5th May 2017

Re: Statutory consultation on change to the Capacity Market Rules 2014

Dear Sir/Madam,

Endeco Technologies welcomes the opportunity to respond to Ofgem's consultation on changes to the Capacity Market Rules. Please find our responses to the consultation questions below, as well as some further comments on particular rule change proposals.

CQ2: Should the SO be required to update the information included in a CMN and if so what should such updates include? Please clarify why participants need this information in a CMN and cannot access it readily elsewhere? (CP216)

Yes, the SO should be required to update the information included in a Capacity Market Notice.

It is unclear why Ofgem believes that a more precise set of instructions from the SO could complicate matters. Ofgem's response seems to imply that Capacity providers will become confused by responding to clear and direct instructions from the SO, whilst being left to their own devices to guess the SO's intent – when financial penalties will result from incorrect guesses – will bring about a more efficient solution. If providers face a financial penalty for an incorrect guess about when to provide capacity, then the SO should have to take more ownership over when it is predicting its need for capacity.

Capacity Market Notices do not contain enough information and it is only after the event that the Delivery Body decides whether or not the CMN related to an actual event:

- From the perspective of the Delivery Body when considering capacity requirements, this is not a problem, as a capacity provider should be able to deliver capacity whenever required.

- From the perspective of DSR providers, it can be a strong disincentive to deliver capacity if businesses must be shut off for what turns out to be a false alarm. The reputational risk to DSR providers is high, even though these actions are required in order to fulfil contractual obligations.

The fewer instances of provision of capacity, the better, as far as customers are concerned. The CMNs should contain more live information about what is required, and should not rely on the provider having to piece together a picture from BM system warnings.

Larger market players will have an unfair advantage in the amount of resources that they can dedicate to predicting the occurrences of NISMs/EMNs, and in the amount of market information that they will have access to over and above what most smaller players can be expected to have access to. This asymmetry in resources and information puts many CM Participants at a distinct disadvantage.

Has Ofgem considered the impact of not accepting this proposal on the costs of the BM? If action is unnecessarily taken by all CM parties – many of whom are not connected at the transmission connected level and not dispatchable via the BM – what actions may National Grid have to take in the BM, and at what cost, to rebalance the system?

We support the position taken by the ADE in this matter, and we also support the steps which they propose to make the CMNs more deterministic and useful.

CQ3: Do you think there are amendments that could be made to Schedule 4 which reduce the likelihood of future Rules changes being required if balancing service products are altered, which do not undermine the wider functioning of the Rules? (Of14)

National Grid's upcoming System Needs and Product Strategy Report will aim to overhaul the classifications of balancing services and what is expected of generation side and demand side resources.

We would expect Schedule 4 to have to be amended after this report as service categories may change dramatically.

CQ5: Do you agree this approach allows DSR providers of frequency response the ability to participate effectively during the testing regime? (Of14)

We disagree that the methodology outlined in Of14 will permit the better participation of DSR frequency response services in the CM. The reasons for the proposed methodologies are unclear, and the intentions for instituting the changes are also not clear. The costs of implementing such a change have not been examined, and Ofgem has not been clear enough about why it distrusts the data and contractual information provided by DSR FFR/EFR participants.

Please see below for our detailed comments on Of14.

CQ6: Do you agree that no change is required to the calculation of output during Satisfactory Performance Days and Stress Event periods once all frequency response services are included under Schedule 4? (Of14)

Please see below for our detailed comments on Of14.

CQ7: Do you agree that the current metering arrangements are suitable for DSR providers of frequency response services? (Of14)

Please see below for our detailed comments on Of14.

1. Minded-to positions to comment on:

CP215 (ADE)

We support this proposition from the ADE. We ask that in enacting this decision Ofgem makes clear the rights and obligations of the individual CMUs which are managed by the Dispatch Operator.

CP181 (E.ON)

Rejecting this proposal potentially excludes suitable loads from the CM. Consider the following two situations:

1) A person owns a site on which has been built a small solar farm, for which the person has a FIT income, and which also has a large collection of refrigeration units able to offer DSR capacity;
2) A person owns a site on which has been built a small solar farm, for which the person has a FIT income, and the same person owns a second site on which is a large collection of refrigeration units able to offer DSR capacity.

Currently, the person in the first case will not be able to participate in the CM, but the person in the second case will, by virtue of owing the same assets but under different MPANs.

Rule 13.2.5(a), amongst others, suggests that with suitable sum-metering at sites such as in the first case then appropriate load can be distinguished and used to provide capacity.

It is not Ofgem's responsibility to decide on the economic feasibility of sub-metering solutions. Sites which are too expensive to sub-meter will not participate, and those for which a reasonable solution can be found will be able to participate.

We recommend that Ofgem reconsiders the decision to reject CP181

CP216 (ADE)

Please see our response to consultation question CQ2 above.

2. Response to Of12: DSR Component Reallocation

We strongly support Ofgem's decision to permit the reallocation of components within DSR CMUs during a delivery year, as proposed by this amendment. However, there are some points which we would like to raise which directly relate to the content of Of12, and these are outlined below.

Comments on Of12

We base our comments on the following observation on how DSR CMUs tend to operate. A DSR CMU will likely be comprised of disparate and unconnected sites. It is likely that a DSR Aggregator, in forming a DSR CMU, will construct it by amalgamating its customers' sites together rather than amalgamating individual customers' assets. It is also more than likely that any components removed from or added to a DSR CMU will be whole customer sites rather than individual customer assets, as an efficient aggregator will seek to use the full potential of each customer site in the first instance.

1) We support as reasonable the number of potential changes in a delivery year which a capacity provider will be able to make.

2) Being able to alter DSR CMU Components during a delivery year acknowledges the nature of service aggregation. A customer of a DSR Aggregator may shut down one of their plant, or go out of business through no fault of the Aggregator. This rule change will give greater flexibility to the DSR Provider to manage a consistent delivery volume throughout an obligation period, as well as reducing the risk to a DSR Aggregator's customers that the actions of another customer will affect their capacity revenues.

3) We support the amendment to Rule 8.3.4(d) so that removed DSR CMU Components can participate again in the CM in later years. From a commercial standpoint, this was a necessary change. The provision of capacity from consumers of electricity will only ever be a secondary service. To have been potentially permanently excluded from the CM because of, for example, necessary maintenance work on an industrial site would not have encouraged long term DSR participation in the CM.

4) We support the position that Metering Tests should only be required of the new components of a DSR CMU, and not of the whole DSR CMU each time a change is made.

5) We do not support the need to conduct a DSR Test on the whole DSR CMU. Ofgem has proffered no evidence, other than a belief, to support a position that suggests that the addition of a new site to a DSR CMU will in any way affect the ability of the existing Components of that DSR CMU to deliver upon their capacity obligations. Swapping the

tested DSR capacity of the new component for the tested DSR capacity of the old component should be sufficient.

6) As we outlined above, DSR CMUs will generally be constructed of customer sites with no relation to one another. Retesting an entire DSR CMU each time a change is made is unnecessary and an undue burden on both DSR CMU providers and to business owners offering their services to the CM.

Credit Cover issues

On top of the views expressed above, it would appear that there is another key concern which Of12 raises obliquely, and which has not been addressed by the proposal. This relates to the liability faced by the DSR CMU Provider to provide credit cover for any DSR CMU to which a change is made for the duration of the period that one DSR Test Certificate is invalidated and a new DSR Test Certificate is issued.

- Rule 13.2.12 of the current CM Rules states that if the configuration of a DSR CMU changes then that DSR CMU will be an Unproven DSR CMU until such times as a new DSR Test Certificate has been issued. Adding new DSR CMU components to a DSR CMU is deemed not to change the configuration (in the current drafting), but the Rules are silent on the effect of removing a DSR CMU component.
- Rule 13.2.14 of the current CM Rules states that a DSR Test Certificate will be invalidated if the Metering Test Certificate specifies a different metering configuration than laid out in the DSR Test Certificate.
- Rule 13.3.11 of the current CM Rules states that a Metering Test Certificate will be invalidated if the metering configuration of the DSR CMU changes.

If a DSR CMU component is switched out via this amendment Of12, will the provider of that DSR CMU be liable under Regulation 59(2)(a) to provide credit cover to the Settlement Body until such times as the DSR Test Certificate is reissued and the Unproven DSR CMU becomes again a Proven DSR CMU?

We believe that it would be an undue burden to require a DSR CMU provider to have to maintain a credit cover facility for each DSR CMU which undergoes a change of components. It would be a huge commercial burden for any DSR capacity provider to have to face. Though we understand that a change to the Regulations would require engagement with BEIS, we ask

that this problem is taken into consideration when Of12 is put into effect.

Is it possible to draft the CM Rules in such a way as to acknowledge the changes made possible by this proposal Of12 whilst holding a DSR CMU provider free of the obligation to provide credit cover for the DSR CMU's temporary re-classification as an Unproven DSR CMU?

3. Response to Of14: Frequency Response services in the CM

Regulation 5(2)(b) of the Electricity Capacity Regulations 2014 states that DSR capacity may be provided "*by the pre-determined variation of the demand of a DSR customer for active power at a site in response to changing system frequency under the terms of a contract with the national system operator.*" However, the Capacity Market Rules do not currently permit such a form of response, as the existing DSR testing regime and the baselining process in Schedule 2 of the Rules are incompatible with the way in which DSR provides frequency response services.

We welcome Ofgem's attempts to integrate the provision of frequency response from DSR into the Capacity Market, however we have concerns about the methodologies which Ofgem are minded to implement to achieve this.

A chief concern is whether or not this new process has been costed, both in terms of how much the requirements will cost DSR CMU providers, and how much it will cost Ofgem to implement:

- The average per-MW value in the dynamic FFR market is roughly ten times the average per-MW T-4 auction clearing price. Proposal Of14 is seeking to require for CM service a level of metering and data provision identical to frequency response service for a tenth of the value. The costs to providers may be prohibitive, and it is unclear whether Ofgem have considered this.
- Ofgem are requesting that DSR CMU providers give them vast quantities of data, with no evidence that Ofgem are set up to manage and process those data flows. Have Ofgem considered the cost of such a data processing task?

Another chief concern is the surprising lack of trust exhibited by Ofgem in the fidelity of the information provided by FFR/EFR providers. Given that National Grid is at the same time both responsible for procuring balancing services as the System Operator and is the CM's Delivery Body, we find it strange that OF14 places such little trust in the data and testing

associated with FFR/EFR contracts. These are system-critical services which are measured to a high degree of accuracy, so it is unclear why Ofgem wishes to replicate so much work.

Declared Availability *vs* Contracted Output

It is important to state clearly what is being provided by an FFR contract, and what it is that the System Operator (SO) is purchasing via an FFR contract with a DSR Provider.

An FFR contract obliges a provider to deliver a frequency response service. However, it is not the actual energy delivered or absorbed by the FFR provider which is paid for by the SO, but rather it is the total *potential* to deliver or absorb energy which is rewarded: the provider's *availability*. This is the *Declared Availability* of Schedule 4.

For the duration of many FFR contracts, service is expected 24 hours per day. If a concurrently running capacity obligation required the DSR CMU to switch off in the event of a system stress event then this would put the DSR FFR provider in breach of its FFR contract, as the components would not have the availability to vary their output in response to the system frequency. This is acknowledged in Of14:

> *"Some frequency response contracts require 24-hour availability, and the simultaneous occurrence of frequency events and system stress events means that in most cases the output of these resources will be determined by the FFR/EFR contract – and this could be both high or low frequency response."*

We should note that Ofgem has provided no evidence that system stress events will correspond to periods of frequency instability. A 24 hour FFR/EFR contract will require the 24 hour provision of availability, which may not involve the delivery of very much energy onto the system if the frequency is relatively stable.

Also, a 24 hour FFR/EFR contract will *always* be responding (or will always be able to respond) to frequency events. The system frequency is not a static thing, and dynamic contracts in particular will be perpetually varying the output of their portfolios. A DSR FFR contract obliges a volume of load to remain in a state of readiness to respond proportionately to changes in the system frequency.

- A provider of *static* response must maintain the capability to respond to a frequency trigger.
- A provider of *dynamic* response must respond in a linearly proportionate way to changes in frequency, with zero response in the deadband up to 100% response by 50±0.5Hz.

Given that the system frequency is usually well behaved, the actual power delivered onto, or taken from, the system – the *Contracted Output* of Schedule 4 – of an FFR provider tends to

be quite small. As such, the actual energy delivered by a DSR FFR provider during a system stress event may very well be negligible and yet no contracts should be breached.

The SO must hold and maintain a given quantity of frequency response availability at all times so that if the system frequency deviates more than ±0.5Hz away from 50Hz then actions can be taken quickly to restore it. In the case where system conditions are such that the SO must disconnect demand, an event which would precipitate a CM system stress event, then the SO is required by the SQSS to hold up to 1,800MW of frequency response availability. This is a volume of power which, if provided by generators, cannot be fully dispatched, or, if provided by DSR, cannot be fully switched off (unless the system frequency fell to 49.5Hz or below for an extended time). To be so would be in breach of the frequency response contracts.

Since September 2005 there have been 505 tenders accepted in the FFR market for both static and dynamic provision of frequency response and none of them have included a utilisation payment, or as the FFR market calls it a "*Response Energy Payment*". None of these 505 contracts have been directly rewarded for the energy that they take off or put onto the system. Payments are instead made in relation to a provider's *availability*, or how much response could be delivered at defined speeds for defined time periods when the frequency deviates by ±0.5Hz, and not for the amount of power actually delivered over the duration of the FFR contract.

EFR service as a Relevant Balancing Service

We fully support the inclusion of Enhanced Frequency Response (EFR) in the list of Relevant Balancing Services under Schedule 4 of the Capacity Market Rules.

The services in this list offer the System Operator a vital pool of availability, able to respond within seconds to changes in the system frequency. EFR services should be rewarded in the same way as Firm Frequency Response (FFR) services.

De-rating factor

In the situation where DSR provides capacity by delivering a dynamic FFR services, we agree with Ofgem's assessment that it would be inappropriate to apply a further de-rating factor to this volume.

In order to deliver Dynamic FFR a provider must undertake rigorous testing and perform second-by-second metering, generating 1,799 more data points per settlement period than the HH-metering requirements of the CM. Every site forming a component of an FFR Unit is tested independently and may not enter that FFR Unit until it passes the requisite prequalification tests. The criteria applied to the delivery of FFR availability are strict, and under-performance

penalties are readily applicable.

As such, the successful continued delivery of an FFR service should be sufficient to provide capacity at an adequately de-rated level without derating the service a second time.

Maximum potential capacity from an FFR Provider

We agree with the view in Of14 that an FFR provider should only be able to seek obligations in the capacity market up to the level of their Low Frequency Response capability. A DSR FFR Provider will seek to optimise the volume of Low Frequency Response from its customers, and, for any portfolio of sites seeking both Capacity and FFR obligations, the relevant *capability* for the former will be the Low Frequency Response *availability* of the latter.

Figure 1 in Of14 is from the Enhanced Frequency Response documentation, and represents the response from storage or generators. DSR frequency response services *decrease* their output as the frequency *decreases* below 50Hz. However, the concept is similar, and DSR FFR would operate in the range of '*C to A'* in Figure 1.

Nature of FFR tender process

As it currently functions, the FFR market operates so that when a participant enters a tender for the provision of service, then that service will commence no sooner than one month after the tender date:

- Tenders are for a discrete number of service provision blocks, each of which is one month long;
- It is uncommon for tenders to be awarded for periods of ≥12 months:
    - Only 13 out of 505 successful individual FFR tenders have ever been awarded durations of ≥12 months;
    - 9 out of these 13 tenders were awarded to the Pumped Storage facility Dinorwig alone;
    - On 10 further occasions, National Grid has awarded bundles of shorter but consecutive contracts to make up service blocks of 12 months (on 3 occasions) or 24 months (on 7 occasions);
    - Together, these longer contracts constitute only 11.3% of all individual tenders won in the FFR market;

- It is the policy of the FFR market not to award tenders which request a service start date more than 6 months out from the date of the tender round.

Given that the Capacity Market awards contracts up to 4 years in advance for T-4 auctions, and the prequalification window for T-1 auctions closes up to 14 months before delivery, we ask that Ofgem clarifies its position in Of14 on whether a DSR provider will be able to prequalify for the CM as an Unproven DSR CMU and still aim to deliver capacity by providing frequency response, following Regulation 5(2)(b), in order that it can obtain a relevant DSR FFR agreement closer to the point of service delivery.

Adequately capturing information in existing contracts

Another issue which must be addressed with Of14 is a future requirement on DSR providers to furnish the Delivery Body with details of any contracts relating to the provision of balancing services. Given the points outlined above, this will more than likely be impossible for FFR providers until close to the point of delivery. Of14 states that:

> "*We propose that for all types of technology, providers of frequency response will provide information during the prequalification process detailing their balancing services obligations, including the type of service they provide and the key terms of their contract."*

There are several issues with this request which we ask Ofgem to consider:

- As per the outline above regarding how the FFR tender market operates, a prospective CM participant, but for a handful of rare exceptions, will not possess an FFR contract at the point of prequalification for the CM.
- The SO ensures that all FFR participants operate to the same standards, and all must adhere to the same rigorous set of prequalification testing procedures. The Grid Code, the CUSC, the SQSS, the FFR Standard Terms and Conditions, as well as the FFR testing procedures for DSR and battery technologies are all available to the Delivery Body in advance. **Does Ofgem consider this information sufficient for the Delivery Body's needs**?
- Any tender ultimately awarded to an FFR provider will include the volume of response and the duration of the contract. This information will not be available to the vast majority of FFR providers until after prequalification.
- **Will it be possible to prequalify for the CM and provide these details at a later date, as currently the case with prequalifying as an Unproven DSR CMU and declaring volume before service commencement?**

- Consider the situation whereby a customer wishes to use its loads for both the provision of capacity and for the delivery of FFR, and wherein the customer wishes to contract with *two separate* DSR Aggregators to perform these services. The CM Aggregator will not necessarily have access to the details of the contract held by the FFR Aggregator. As things stand, the FFR Aggregator is under no obligation to share with the CM Aggregator its private contract, which will be between it and the SO, and not between it and the customer. **How does Ofgem wish to resolve such issues?**

Capacity delivered as a consequence of frequency response

Rule 8.5.2(b) describes the Adjusted Load Following Capacity Obligation (ALFCO) for a CMU providing a Relevant Balancing Service, as listed in Schedule 4 of the CM Rules, as:

$$ALFCO_{ij} = LFCO_{ij} - \beta\left(Declared\_Availability_{ij} - Contracted\_Output_{ij}\right)$$

Where:

- $ALFCO_{ij}$ is the Adjusted Load Following Capacity Obligation for CMU 'i' in settlement period 'j'
- $LFCO_{ij}$ is the Load Following Capacity Obligation, as described by Rule 8.5.3
- β = 1 if the DSR CMU 'i' is providing a Relevant Balancing Service during settlement period 'j'
- $Declared\_Availability_{ij}$ is the maximum volume of output from the frequency response unit 'i'
- $Contracted\_Output_{ij}$ is the actual delivered energy of DSR CMU 'i' during a settlement period 'j'

For the delivery of FFR, for instance, $ALFCO_{ij} = Contracted\_Output_{ij}$ in the case where $LFCO_{ij} = Declared\_Availability_{ij}$. This would be the case where a DSR Provider offered into the CM the volume it provides to the FFR market as Low Frequency Response (and no adjustments are made to the value of $LFCO_{ij}$ as per Rules 8.5.3 and 8.5.3A). The Rules as they stand account for the successful delivery of a capacity obligation as the delivery of small adjustments of the DSR CMU portfolio to account for changes in system frequency.

Paragraph 4A.12 of the FFR Standard Terms and Conditions permits no other service to be simultaneously provided from DSR assets which are contracted to provide FFR if such services would inhibit the delivery of frequency response. As such, it must be the CM Rules which adjust capacity obligations to account for a CMU's delivery of frequency response (Rule 8.5), rather than adjusting FFR obligations to account for capacity provision. This follows the model set in the Balancing Mechanism (BM) to calculate a BM Unit's imbalance position.

The Balancing Mechanism permits the provision of system actions to be taken into consideration when a BM Unit's imbalance position is calculated. This includes both *accepted Bids and Offers*, which move a BM Unit into a position where it can provide frequency response, and the *Applicable Balancing Services Volume Data (ABSVD)*, which corrects in arrears a BM Unit's actual output to account for frequency-following actions. Actions taken to manage system security are therefore deemed not to put a BM Unit into an imbalanced

position.

The CM Rules have, in this regard, when considering the delivery of the CM obligations of a DSR CMU providing frequency response, taken the *ABSVD*-like component into account in the form of the Contracted_Output$_{ij}$ variable, and the *Bid Offer Acceptances*-like component into account in the form of the Declared_Availability$_{ij}$ variable.

At the point of a system stress event, the CM Rules currently acknowledge that the provision of FFR will mean that a DSR CMU will not need to reduce its electricity consumption and yet still meet its obligations. We understand the ALFCO$_{ij}$ adjustment to be an acknowledgement that the delivery of FFR services supersedes the delivery of capacity obligations, and that if a system stress event happens during a window that overlaps a window in which a DSR FFR provider holds an active FFR agreement, then the participating DSR CMU Components will not be required to reduce their consumption by the volume stated in the capacity obligation.

We accept the position that if a DSR FFR provider fails to fully deliver on their FFR obligations then that provider, if they also have a CM obligation based on the same DSR FFR portfolio, will also have by default failed to have delivered on their CM obligations, and penalties should follow. In that instance, LFCO$_{ij}$ will no longer equal Declared_Availability$_{ij}$.

Having an FFR/EFR contract vs Not having an FFR/EFR contract

It is right for Ofgem to consider the three situations relating to the provision of capacity by providers delivering frequency response:

1) Capacity delivered by the provision of frequency response
2) Capacity delivered by the same DSR CMU outside of a frequency response contract
3) Third-party capacity enabled due to DSR frequency response services

Ofgem should consider the ability of a provider to deliver capacity under Regulation 5(2)(b), and also what happens when such a provider does not hold an FFR/EFR contract whilst holding a capacity obligation. Ofgem should also clearly justify their views on the volume of capacity able to be provided by third-parties as a result of the provision of DSR FFR/EFR.

(1) – Capacity delivered whilst holding an FFR contract

We welcome Ofgem's moves to update the CM Rules to permit the provision of capacity from DSR CMUs by the delivery of frequency response under Regulation 5(2)(b). Our comments on this process are elsewhere in this response.

(2) – Capacity delivered outside of an FFR contract

Considering that Ofgem's minded-to position is to permit only the volume of Low Frequency Response in a DSR CMU provider's FFR contract as the applicable volume for capacity provision, and given our comments above about the availability of long term contracts from National Grid in the FFR market, there is a possibility that a provider will prequalify an Unproven DSR CMU for a capacity delivery year, win a contract in a capacity auction, win an FFR contract for fewer than 12 months, and then fail to win other FFR contracts for the remaining months of the CM obligation. The CM Rules must be clear and must not remain silent on what this would imply for the DSR CMU provider.

In order to provide DSR FFR, equipment and instrumentation must be installed on customers' sites and thoroughly tested. The absence of an FFR contract for a particular delivery month in no way affects a given site's ability to respond to frequency or to deliver capacity. The site will still be under the control of the DSR Aggregator's instructions to precisely the same extent as it was when an FFR contract was in existence.

We propose that, should such a circumstance happen, then if a system stress event occurs the DSR CMU is obliged to reduce consumption by the MW value of the original CM contract (linked to the volume of the original FFR contracts) with no further obligations, as if the system frequency had fallen to 49.5Hz for the duration of the system stress event. This capability should be readily provable from the data collected by the FFR metering equipment. The ability to reduce demand by the stated volume of MW is part and parcel of the FFR contracts which the DSR provider was up until this point in possession of.

Given the much greater value of FFR contracts over CM contracts – up to ten times more valuable – the DSR provider will be seeking to obtain another contract as soon as possible, and thus will maintain the same level of capability. It is unnecessary for the CM Rules to require other sources of data than those already being provided by the FFR metering equipment, and to place further obligations on parties whose technical capabilities have demonstrably not changed.

We request that Ofgem make clear their intention for the obligations on DSR CMU parties in the situation where a frequency response contract is not won in the middle of a capacity obligation period.

(3) – Third-party capacity provision

Mandatory CMUs are expected to automatically participate in the CM, and must opt-out if they wish not to participate under Rule 3.11. These licenced generators will be BM Participants and

will be obliged under the Grid Code to provide Mandatory Frequency Response when needed by the SO.

Every MW of DSR frequency response procured by the SO in the FFR market is one fewer MW which the SO must call upon in the BM during periods of frequency instability (or buy from BMUs in the FFR market). In this regard DSR FFR desterilises volumes of capacity equal to the size of their Low Frequency Response capability.

The Existing CMUs will now be able to provide MW of capacity which would otherwise have been sterilised – i.e. de-loaded by Bid Offer Acceptances in the BM in order that they have headroom and footroom to vary their output in response to the system frequency – and unable to provide capacity during a stress event. As frequency response is procured by the SO on the basis of current need – first in the FFR market and then up to the level of requirement in the BM – then the amount of third-party capacity enabled by DSR FFR will be equal to the Low Frequency Response capability of the related FFR contracts.

New Baselining methodology for FFR

We support Ofgem's intent to provide a way for DSR CMUs to deliver capacity through the provision of frequency response under Regulation 5(2)(b). However, we do not agree with Ofgem's proposal of creating a new baselining methodology. It is unclear whether Ofgem have considered the costs it will face to implement a parallel system of monitoring for the behaviour of DSR FFR units.

Of14 aims to create a new baselining methodology for DSR CMUs which want to provide capacity by delivering FFR. A frequency response DSR CMU will not be responding to system stress events like a normal DSR CMU – it will not perform step-change actions in response to a system stress event – so there is no real action against which a new baseline methodology is needed to make a comparison.

Is it Ofgem's intention to create a new DSR CMU frequency response baseline in order to measure capacity obligations during periods when the DSR CMU provider no longer holds a frequency response contract? It is unclear whether this is the case.

Ofgem for a time considered using the DSR FFR contract as a baseline for CM actions:

> *"We considered removing the baselining requirement and by extension the testing regime for DSR CMUs under contracts for frequency response provision, and instead taking the 'declared availability' of the component as 'proven' via contract. We have decided not to take this option forward, given a baseline would still need to be developed to determine output against any obligation, and because varying the*

approach taken in different phases of the CM process adds complexity."

We query Ofgem's decision not to do this and ask that Ofgem reconsiders using the data provided by the DSR FFR contract as the basis for judging CM obligations. As discussed above, a DSR FFR unit providing a 24 hour/day frequency response service will not respond to a system stress event by switching off its consumption, a point accepted by Ofgem:

> *"…the simultaneous occurrence of frequency events and system stress events means that in most cases the output of these resources will be determined by their FFR/EFR contract…"*

Where a frequency response contract is no longer in place for the DSR CMU provider, then, as stated above, neither the data provision nor the technical capabilities of the DSR FFR sites are affected. Adequate data can be provided to the Delivery Body without having to wait for the system frequency to enter the deadband, so that a continuous calculation of availability is possible.

It is unclear from Ofgem's line of reasoning why a new frequency response CM baseline is needed to judge against CM obligations:

- Declared Availability will be, by Of14, the maximum volume of any capacity agreements which a DSR FFR provider will be able to apply for in a CM auction. It will also almost always cancel out the Load Following Capacity Obligation of the related DSR CMU. On occasions when it does not, the metering data from the FFR contract should suffice to calculate the penalties in the CM faced by the provider.

- For a DSR CMU providing capacity through frequency response under Regulation 5(2)(b) the levels of consumption in the period before a stress event will not be significantly different to those during the stress event. Consumption will not exhibit a step-change like a normal DSR CMU, as the holder of a frequency response contract is obliged to maintain a level of *availability*, and is not rewarded specifically for the delivery of power onto the system.

- This means that a DSR CMU providing frequency response will not be judged by comparing a step-change reduction in demand against a baseline. It will be the metering data from the FFR contract which will provide the Declared Availability and Contracted Output data in order to calculate a DSR CMU's ALFCO.

- In the case where there are some hours per day, or some months per delivery year, during which the DSR CMU provider does not hold a DSR FFR contract, then Ofgem is correct to require a baseline procedure, and to require the DSR CMU provider to produce step-changes in consumption during system stress events like a normal DSR CMU. We note that the assets under DSR FFR control do not necessarily have to be responding to frequency if no DSR FFR contract is in force, and so the FFR equipment

can more simply monitor and meter their capacity-providing capabilities. We request that Ofgem consider that step-changes are performed in these periods using the DSR FFR equipment to switch components off for the duration of system stress events (as if the system frequency went to 49.5Hz for the duration of the event) and that the continuous FFR metering is used as a baseline for the service.

- Of14 states that the baselining methodology can "*be used to determine the level of reduction in demand during the relevant settlement period*". If any DSR CMU is providing capacity under Regulation 5(2)(b), then this requirement is redundant. A DSR FFR Unit cannot fully switch off for the required duration of a System Stress Event without being in breach of its FFR contract. There is no need for the Delivery Body to be observing "*the likely demand for a DSR CMU prior to a change of output prompted by frequency response delivery*", as it is the DSR FFR provider's availability, and not its output, which is the concern of an FFR contract.

- As noted above, DSR FFR desterilises volumes of capacity from Existing CMUs which would otherwise have to hold that volume in anticipation of frequency events. In this way, DSR FFR providers are providing capacity and should be rewarded.

- Of14 suggests that a new baselining methodology should be developed to "*mitigate any risk of baseline manipulation*". Employing an FFR contract as proof of baseline capability would avoid any risk of gaming as to have a contracted FFR volume already requires higher levels of proof service than is required in the CM.

The methodology proposed in Of14 implies that a DSR provider requires the system frequency to be within the FFR service deadband (set at 50±0.015Hz in the Grid Code) in order to take a sample of the portfolio's consumption to understand the usable volume of the DSR FFR portfolio. A DSR FFR provider should know for each second the volume that it has dispatched and the volume it has in reserve. The total available volume will be the sum of these two numbers. A meter can only sample what a device is consuming, and not what it is not consuming: the FFR provider will know the capabilities of each individual device *a priori*, and so there is nothing special about sampling consumption at any frequency point in order to understand availability.

FFR is a highly regulated and tested service. DSR Providers collect second by second data on each asset which forms part of a DSR FFR portfolio, and are rigorously tested before and during FFR service periods. It is unclear why Ofgem wants to set up a parallel metering and verification system for frequency response services, and why Ofgem does not wish to rely upon the data already provided to the SO.

> *"By identifying the level of demand at the DSR component when frequency is balanced and the component has not already varied demand, we are closest to identifying the*

operating level from which the provider will vary demand in order to meet any variation in frequency."

It is unclear why such information is required by Ofgem. As we have described, the frequency response actions of the DSR CMU component are unrelated to the occurrences of system stress events when the provider holds an active FFR contract. The energy which a DSR FFR unit delivers by way of responding to the system frequency is not the component of its service which represents the provision of capacity: it is the availability of the DSR FFR unit to deliver power which represents the provision of capacity. This availability level is set in the DSR FFR contract and monitored closely and continuously. In the instance where a DSR CMU provider does not hold an FFR contract, then the DSR CMU Components need not respond to an external frequency signal (they will not be being paid to do so, after all). The can instead respond to an internal frequency signal sent by the DSR CMU provider which remains at 50Hz for the duration of the period when no FFR contract is live, and which is then set to 49.5Hz for the duration of a system stress event.

Static Frequency Response - baselining

Of14 requests views on the suitability for the baselining methodology as applicable to static frequency response. As providers of static frequency response must continuously meter their loads, and given that they must undertake detailed FFR prequalification tests which are similar in nature to the CM Schedule 2 tests, then we suggest that the CM baselining regime is redundant for static FFR services. To implement it would be to repeat a process already undertaken, and done so for FFR with much greater metering fidelity than is required in the CM DSR tests.

As per above, we question Ofgem's decision to reject the FFR contract details and data provision as proof of capacity capability. Continuous second-by second metering is provided by FFR services and rigorous testing will have been carried out.

Yours sincerely,

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