection and the Panel will discuss the issue at the next meeting. The Panel can reverse the Panel Secretary's decision and if this happens the Panel Secretary will inform you.

Annex 2 – CMP237 Terms of Reference

nationalgrid

Workgroup Terms of Reference and Membership

TERMS OF REFERENCE FOR CMP237 WORKGROUP

Responsibilities

1. The Workgroup is responsible for assisting the CUSC Modifications Panel in the evaluation of CUSC Modification Proposal CMP237 'Response Energy Payment for Low Fuel Cost Generation' tabled by National Grid Electricity Transmission Plc at the Modifications Panel meeting on 26th September 2014.

2. The proposal must be evaluated to consider whether it better facilitates achievement of the Applicable CUSC Objectives. These can be summarised as follows:

   (a) the efficient discharge by the Licensee of the obligations imposed on it by the Act and the Transmission Licence;

   (b) 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;

   (c) Compliance with the Electricity Regulation and any relevant legally binding decision of the European Commission and/or the Agency.

3. It should be noted that additional provisions apply where it is proposed to modify the CUSC Modification provisions, and generally reference should be made to the Transmission Licence for the full definition of the term.

Scope of work

4. The Workgroup must consider the issues raised by the Modification Proposal and consider if the proposal identified better facilitates achievement of the Applicable CUSC Objectives.

5. In addition to the overriding requirement of paragraph 4, the Workgroup shall consider and report on the following specific issues:

   a) Which generators should be classed as low fuel cost generation under CMP237?
   b) What is the interaction with subsidy regimes?
   c) Implementation
   d) Review illustrative legal text

6. The Workgroup is responsible for the formulation and evaluation of any Workgroup Alternative CUSC Modifications (WACMs) arising from Group discussions which would, as compared with the Modification Proposal or the current version of the CUSC, better facilitate achieving the Applicable CUSC Objectives in relation to the issue or defect identified.

7. The Workgroup should become conversant with the definition of Workgroup Alternative CUSC Modification which appears in Section 11 (Interpretation and Definitions) of the CUSC. The definition entitles the Group and/or an individual member of the Workgroup to put forward a WACM if the member(s) genuinely believes the WACM would better facilitate the achievement of the Applicable CUSC Objectives, as compared with the Modification Proposal or the current version of the CUSC. The extent of the support for the Modification Proposal or any WACM arising from the Workgroup's discussions should be clearly described in the final Workgroup Report to the CUSC Modifications Panel.

8. Workgroup members should be mindful of efficiency and propose the fewest number of WACMs possible.

9. All proposed WACMs should include the Proposer(s)'s details within the final Workgroup report, for the avoidance of doubt this includes WACMs which are proposed by the entire Workgroup or subset of members.

10. There is an obligation on the Workgroup to undertake a period of Consultation in accordance with CUSC 8.20. The Workgroup Consultation period shall be for a period of 15 Working days as determined by the Modifications Panel.

11. Following the Consultation period the Workgroup is required to consider all responses including any WG Consultation Alternative Requests. In undertaking an assessment of any WG Consultation Alternative Request, the Workgroup should consider whether it better facilitates the Applicable CUSC Objectives than the current version of the CUSC.

    As appropriate, the Workgroup will be required to undertake any further analysis and update the original Modification Proposal and/or WACMs. All responses including any WG Consultation Alternative Requests shall be included within the final report including a summary of the Workgroup's deliberations and conclusions. The report should make it clear where and why the Workgroup chairman has exercised his right under the CUSC to progress a WG Consultation Alternative Request or a WACM against the majority views of Workgroup members. It should also be explicitly stated where, under these circumstances, the Workgroup chairman is employed by the same organisation who submitted the WG Consultation Alternative Request.

12. The Workgroup is to submit its final report to the Modifications Panel Secretary on 22nd January 2015 for circulation to Panel Members. The final report conclusions will be presented to the CUSC Modifications Panel meeting on 30th January 2015.

Membership

13. It is recommended that the Workgroup has the following members:

Role	Name	Representing
Chairman	Alex Thomason	Code Administrator
*National Grid Representative**	Adam Sims	National Grid
Industry	Lee Taylor	GDF Suez

*Representatives**	Garth Graham Paul Mott Bjarne Beck Guy Phillips Yanik Leunen	SSE EDF Energy DONG Energy E.ON Vattenfall
Authority Representatives	Jonathan Bryson	Ofgem
Technical secretary	Jade Clarke	Code Administrator
Observers		

NB: A Workgroup must comprise at least 5 members (who may be Panel Members). The roles identified with an asterisk in the table above contribute toward the required quorum, determined in accordance with paragraph 14 below.

14. The chairman of the Workgroup and the Modifications Panel Chairman must agree a number that will be quorum for each Workgroup meeting. The agreed figure for CMP237 is that at least 5 Workgroup members must participate in a meeting for quorum to be met.

15. A vote is to take place by all eligible Workgroup members on the Modification Proposal and each WACM. The vote shall be decided by simple majority of those present at the meeting at which the vote takes place (whether in person or by teleconference). The Workgroup chairman shall not have a vote, casting or otherwise]. There may be up to three rounds of voting, as follows:

- Vote 1: whether each proposal better facilitates the Applicable CUSC Objectives;
- Vote 2: where one or more WACMs exist, whether each WACM better facilitates the Applicable CUSC Objectives than the original Modification Proposal*;*
- Vote 3: which option is considered to BEST facilitate achievement of the Applicable CUSC Objectives. For the avoidance of doubt, this vote should include the existing CUSC baseline as an option.

The results from the vote and the reasons for such voting shall be recorded in the Workgroup report in as much detail as practicable.

16. It is expected that Workgroup members would only abstain from voting under limited circumstances, for example where a member feels that a proposal has been insufficiently developed. Where a member has such concerns, they should raise these with the Workgroup chairman at the earliest possible opportunity and certainly before the Workgroup vote takes place. Where abstention occurs, the reason should be recorded in the Workgroup report.

17. Workgroup members or their appointed alternate are required to attend a minimum of 50% of the Workgroup meetings to be eligible to participate in the Workgroup vote.

18. The Technical Secretary shall keep an Attendance Record for the Workgroup meetings and circulate the Attendance Record with the Action Notes after each meeting. This will be attached to the final Workgroup report.

19. The Workgroup membership can be amended from time to time by the CUSC Modifications Panel.

Annex 3 – Workgroup attendance register

A – Attended
X – Absent
O – Alternate
D – Dial-in

Name	Organisation	Role	07/11/2014	21/11/2014	02/02/2015	05/03/2015
Alex Thomason	Code Administrator	Independent Chair	A	A	A	A
Jade Clarke	Code Administrator	Technical Secretary	A	A	A	A
Adam Sims	National Grid	Proposer	A	A	A	A
Garth Graham	SSE	Workgroup Member	D	A	A	D
Paul Mott	EDF Energy	Workgroup Member	D	A	A	A
Bjarne Beck	DONG Energy	Workgroup Member	A	D	A	D
Guy Phillips	E.ON	Workgroup Member	A	A	A	D
Yanik Leunen	Vattenfall	Workgroup Member	D	X	X	X
Lee Taylor	GDF Suez	Workgroup Member	A	D	D	D
Jonathan Bryson	Ofgem	Authority Representative	A	D	D	D
Cem Suleyman	Drax Power	Observer	X	X	D	D
Joseph Underwood	Drax Power	Observer	X	X	D	A

Annex 4 – First Workgroup Consultation responses

CUSC Workgroup Consultation Response Proforma

CMP237 – Response Energy Payment for Low Fuel Cost Generation

Industry parties are invited to respond to this consultation expressing their views and supplying the rationale for those views, particularly in respect of any specific questions detailed below.

Please send your responses by **21st January 2015** to cusc.team@nationalgrid.com. Please note that any responses received after the deadline or sent to a different email address may not receive due consideration by the Workgroup.

Any queries on the content of the consultation should be addressed to Jade Clarke at jade.clarke@nationalgrid.com

These responses will be considered by the Workgroup at their next meeting at which members will also consider any Workgroup Consultation Alternative Requests. Where appropriate, the Workgroup will record your response and its consideration of it within the final Workgroup Report which is submitted to the CUSC Modifications Panel.

Respondent:	*Christoph Horbelt* *Phone: 020 7811 5508* *Address:* *33 Grosvenor Place, Belgravia* *SW1X 7HY London* *United Kingdom*
Company Name:	*DONG Energy*
Please express your views regarding the Workgroup Consultation, including rationale. **(Please include any issues, suggestions or queries)**	For reference, the Applicable CUSC objectives are: (a) The efficient discharge by The Company of the obligations imposed upon it by the Act and the Transmission Licence. (b) 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. (c) Compliance with the Electricity Regulation and any relevant legally binding decision of the European Commission and/or the Agency.

Standard Workgroup consultation questions

Q	Question	Response
1	**Do you believe that CMP237 Original proposal or either of the potential options for change better facilitates the Applicable CUSC Objectives?**	DONG Energy welcomes the proposal to change the methodology behind the setting of Response Energy Payments (REP) as we believe that it is a significant step forward to the implementation of renewable energy in the electricity system. We believe that the current arrangements for calculating the REP do not accurately reflect the characteristics of a more diverse generation portfolio which includes renewable energy and that this modification will have a positive impact on applicable CUSC objective (a). Furthermore, in DONG Energy's view settling the REP at zero £/MWh for designated types of generation that have zero or very low fuel costs will better facilitate applicable CUSC objective (b) as it more closely represents the specific characteristics of these generation profiles. DONG Energy also expects that overall cost for high frequency response from no-fuel generation will reduce if this modification is implemented as the anticipated REP is one determinant for the holding fee setting. If the REP is settled at zero £/MWh no-fuel cost generators will no longer have to anticipate this cost when determining their holding fees. Overall, DONG Energy agrees with the classification of generation outlined in Table 3 of the Workgroup Consultation document. However, we see a need to find a solution that will continue to accurately class generation in "fuel cost" and "no-fuel cost" even when new concepts of generation and storage will be implemented. DONG Energy therefore believes that by giving no-fuel cost generators (as described in paragraph 4.23) the choice to decide for themselves whether or not to opt for an REP based on fuel costs would facilitate the classification process more efficiently. In addition to generation already classed as no-fuel cost we believe that "Electricity Storage" directly connected to a no-fuel unit should be given an option to choose to facilitate a potential future implementation of these concepts.

Q	Question	Response
2	**Do you support the proposed implementation approach?**	DONG Energy believes that if an approach is chosen where generators have a choice of REP calculation, then there needs to be sufficient lead time to facilitate the switch operationally.We support the proposed lead time of one month.
3	**Do you have any other comments?**	No
4	**Do you wish to raise a Workgroup Consultation Alternative request for the Workgroup to consider?**	*No*

Specific questions for CMP237

Q	Question	Response
5	**Do you agree with the proposed classification of generators with or without a fuel cost in table 3?**	As set out in the response to Question 1, DONG Energy agrees with the classification of generators into no-fuel cost and fuel cost shown in Table 3. However, we believe that generators classed as no-fuel cost should have the option to choose the REP calculation. Furthermore, electricity storage directly connected to no-fuel cost generation should be given the possibility to choose as well to facilitate the development of potential new storage solutions solely charged by no-fuel generation.
6	**If non fuel cost Users were able to choose what their REP is based on, do you think this choice should be made (i) monthly, (ii) annually or (iii) on a one off basis?**	We believe that giving generators the option to switch annually offers sufficient flexibility while at the same time limits administrative work to a reasonable level.
7	**Do you consider there to be any changes to your systems / processes required as a result of this modification? If so, would you propose any changes to the suggested transitional period?**	We do not expect significant changes to our systems and therefore we agree with the suggested transitional period of one month.

Q	Question	Response
8	**How to you think allowing non fuel cost Users to choose how their REP is calculated will affect costs to consumers?**	As the proposer indicated, only minor implementation costs from the optionality for no-fuel generators are expected. DONG Energy believes that there is no material cost to the consumer, and any costs are outweighed by the benefits from a more flexible mechanism that more closely reflects the cost for providing frequency response which will have a benefit to consumers.

CUSC Workgroup Consultation Response Proforma

CMP237 – Response Energy Payment for Low Fuel Cost Generation

Industry parties are invited to respond to this consultation expressing their views and supplying the rationale for those views, particularly in respect of any specific questions detailed below.

Please send your responses by **21st January 2015** to cusc.team@nationalgrid.com. Please note that any responses received after the deadline or sent to a different email address may not receive due consideration by the Workgroup.

Any queries on the content of the consultation should be addressed to Jade Clarke at jade.clarke@nationalgrid.com

These responses will be considered by the Workgroup at their next meeting at which members will also consider any Workgroup Consultation Alternative Requests. Where appropriate, the Workgroup will record your response and its consideration of it within the final Workgroup Report which is submitted to the CUSC Modifications Panel.

Respondent:	*Joe Underwood – joseph.underwood@drax.com*
Company Name:	*Drax Power Limited*
Please express your views regarding the Workgroup Consultation, including rationale. **(Please include any issues, suggestions or queries)**	While the Workgroup has deliberated over a number of possible solutions, we believe there is an additional solution worthy of consideration. Below we have suggested that, if the current regime is modified, all generators should have the option to choose the basis upon which their REP is calculated. As such, we have submitted a Workgroup Consultation Alternative Request that proposes generators submit their own REP price. Please see below and the attached form for further reasoning.

Standard Workgroup consultation questions

Q	Question	Response

Q	Question	Response
1	**Do you believe that CMP237 Original proposal or either of the potential options for change better facilitates the Applicable CUSC Objectives?**	No. Whilst we believe change is required, we do not believe CMP237 Original, nor either of the alternative options for change, adequately addresses the defect. The current model is outdated, better suited to a time where renewable generation on the system was sparse and the marginal costs of generators were similar. Presently the marginal costs of generators are very different, with some generators having negative marginal costs. The increase in renewable generation connected to the system is likely to lead to increased volatility and uncertainty around the MIP. This increasing volatility risk will most likely have an effect on the holding fees submitted by generators and some generators may price themselves out of the market. The current REP calculation is an inefficient way to cover this risk and will have a detrimental effect on National Grid's ability to properly procure Frequency Response. This increased cost will eventually be passed on to the end consumer. Ultimately, any proposal to amend the REP consultation should endeavour to solve this problem. However, we believe that the CMP237 solution will not comprehensively solve this problem as it only seeks to provide a solution for one class of generating technology. As such we do not believe that CMP237 will better facilitate Applicable CUSC objective (a). Specifically, it will not better enable National Grid to procure and utilise Frequency Response more efficiently, providing no benefits in terms of effective system operation. Furthermore, we believe that the current proposal favours a particular group of generation technologies – those classified as having no fuel cost. This therefore goes against Applicable CUSC objective (b) as it may distort competition between technologies defined as having a fuel cost and those defined as not having a fuel cost. To differentiate power stations by whether they have a fuel cost or not is crude way of categorising plant. More granular categorisation of the different marginal costs of plant is required to deliver a solution which better facilitates the relevant CUSC objectives. To this end, we are proposing an alternative solution in answer to question four (see attached form).

Q	Question	Response
2	**Do you support the proposed implementation approach?**	Yes, if approved the approach appears sensible.
3	**Do you have any other comments?**	We believe that, if this modification were to be implemented, all generators regardless of generation technology should be able to choose their stance on what their REP is based on, i.e. the current method or £0/MWh. If, for example, a generator believes its marginal costs are closer to £0/MWh, then it should have the option to choose £0/MWh, as opposed to National Grid centrally determining the status of each plant. Such optionality should be taken forward as a CUSC Alternative solution.
4	**Do you wish to raise a Workgroup Consultation Alternative request for the Workgroup to consider?**	Yes. In summary, all generators should be allowed to submit their own price to properly reflect their marginal cost. Please see attached a completed Workgroup Consultation Alternative Request form which provides more detail on our preferred solution.

Specific questions for CMP237

Q	Question	Response
5	**Do you agree with the proposed classification of generators with or without a fuel cost in table 3?**	No. The table should instead reflect marginal costs and not simply fuel costs. No convincing arguments are provided in the Workgroup consultation for classifying generators in this way. Indeed, on reviewing the consultation document, the issue does not appear to have been discussed by the Workgroup in any meaningful way. Considering only whether a generator has fuel costs or not is a particularly crude form of characterising different generators and only provides a partial consideration of the costs of Frequency Response utilisation.

Q	Question	Response
6	**If non fuel cost Users were able to choose what their REP is based on, do you think this choice should be made (i) monthly, (ii) annually or (iii) on a one off basis?**	Monthly. Fuel prices and other costs can vary so a generator should be able to choose what their REP is based on. A generator should not be committed to any one payment structure for a significant amount of time in the event of market conditions changing, as would be the case if changes were only allowed on a one off basis. Holding fees are currently updated by generators on a monthly basis, so it would be logical for updates to the REP to coincide with this. For the avoidance of doubt, we do not consider only 'non fuel cost' users should be allowed to choose what their REP is based on. All generators regardless of technology type should have this choice.
7	**Do you consider there to be any changes to your systems/processes required as a result of this modification? If so, would you propose any changes to the suggested transitional period?**	No. However, in the case of our proposed solution (please see answer to question four for details), a process for choosing the basis of the REP would be required. It is assumed that CUSC parties already know their own marginal cost and therefore calculating their own REP should not be overly burdensome.
8	**How do you think allowing non fuel cost Users to choose how their REP is calculated will affect costs to consumers?**	Giving 'non fuel cost' generators the ability to choose how their REP is calculated may reduce the risk premium factored into submitted holding prices, which would ultimately benefit consumers. However, only allowing one type of generator to choose its REP introduces the potential to distort competition, which may ultimately increase costs to consumers. The solution we propose to allow all generators to submit their own REP would amplify the benefits associated with reducing the risks and thus generator holding payments, whilst avoiding any disadvantages associated with the potential to distort competition.

CUSC Workgroup Consultation Response Proforma

CMP237 – Response Energy Payment for Low Fuel Cost Generation

Industry parties are invited to respond to this consultation expressing their views and supplying the rationale for those views, particularly in respect of any specific questions detailed below.

Please send your responses by **21st January 2015** to cusc.team@nationalgrid.com. Please note that any responses received after the deadline or sent to a different email address may not receive due consideration by the Workgroup.

Any queries on the content of the consultation should be addressed to Jade Clarke at jade.clarke@nationalgrid.com

These responses will be considered by the Workgroup at their next meeting at which members will also consider any Workgroup Consultation Alternative Requests. Where appropriate, the Workgroup will record your response and its consideration of it within the final Workgroup Report which is submitted to the CUSC Modifications Panel.

Respondent:	Paul Mott
Company Name:	EDF Energy
Please express your views regarding the Workgroup Consultation, including rationale. **(Please include any issues, suggestions or queries)**	For reference, the Applicable CUSC objectives are: (a) The efficient discharge by The Company of the obligations imposed upon it by the Act and the Transmission Licence. (b) 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. (c) Compliance with the Electricity Regulation and any relevant legally binding decision of the European Commission and/or the Agency.

Standard Workgroup consultation questions

Q	Question	Response
1	**Do you believe that CMP237 Original proposal or either of the potential options for change better facilitates the Applicable CUSC Objectives?**	Yes, the mod in its original form would slightly better facilitate CAO (b), effective competition in the generation and supply of electricity. This is because it would remove a (small) barrier to competition that the current Response Energy Payment methodology presents to generators that have low fuel costs – although the materiality is modest. As to the potential alternatives, see our comment in reply to question 6.
2	**Do you support the proposed implementation approach?**	We agree that there needs to be time for National Grid to contact the User, for existing generators, to amend their MSAs. We noted that the National Grid representative considers that the proposal could be implemented with a side letter to the MSA rather than needing to amend existing MSAs – generators should be happy with a side-letter to help the change come in. We note that Grid estimated that this process would take three months. We note that the workgroup nonetheless felt that an appropriate transition would leave a full clear month in between an Authority decision and the effective implementation of the Modification, with MSA's being amended over the next two months. We do not strongly object to this, but wonder if a little more time, such as three months notice to implementation, might be prudent, so that MSA's can (via a side-letter) be amended in time, to avoid uncertainty as to what REP regime generators are operating under, so that frequency response market participation can be efficient, and to give time for legal scrutiny of the side-letter by affected parties.
3	**Do you have any other comments?**	No
4	**Do you wish to raise a Workgroup Consultation Alternative request for the Workgroup to consider?**	No

Specific questions for CMP237

Q	Question	Response
5	**Do you agree with the proposed classification of generators with or without a fuel cost in table 3?**	The categorisation in table 3 seems appropriate, so that REP is not set to zero for "Electricity Storage Technologies" (inc. pumped storage, batteries) – they do have a fuel cost. We agree that all hydro, whether dammed or run of river, should be treated as having zero fuel cost, and hence have zero REP – just as they are in table 3 (in the Original, as proposed)

Q	Question	Response
6	**If non fuel cost Users were able to choose what their REP is based on, do you think this choice should be made (i) monthly, (ii) annually or (iii) on a one off basis?**	We do not agree with “non fuel cost Users” being able to choose what their REP is based on. For a start, it is necessary to agree what is a “non fuel cost user”. It is evident from workgroup discussions that some feel that dammed hydro falls in this category; others don’t, as they believe that rain and river water is free to collect. Given that this whole issue is of low materiality, the complexity of allowing user-choice in this area, doesn’t seem warranted. If there were a choice, annual seems best.
7	**Do you consider there to be any changes to your systems / processes required as a result of this modification? If so, would you propose any changes to the suggested transitional period?**	No significant system changes; no special transitional period needed in relation to our systems.
8	**How to you think allowing non fuel cost Users to choose how their REP is calculated will affect costs to consumers?**	See reply to question 6. Total monthly REP costs are from £100k to £200k per month, so allowing these users to access REP payments which they perhaps oughtn’t to, contrary to table 3 in the original proposal, will have no discernible impact on bills.

CUSC Workgroup Consultation Response Proforma

CMP237 – Response Energy Payment for Low Fuel Cost Generation

Industry parties are invited to respond to this consultation expressing their views and supplying the rationale for those views, particularly in respect of any specific questions detailed below.

Please send your responses by **21st January 2015** to cusc.team@nationalgrid.com. Please note that any responses received after the deadline or sent to a different email address may not receive due consideration by the Workgroup.

Any queries on the content of the consultation should be addressed to Jade Clarke at jade.clarke@nationalgrid.com

These responses will be considered by the Workgroup at their next meeting at which members will also consider any Workgroup Consultation Alternative Requests. Where appropriate, the Workgroup will record your response and its consideration of it within the final Workgroup Report which is submitted to the CUSC Modifications Panel.

Respondent:	James Anderson
Company Name:	ScottishPower Energy Management Ltd
Please express your views regarding the Workgroup Consultation, including rationale. **(Please include any issues, suggestions or queries)**	For reference, the Applicable CUSC objectives are: (a) The efficient discharge by The Company of the obligations imposed upon it by the Act and the Transmission Licence. (b) 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. (c) Compliance with the Electricity Regulation and any relevant legally binding decision of the European Commission and/or the Agency.

Standard Workgroup consultation questions

Q	Question	Response
1	**Do you believe that CMP237 Original proposal or either of the potential options for change better facilitates the Applicable CUSC Objectives?**	ScottishPower believes that the Original Proposal and both potential alternatives better facilitate the Applicable CUSC Objectives. By ensuring that low fuel cost generators are not required to make a response energy payment based upon an avoided fuel cost from which they do not benefit, the proposal will ensure that they are adequately compensated when required to provide Mandatory Frequency Response and will therefore better facilitate competition.
2	**Do you support the proposed implementation approach?**	We agree with the proposed implementation10working days after an Authority decision.
3	**Do you have any other comments?**	No
4	**Do you wish to raise a Workgroup Consultation Alternative request for the Workgroup to consider?**	No

Specific questions for CMP237

Q	Question	Response
5	**Do you agree with the proposed classification of generators with or without a fuel cost in table 3?**	Yes, We agree with the generator classifications proposed in Table 3 of the consultation document.
6	**If non fuel cost Users were able to choose what their REP is based on, do you think this choice should be made (i) monthly, (ii) annually or (iii) on a one off basis?**	If non fuel cost users were able to make this choice we believe that it should not be made more frequently than annually although we would expect most Users simply to make a one-off election.

Q	Question	Response
7	**Do you consider there to be any changes to your systems / processes required as a result of this modification? If so, would you propose any changes to the suggested transitional period?**	We do not envisage a requirement for any change to our systems or processes as a result of this modification.
8	**How to you think allowing non fuel cost Users to choose how their REP is calculated will affect costs to consumers?**	We do not anticipate that there will be any adverse impact upon costs to consumers from allowing Users to choose how their REP is calculated. By better reflecting the costs actually incurred/avoided in the REP, low fuel costs Users should be able to price their Holding Payments on a more economic basis thus enabling a more competitive price merit order to be established for frequency response.

CUSC Workgroup Consultation Response Proforma

CMP237 – Response Energy Payment for Low Fuel Cost Generation

Industry parties are invited to respond to this consultation expressing their views and supplying the rationale for those views, particularly in respect of any specific questions detailed below.

Please send your responses by **21st January 2015** to cusc.team@nationalgrid.com. Please note that any responses received after the deadline or sent to a different email address may not receive due consideration by the Workgroup.

Any queries on the content of the consultation should be addressed to Jade Clarke at jade.clarke@nationalgrid.com

These responses will be considered by the Workgroup at their next meeting at which members will also consider any Workgroup Consultation Alternative Requests. Where appropriate, the Workgroup will record your response and its consideration of it within the final Workgroup Report which is submitted to the CUSC Modifications Panel.

Respondent:	*Garth Graham (garth.graham@sse.com)*
Company Name:	*SSE*
Please express your views regarding the Workgroup Consultation, including rationale. **(Please include any issues, suggestions or queries)**	For reference, the Applicable CUSC objectives are: (a) The efficient discharge by The Company of the obligations imposed upon it by the Act and the Transmission Licence. (b) 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. (c) Compliance with the Electricity Regulation and any relevant legally binding decision of the European Commission and/or the Agency. See our response to Q1 below.

Standard Workgroup consultation questions

Q	Question	Response
1	**Do you believe that CMP237 Original proposal or either of the potential options for change better facilitates the Applicable CUSC Objectives?**	**[See separate Appendix 1]**
2	**Do you support the proposed implementation approach?**	We note the deliberations of the Workgroup as set out in paragraphs 4.26-4.33. We concur with the comments in para 4.28 as regards leaving a full clear month between an Authority approval and the practical implementation for Users in terms of their data submission(s) etc. In respect of the one off option; and notwithstanding our comments above under Q1; we agree with the Workgroup members' concerns (noted in para 4.29) as regards allowing sufficient time for National Grid and Users to amend existing MSAs. For the avoidance of doubt this process is highly unlikely to be achieved in circa one month. We note the comments in para 4.32. We concur that a short amount of time would be required to change FRBS. In respect of the Workgroup deliberations set out in para 4.33 we support openness and transparency and do not see why the option chosen by a generator should not be published; especially as those Users will themselves know how other Users are classified (by virtue, for example, of not being 'no fuel cost' generators).

Q	Question	Response
3	**Do you have any other comments?**	We have considered the CMP237 proposal in detail and set out our views to the questions posed in the consultation document elsewhere in this response and the associated Appendix 1. In addition to those comments we believe, on reflection, that if a different approach to REP is to be introduced then all CUSC Users should be treated equally – all of them should, when providing mandatory frequency response, be allowed the free choice as to whether they wish to price their mandatory frequency response provision either:- a) by way of the 'status quo' type approach of both (i) a monthly holding payment and (ii) a market based REP (using the current agreed formula); or b) by way of just a monthly holding payment (i.e. they receive no REP income, but rather have to factor this into their Holding Price). For the avoidance of doubt this choice would be a binary one of either (a) or (b). Making this choice on a Monthly basis (as long as the market is aware of those decisions) could, in our view, maximum competition in the provision of the mandatory frequency service. Furthermore, this free choice approach would, in our view, best align with both the letter and the spirt associated with the introduction of a competitive process for the provision of mandatory frequency response (as set out in CAP47) when compared with the Original.
4	**Do you wish to raise a Workgroup Consultation Alternative request for the Workgroup to consider?**	No

Specific questions for CMP237

Q	Question	Response

Q	Question	Response
5	**Do you agree with the proposed classification of generators with or without a fuel cost in table 3?**	**[See separate Appendix 1]**
6	**If non fuel cost Users were able to choose what their REP is based on, do you think this choice should be made (i) monthly, (ii) annually or (iii) on a one off basis?**	As noted in response to Q1 above, in our view it would be appropriate for the REP choice to be made Monthly, and this should be aligned with the monthly Holding Payment submission (i.e. a tick box option that has to be completed each month to either opt in or opt out for the corresponding Holding Payment month). This choice, once made, should be published.
7	**Do you consider there to be any changes to your systems / processes required as a result of this modification? If so, would you propose any changes to the suggested transitional period?**	Yes. Based on the information set out in the consultation document (which we note maybe subject to change) we would need to amend our processes and procedures as a result of this Modification.
8	**How to you think allowing non fuel cost Users to choose how their REP is calculated will affect costs to consumers?**	In our view allowing non fuel cost Users (based on the artificially classification set out in the CMP237 Original) to freely choose how their REP is calculated will lead to a lower cost for consumers than the alternative of not allowing this choice.

SSE CMP237 Appendix 1

[The pro forma does not facilitate long submissions – the responses to the following questions are part of our CMP237 response].

1	**Do you believe that CMP237 Original proposal or either of the potential options for change better facilitates the Applicable CUSC Objectives?**	For reference, the Applicable CUSC objectives are: (a) The efficient discharge by The Company of the obligations imposed upon it by the Act and the Transmission Licence. (b) 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. (c) Compliance with the Electricity Regulation and any relevant legally binding decision of the European Commission and/or the Agency.

For the avoidance of doubt all the options (the Original and the three potential options noted below) are, in our view, neutral with respect to Applicable Objective (c).

Original

In considering the Original proposal and its bettering of the Applicable CUSC Objectives it is important to consider the basis on which a competitive process for the provision of mandatory frequency response was introduced into the CUSC (by way of CAP47).

As Ofgem noted (on page 2 of its CAP47 decision letter):-

> "The Response Energy Payment is made for the expected volume of frequency response delivered. It is intended to compensate generators for Energy Imbalance exposure under the Balancing and Settlement Code (BSC) due to providing frequency response. **The mechanism also includes an element to compensate for the cost or avoided cost of energy production**." [emphasis added.]

This, in our view, is a key aspect that CMP237 glosses over as it (CMP237) assumes (falsely) that the REP is only to pay for fuel costs incurred or avoided by generators.

However, as Ofgem explicitly stated (and notwithstanding the energy imbalance exposure situation) the REP includes an element "…to compensate for the cost or avoided cost of energy production". In other words the REP is not just associated with fuel costs saved or incurred as CMP237 Original (incorrectly in our view) assumes..

It is also important to remember that the cost of energy production is not confined to just fuel cost. There are ongoing operational and maintenance costs (as well as financing costs) which when combined with fuel cost make up the cost of energy production.

Furthermore, it is also important to consider nuclear generation the classification of which, for the purposes of CMP237, appears to be as 'fuel cost'.

The World Nuclear Association notes on its website[1]:-

> "Fuel costs for nuclear plants are a minor proportion of total generating costs, though capital costs are greater than those for coal-fired plants and much greater than those for gas-fired plants"

They go on to note that:-

> "The US Nuclear Energy Institute suggests that for a coal-fired plant 78% of the cost [of electricity production] is the fuel, for a gas-fired plant the figure is 89%, and for nuclear the uranium is about 14%, or double that to include all front end costs."

We note (i) the title of the CMP237 Original Proposal is "Response Energy Payment for Low Fuel Cost Generation" [emphasis added] and (ii) the justification, by the Proposer, against Applicable Objective (b):-

"This modification proposal removes a barrier to competition that the current Response Energy Payment methodology presents to generators that have low fuel costs." [emphasis added].

This appears to have been overlooked in the consultation document, which focusses instead on the (artificial) classification of 'fuel cost' and 'no fuel cost'.

Moving on to consider the Applicable CUSC Objectives we consider that CMP237 Original does not better facilitate (a) or (b).

Applicable Objective (a)

With respect to (a) we note that in approving CAP47 the Authority made a number of references (under Applicable Objective (a)) to moving from a 'cost reflective charging principle' for the provision of mandatory frequency response to an approach which:-

> "….will provide more accurate market signals as to the value of the frequency response service which should provide service providers with reliable additional information on which to determine their investment plans in the long-term, thereby facilitating security of supply. Ofgem considers that the proposed market arrangements are likely to provide an incentive to both potential new entrants and current providers to invest in the service to the extent that such investment is

[1] http://www.world-nuclear.org/info/Economic-Aspects/Economics-of-Nuclear-Power/

> economically justified. This should ensure that the amount of frequency response capacity being made available to NGC would assist the efficient and secure operation of the transmission system in the long-term". [emphasis added]

It was stated, under Applicable Objective (a), for CAP47, that:-

> "Ofgem considers that if the current cost-based mandatory frequency response arrangements are not amended in the long-term, NGC's ability to balance the transmission system may be affected." [emphasis added]

In addition, with respect to Applicable Objective (a) for CAP47, it was noted that:-

> "Ofgem considers that value based payments will encourage innovation in the delivery of the service from existing and new providers and could attract interest from potential new providers that may not have a current mandatory requirement to provide the service (including demand side) in the short term". [emphasis added]

Finally, with respect to Applicable Objective (a), it was noted that the CAP47 (Alternative A):-

> "…will encourage efficiency and innovation and there will be significant benefits to customers in terms of increased security of supply through the provision of frequency response at competitive prices."

In our view CMP237 Original seeks, for certain types of generators only, to return to a 'cost reflective' rather than a 'value based' approach to the provision of mandatory frequency response – it seeks to return (for some generators only) to the pre CAP47 CUSC.

Not only is this discriminatory (as other generators are, artificially, and unjustifiably treated differently) but runs counter to the benefits associated with Applicable Objective (a) that Ofgem (and others) identified when the provision of mandatory frequency response was introduced into the CUSC (by way of CAP47).

In this regard it must be remembered that in addition to the normal CUSC consultations that, unusually, Ofgem undertook two separate consultation on CAP47 (in December 2003 and August 2004 respectively). This indicates to us that the introduction of a competitive process for the provision of mandatory frequency response was given the fullest possible consideration by Ofgem prior to the Authority approving the CAP 47 (Alternative A) change to the CUSC.

Finally, in passing, and by way of illustration, we observe that the CMP237 Original refers, in the identification of the defect, to 'cost' eight times (excluding, for obvious reasons, references to 'cost' in the title of Proposal itself). There is no reference in the CMP237 Proposal itself to the 'value' of the mandatory frequency response service.

For these reasons we conclude that CAP237 Original does not better facilitate the Applicable CUSC Objective (a).

Applicable Objective (b)

As with Objective (a), it is important when considering Applicable Objective (b) to consider the Authority views when they concluded that CAP47 (Alternative A) should be implemented.

For the sake of brevity we shall avoid repeating those helpful comments in detail here. Instead we reiterate our views under (a) (as they too apply under Objective (b)) that, in our view, CMP237 Original seeks, for certain types of generators only, to return to the pre CAP47 CUSC which – as Ofgem stated, did not better facilitate Applicable Objective (b), hence why they approved CAP47.

Notwithstanding that we note, in respect of the defect that CMP237 Original seeks to address, the Proposer states that:-

> "As such, the current methodology is tailored to these conventional generators, and does not consider the different financing approaches of generators with low or negative energy costs or those that receive additional financial incentives, e.g. Renewable Obligation Certificates (ROC) and, in the future, Feed In Tariff incentives."

However, this appears to be in contrast to Ofgem's view (when approving CAP47 for implementation). This is illustrated, for example, by the following quotes:-

> "…Ofgem considers that there could be more additional response available from a variety of providers such as non-conventional sources of generation which would add to available supply and liquidity in the mandatory frequency response market". [emphasis added]

> "Ofgem considers that in the longer-term the amount of frequency response capability is likely to increase particularly from more diverse sources of supply which would increase the amount of competition and liquidity in the mandatory frequency response market as proposed by [CAP47] Alternative Amendment A." [emphasis added]

> "Ofgem remains of the view that [CAP47] Alternative Amendment A could have a positive environmental impact by improving the efficiency of investment signals to CHPs and renewables and more accurately reflecting the value of the frequency response service provided by CHP and renewables in the event they are called upon to provide the mandatory frequency response service." [emphasis added]

This view was not just confined to Ofgem. As they note in the CAP47 decision letter:-

> "Two of these respondents [to Ofgem's December 2003 consultation] suggested that the frequency response market would also improve the economics of building and

operating renewables plants (in particular wind farms)... because it will enable them to accurately reflect the costs of providing mandatory frequency response."

In addition to these comments we also note that CMP237 Original would mandate that those generators that it (artificially) classifies as 'non fuel cost' could only recover all their costs of energy production via the monthly holding payment. This would place those generators at a competitive disadvantageous position when compared to all other generators that are classified as 'fuel cost' as those 'fuel cost' generators would be able to recover their costs via both the holding payment and the existing REP (of x 0.75 / 1.25 of the market price - as appropriate to the service they provide).

The competitive situation is most starkly shown in Figure 4 of the consultation document. This shows that hydro generation competes with other mandatory frequency response service provides (which are classified (artificially) for the purposes of CMP237 Original as 'fuel cost' such as coal, gas, nuclear, pump storage and oil) via the holding payment and REP. Figure 4 shows hydro generation clustering with the 'fuel cost' generation along the vertical. In stark contrast to this, wind generation can clearly be seen along the horizontal and no clustering pattern with 'fuel cost' generation can be easily discerned.

Furthermore, in our view CMP237 Original (re)introduces a barrier to competition not only by virtue of its discriminatory treatment of 'non fuel cost' generation buts also in undermining the long term investment signal that Ofgem highlighted would be provided to CUSC Users by the provision of mandatory frequency response services in accordance with CAP47.

In addition we note that the Proposer justified CMP237 Original, with respect to Applicable Objective (b), in the following terms:-

"This modification proposal removes a barrier to competition that the current Response Energy Payment methodology presents to generators that have low fuel costs." [emphasis added].

As we have noted above, CMP237 Original (as set out in the consultation document) demonstrably fails to do this as, for example, it treats low fuel cost (and low carbon) nuclear generation differently to other low cost (and low carbon) generation.

For these reasons we conclude that CAP237 Original does not better facilitate the Applicable CUSC Objective (b).

Hydro Storage (para 4.21)

Whilst this potential option does not better facilitate Applicable CUSC Objectives (a) and (b) when compared to the Baseline (for the reasons we set out above under 'Original') it does better facilitate Applicable CUSC Objectives (a) and (b) than the Original. This is because it does not discriminate in its treatment of this type of generation (and so is better in terms of (a)) and it allows this generation to recover the costs it has incurred (as we detail in our response to Q5 below – items (1)-(3)) which better facilitates (b).

Hydro Storage / Tidal Barrage / generation with batteries (para 4.22)

The potential option is similar to that noted in para 4.21 and therefore we have an identical view for this option; namely that whilst this potential option does not better facilitate Applicable CUSC Objectives (a) and (b) than the Baseline (for the reasons we set out above under 'Original') it does better facilitate Applicable CUSC Objectives (a) and (b) than the Original. This is because it does not discriminate in its treatment of this type of generation (and so is better in terms of (a)) and it allows this generation to recover the costs it has incurred (as we detail in our response to Q5 below – items (1)-(3)) which better facilitates (b).

Opt in/out (para 4.23)

In our view the opt in / opt out potential option does not better facilitate Applicable CUSC Objectives (a) and (b) when compared to the Baseline (for the reasons we set out above under 'Original').

This potential option does better facilitate Applicable CUSC Objectives (a) and (b) than the Original. This is because it does not discriminate in its treatment of certain types of generation (and so is better in terms of (a)) and it allows this generation to recover the costs it has incurred (as we detail in our response to Q5 below – items (1)-(3)) which better facilitates (b).

(i) Monthly / (ii) Annually / (iii) One Off

In our view it would be appropriate for the REP choice to be made Monthly, and this should be aligned with the monthly Holding Payment submission (i.e. a tick box option that has to be completed each month to either opt in or opt out for the corresponding Holding Payment month). This seeks to ensure equity of treatment between Users as some may be unable to factor in an Annual figure.

For those parties that can factor in an Annual figure there is no 'downside' to using the Monthly approach as they can easily use the data for 12 consecutive months (if they wish) which has the same 'annual' effect.

The One-Off basis is, in our view, to 'draconian' as circumstances may change. Allowing Users the flexibility to change should maximise competitive providers, and thus prices, in the provision of mandatory frequency response.

Any change in a Users' opt in / opt out status should be notified to all Users in a timely manner, particularly if the Monthly option is adopted. This ensures openness and transparency.

5	**Do you agree with the proposed classification of generators with or without a fuel cost in table 3?**	

No.

The following comments are in addition to (and should be read in conjunction with) our comments under Q1 above.

We do not agree with the proposed classification of generators as set out in Table 3.

The proposed classification is arbitrary in nature. No justification of the artificial classifications of various types of generation into the 'fuel cost' / 'no fuel cost' groupings suggested has been made.

We note that there is no reference to 'low fuel cost' (as per the title of the Modification and the justification against Applicable Objective (b) provided in the Proposal Form).

In particular the proposed classification of hydro generation with storage is wrong as it uses a far to simplistic approach which is a gross distortion of reality and leads to an unjustified treatment of hydro generation which is counter to the law on the ground of (i) discrimination and (ii) competition.

In regard to hydro generation with storage there is not, as suggested, a 'no fuel cost'. There are three main reasons for this:-

(1) Hydro generation has a volume of water held in storage. If this water is used for the purposes of providing response energy it cannot, by definition, then be used for other commercial energy uses. This is an opportunity cost – 'valuing' this stored fuel at 'no fuel cost' for the purposes of CMP237 Original is factually incorrect. It also runs counter to the Authority's approval letter for CAP47 which states that "Ofgem considers that value based payments will encourage innovation in the delivery of the service from existing and new providers and could attract interest from potential new providers that may not have a current mandatory requirement to provide the service (including demand side) in the short term".

(2) Hydro generation with storage incurs ongoing operational and maintenance costs associated with the dam(s) (there maybe more than one per hydro power station) tunnels / aqueducts / pipelines etc.. These costs are recovered from the revenues associated with the throughput from the power station. If some of the output from the water stored is provided to the System Operator for free (which is what 'no fuel cost' can amount to practically) then (i) these O&M costs are not recovered from those units of energy used for free by the SO and (ii) these costs therefore have to

recovered from the remaining (non frequency response) energy units produced. Put simply, say the hydro O&M costs is £100 and 1,000 units of energy are produced; i.e. £0.10 per unit produced. If 100 units are required for frequency response energy then the £100 now has to be recovered from just 900 units, leading to the price for that (non frequency response) energy being higher. This leads, in the simple example used here, to a unit price of £0.11 which means this hydro storage generation is less competitive than other generation in the provision of mandatory frequency response services. Thus it can be seen that CMP237 Original will distort competition in the generation and supply of electricity (and thus is counter to the Applicable CUSC Objective (b)).

(3) Hydro generation with storage, like all other generation (be they artificially classified on the basis of (an arbitrary) 'fuel cost' / 'no fuel cost') has financing cost. In a similar way to the O&M costs noted under (2) above, these costs are recovered from the revenues associated with the throughput from the power station. If some of the energy output from the water stored is provided to the System Operator for free (which is what 'no fuel cost' can amount to practically) then (i) these financing costs are not recovered from those units of energy used for free by the SO and (ii) they therefore have to recovered from the remaining (non frequency response) energy units produced. The simple example noted under (2) above applies equally to finance costs and the Original proposed approach means this hydro generation (as well as other 'no fuel cost' generation) is potentially less competitive than other (fuel cost classified) generation. Thus it can be seen that CMP237 Original will distort competition in the generation and supply of electricity (and thus is counter to the Applicable CUSC Objective(b)).

In addition to the above, we would also question the legality of this Original proposal as regards our property rights as set out under Article 1 of the First Protocol of the European Convention of Human Rights as its proposing to use our property assets without the ability for receiving a market based compensation (whilst allowing other generators to receive such market based compensation) for the Response Energy provided to the System Operator.

Furthermore we notice that the Original proposal is silent on how 'interconnectors' are to be classified. It seems to us that interconnectors might be said, based on the artificial approach adopted by the Proposer, to also have 'no fuel cost' and so could be included as such in Table 3.

Annex 5 – CUSC Workgroup Consultation Alternative Request

CUSC WORKGROUP CONSULTATION ALTERNATIVE REQUEST FORM

Please send your completed form along with your completed Workgroup Consultation Response to ####### by #####.

Please note that any responses received after the deadline may not receive due consideration by the Workgroup.

Respondent Name and contact details	*Joe Underwood: joseph.underwood@drax.com – Drax Power Limited*
CMP### [Add – Title of the Modification]	CMP237 – Response Energy Payment for Low Fuel Cost Generation
Capacity in which the WG Consultation Alternative Request is being raised : (i.e. CUSC Party, BSC Party or "National Consumer Council ")	CUSC party

Description of the Proposal for the Workgroup to consider*(mandatory by proposer)*:

We propose that each generator be able to choose their own REP. This will allow generators to take their total marginal cost into account, not just simply fuel cost.

Description of the difference(s) between your proposal compared to Original / Workgroup Alternative(s) *(mandatory by proposer)*:

The original proposal modifies the current model by introducing two prices (£0/MWh and the MIP*1.25/0.75) that the REP will be based upon, rather than a single price for all generators (MIP*1.25/0.75). We suggest that each generator be able to choose their own REP. Neither table 3 in the Workgroup Consultation report nor the current system in place adequately reflects the marginal costs of each generator.

Justification for the proposal (*including why the Original proposal / Workgroup Alternative(s) does not address the defect*) *(mandatory by proposer)*:

The current model is outdated, better suited to a time where renewable generation on the system was sparse and the marginal costs of generators were similar. Presently the marginal costs of generators are very different, with some generators having negative marginal costs. The increase in renewable generation connected to the system is likely to lead to increased volatility and uncertainty around the MIP. This increasing volatility risk will most likely have an effect on the holding fees submitted by generators and some generators may price themselves out of the market.

The current REP calculation is an inefficient way to cover this risk and will have a detrimental effect on National Grid's ability to properly procure Frequency Response. This increased cost will eventually be passed on to the end consumer. Ultimately, any proposal to amend the REP consultation should endeavour to solve this problem.

However, we believe that the CMP237 solution will not comprehensively solve this problem as it only seeks to provide a solution for one class of generating technology. As such we do not believe that CMP237 will better facilitate Applicable CUSC objective (a). Specifically, it will not better enable National Grid to procure and utilise Frequency Response more efficiently, providing no benefits in terms of effective system operation.

Furthermore, we believe that the current proposal favours a particular group of generation

technologies – those classified as having no fuel cost. This therefore goes against Applicable CUSC objective (b) as it may distort competition between technologies defined as having a fuel cost and those defined as not having a fuel cost. To differentiate power stations by whether they have a fuel cost or not is crude way of categorising plant. More granular categorisation of the different marginal costs of plant is required to deliver a solution which better facilitates the relevant CUSC objectives.

As such we believe that all generators regardless of technology type should be able to set their own REP. This will better facilitate Applicable CUSC Objectives (a) and (b), as allowing generators to set their own REP will allow them to better manage the risks noted above, reducing the holding payment prices submitted ceteris paribus. This will also likely maximise the quantity of plant providing cost effective Frequency Response. This will both improve the SO's procurement and utilisation of Frequency Response (thus ensuring more efficient system operation), as well as maximising effective competition between providers of Frequency Response. Both impacts will benefit end consumers.

Impact on the CUSC *(this should be given where possible)*:

Same as in original proposal – change to Section 4.

Impact on Core Industry Documentation *(this should be given where possible)*:

Same as in original proposal – None identified.

Impact on Computer Systems and Processes used by CUSC Parties *(this should be given where possible)*:

We request that this issue is discussed by the Workgroup. It is assumed that CUSC parties already know their own marginal cost and therefore calculating their own REP should not be an onerous task. Changes to National Grid's systems will also need to be discussed by the Workgroup. A detailed analysis of the impact and cost of our proposal on National Grid's systems is required to effectively evaluate this proposal.

Justification for the proposal with Reference to Applicable CUSC Objectives* *(mandatory by proposer)*:

This alternative proposal would allow National Grid to procure Frequency Response based upon the cost base of the generator, removing uniformity of cost-base assumptions and allowing generators to reflect the true costs of providing the service. This will improve cost effectiveness, better facilitating Applicable CUSC Objective (a).

In addition, the alternative proposal would better align prices against generators' actual marginal costs of generation, allowing cost efficiencies to be passed through to the consumer and introducing signals to reduce price where appropriate. This will promote competition in the delivery of Frequency Response, thereby better facilitating Applicable CUSC Objective (b).

Attachments (Yes/No): **If Yes, Title and No. of pages of each Attachment:**	No

Notes:

1. Applicable CUSC Objectives* - These are defined within the National Grid Electricity Transmission plc Licence under Standard Condition C10, paragraph 1. Reference should be made to this section when considering a proposed Modification.