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Dear Ben Smithers,

Frazer-Nash Consultancy's Response to Ofgem Consultation: Creating the Right Environment for Demand Side Response

Frazer-Nash Consultancy is a leading systems and engineering technology consultancy with much cross-industry experience, including many significant projects in the energy sector. As an organisation seeking to provide useful consultancy services for the demand-side response market, Frazer-Nash has received Ofgem's discussion paper on creating the right environment for demand-side response with interest and we are happy to provide the following response.

Introduction

As a background to our response, we have outlined a brief introduction to the nature of our work in the demand-side response market below.

We are currently developing a set of consultancy services to assist clients within the electricity transmission and distribution industry. Our experience in the demand-side response market to date has been as an intermediary between industrial customers and the system operator (SO), enabling customers to benefit from availability payments from the SO for the provision of balancing services.

Our focus has been on fast response schemes; as a result, the service we are developing involves a significant level of technical complexity. Once implemented, our technology will allow customers to shed loads distributed across a particular site that would not normally be a straightforward candidate for fast frequency response.

We have faced a number of challenges when undertaking this work, which, in combination with our systems engineering understanding, have been used to inform our response to this consultation. Our experience as a solution provider in this market has informed both the structure and content of our response.

Response

Precondition 1

Question 1 Are there any additional key challenges associated with revealing the value of demand-side response across the system? If so, please identify and explain these challenges.

Q1.1 Yes, we believe that it is important for Ofgem and others conducting work into determining the value of demand-side response to consider carefully the effects of uptake on future value. Specifically, it is possible that an increase in the uptake of demand-side response could reduce the incremental value of further demand-side response. If the uptake of demand-side response is rapid, whether this effect on value could be sudden and pronounced is a particular consideration. The larger the number of providers of demand-side response services the lower the value of such services is – it is not clear whether these effects have properly scoped and understood in current incentivisation schemes.

Question 2: Can current regulatory and commercial arrangements provide the means to secure demand-side response being delivered? If not, what will regulatory and commercial arrangements need to deliver in future?

Q2.1 No, we believe that more needs to be done to secure demand-side response being delivered.

Q2.2 The most accessible commercial arrangements available to the medium sized (15kW-150kW) light industrial operators, for whom we consult, are to tender to provide balancing services to the SO. However, these demand-side response services may provide additional parallel benefits to DNOs; therefore we suggest that commercial arrangements similar to those included as part of the balancing mechanism are set up by the DNOs.

Q2.3 Although the SO tenders for balancing services, the provision of these services is driven by the uptake of consumers. If the SO (or the DNOs) were to approach customers with power usage patterns suitable for particular demand-side services, then the delivery of these services might be accelerated.

Q2.4 A recent paper published by ENA on smart Demand Response¹ suggests that a demand response market operator (DRMO) be established for monitoring and verification of all the demand-side response mechanisms, to provide overall responsibility for optimum network balancing. We agree that this possibility should be explored, as without an overarching market operator service, the commercial arrangements could easily become very complex. This service would, however, need to be set up so that aggregators and other parties such as Frazer-Nash, who hold technical capability but are not a direct customer, can continue to provide a valuable contribution to the demand-side response market.

¹ Smart Demand Response: A Discussion Paper, Energy Networks Association

Question 3: Is current work on improving clarity around interactions between industry parties sufficient? If not, what further work is needed to provide this clarity?

Q3.1 No, we believe that further work needs to be done by Ofgem to present the interactions, particularly commercial ones, between industry parties in a more accessible and comprehensive way.

Q3.2 We have not found the commercial interactions to be transparent. We recently undertook an investigation into the commercial viability of a demand-side response scheme for reactive power. Information on the complexities of the charging structures placed on the DNOs was not easy to find or access, making it impractical to map the commercial opportunities to the obvious technical challenge.

Q3.3 Table 3 of the consultation recognises that any load levelling carried out by customers on the distribution networks will have a direct impact to the DNOs' network planning, regardless of who owns and controls the contract for the demand-side response. It is true, therefore, that DNOs need to be aware of any demand-side response arrangements in their network. However, it is also the case that details of DNOs' network planning and network loading activities would help customers optimise their demand-side response schemes.

Q3.4 Therefore we think it is important for the DNOs to directly engage more with potential customers, and the sooner that this can be done the better. Lines of communication need to be put in place both so that the DNOs are aware of new demand-side response schemes attached to their network and so that end users better understand network planning activities.

Q3.5 Lack of transparency of interactions, particularly commercial ones, between industry parties has been the largest barrier to us in successfully developing demand response services to the extent that we would have liked. Therefore we disagree with the level of importance attached to this challenge. We believe this should be high.

Precondition 2

Question 4: Are there any additional key challenges associated with effectively signalling the value of demand-side response to consumers? If so, please identify and explain these challenges.

Q4.1 No, we believe that Ofgem have identified the main challenges associated with effectively signalling the value of demand-side response to consumers.

Q4.2 With regard to Precondition 2, Key Challenge 1 – 'improving signals to customers', we believe that the signalling processes used in the SO's balancing services could be improved. The most lucrative of the balancing services tendered for by the SO is the FCDM service. The SO provides an FCDM box which contains the communications infrastructure required to set up signals to the customer, but its application is somewhat limited. This reduces the number of customers who can provide this service.

Q4.3 It is possible for a customer to design their own communications interface to the network and we believe that a customer taking this step would be beneficial to the industry. We are, however, unaware of this having been widely undertaken. This is likely due to customers' perceptions of the costs and risks associated with such a programme. The mechanisms to allow innovative, transmission-level projects to be delivered need to be considered in the light of the large capital outlays required for many such projects.

Question 5: Do you agree that signals to customers need to improve in order for customers to realise the full value of demand-side response? Does improving these signals require incremental adaptation of current arrangements, or a new set of arrangements?

Q5.1 Yes, we agree that signals to customers need to improve in order for customers to realise the full value of demand-side response.

Q5.2 There is currently no penalty for customers with a low load factor: the overall system costs are distributed through DUoS charges, as stated in section 3.57 of the consultation. This means that market pressure to take part in demand-side response schemes is low. Customers could be incentivised to take part in demand response services by changing this pricing structure.

Q5.3 Furthermore, it is unclear as to whether or not a domestic customer would, in fact, be able to implement a profitable, fully flexible demand-side response system bearing in mind the current restrictions of the CDCM model. Options assessments should be carried out to evaluate potential adaptation of the CDCM.

Q5.4 Additionally, options assessments could be used to investigate the viability of installing technologies to facilitate demand-side response along with new connections. This would prove a complex technical and regulatory challenge, and would significantly change the commercial arrangements within the demand-side response market. However, this may provide the necessary step change to bring about large scale adoption and integration of demand-side services.

Question 6: To what extent can current or new arrangements better accommodate cross-party impacts resulting from the use of demand-side response?

No response.

Precondition 3

Question 7: Are there any additional key challenges associated with customer awareness and access to opportunities around demand-side response? If so please identify and explain these challenges.

No response.

Question 8: Is any additional work needed to explore the role of third parties in helping customers to access and assess demand-side response offerings?

No response.

Conclusions
<p>Question 9: Are there additional preconditions for delivering the right environment for demand-side response? If so, please explain what these are and why they are important, as well as attaching a priority relative to those challenges we have already identified.</p>
<p>Q9.1 No, we believe that Ofgem articulate the preconditions that current arrangements need to meet.</p>
<p>Question 10: Do you agree with the priority and timing we have attached to addressing each of the key challenges identified above?</p>
<p>Q10.1 Mostly: we agree with the priorities Ofgem have attached across the preconditions as a whole.</p> <p>Q10.2 As mentioned in Q3.5 above, we disagree with the importance attached to Precondition 1, Key Challenge 3 – ‘clarifying the interactions between industry parties’. We believe this should be high.</p>

We hope that you find the issues discussed in our response are engaging. We are keen to discuss these further with you over the coming months. In the meantime, if you have any questions about this response, please contact Rebecca Threlfall, r.threlfall@fnc.co.uk, David McNaught, d.mcnaught@fnc.co.uk or Philip Williams, pa.williams@fnc.co.uk.

Yours sincerely

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