



# Consultation Response

By email to [smartermarkets@ofgem.gov.uk](mailto:smartermarkets@ofgem.gov.uk)

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Dear Ben

## **ELEXON's response to 'Creating the right environment for demand-side response' consultation**

We welcome the opportunity to comment on Ofgem's consultation on creating the right environment for demand side response (DSR<sup>1</sup>). ELEXON is keen to participate in this area and assist Ofgem with this important piece of work. We believe that the Settlement arrangements can underpin and facilitate future DSR arrangements and release the significant benefits that DSR can bring to the consumer. We will work with Ofgem to ensure Settlement is transformed to maximise those benefits.

### **General comments**

We recognise that the consultation concentrates on creating an environment within which DSR is enabled. We support this as, based on our discussions with industry, we believe the benefits of DSR to 'GB plc.' are very significant (potentially tens of billions). Therefore, new market arrangements need to be developed in a timely manner (urgent, especially in light of Ofgem's Electricity Capacity Assessment Report 2013 to the Secretary of State which suggests that the risks to electricity security of supply over the next six winters have increased, 27 June 2013) with the right Settlement processes at the heart of these. We suggest that a framework is established which sets out a robust structure which develops and implements new DSR trading arrangements (to deliver DSR benefits to customers). It should give all interested parties the opportunity to participate in the process (similar to the Review of the Electricity Trading arrangements (RETA, which brought about the BSC arrangements), e.g. DSRETA, with work groups developing requirements lead by Ofgem and DECC. The process would also need to recognise, consolidate and co-ordinate the different work areas on DSR, WS6, Smart Demand Forum, LCNF, Future Trading Arrangements, etc. under one framework.

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<sup>1</sup> We note that further consultation around utilisation of DSR as a potential balancing product available to National Grid has been issued on 27 June<sup>1</sup>. We have been unable to assess this in the preparation of our response to this consultation but will endeavour to consider any implications when reviewing new consultations.



# Consultation Response

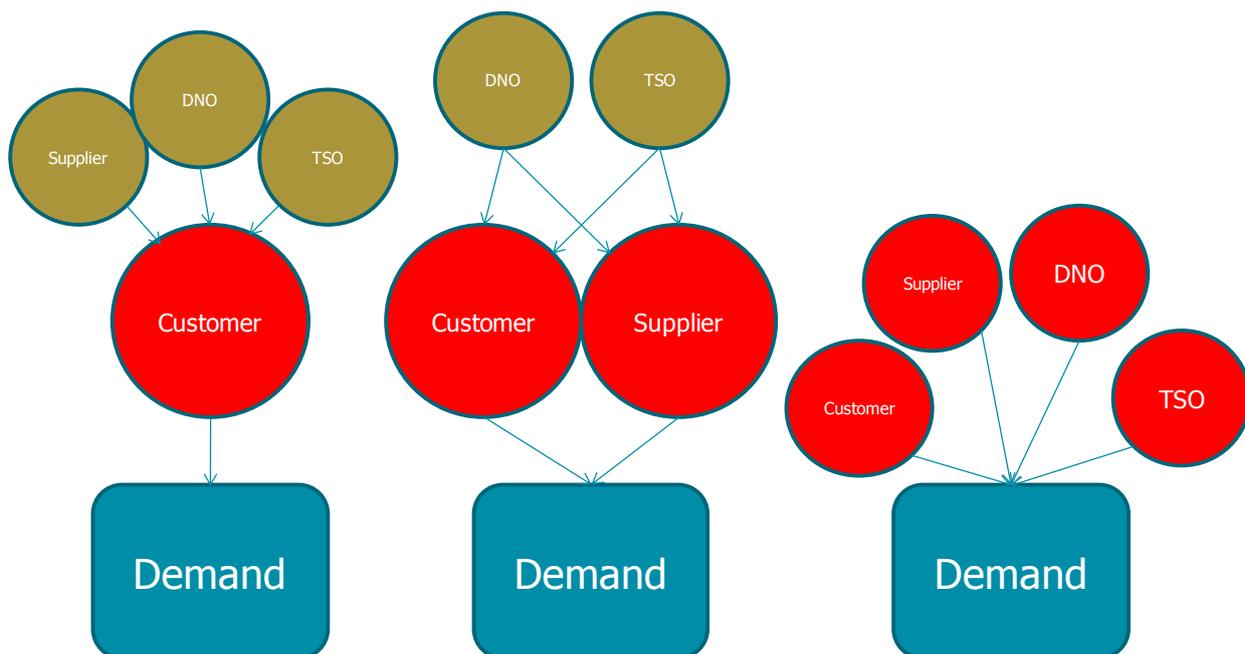
This framework would aim to establish new market arrangements (see our Smarter Markets consultation response) recognising the need for coordination between the many different actors (customers, suppliers, aggregators, Distribution Network Operators (DNOs), Transmission System Operators and any new stakeholders). These different actors will have varied and potentially conflicting interests in utilising DSR. Efficient use of DSR should be facilitated by having a single DSR market framework and settlement arrangements where all these interests can be aligned and supported by an agreed common approach across the country. A centrally co-ordinated approach will be more efficient than, say, a bilateral contracting or Distribution Network area specific (or Transmission System Operator) approach, due to the interactions between parties. It should also incorporate any findings from existing supplier/network studies (or LCNF trials).

Critically, one of the key issues of the current market arrangements, that constrains the efficient utilisation of DSR, is the lack of a central co-ordination mechanism between the various actors.

For example, the diagram below shows the various actors who could or would be interested in utilising DSR. There are a number of different options that allow these actors to either:

- utilise DSR directly, e.g. via smart meter communications; or
- indirectly influence demand response, e.g. via supply contract time of use tariffs.

The diagram shows options where the actors have direct access to the customer demand (actors shown in red) or indirect access via another actor (actors shown in khaki). Please note this does not show other third party actors such as aggregators or other potential new market participants.





# Consultation Response

Under the current regulatory and commercial arrangements (prior to smart metering roll out) the end customer and in some cases the customer's supplier (via Teleswitching for example) has direct control of a customer's demand.

To fully utilise the potential for demand we should explore the different interests that the different actors have in DSR and then resolve the conflicts of interest that prevent efficient utilisation (for example third party access to customer demand might cause a BSC-based 'energy imbalance' exposure for that customer's supplier). Uncertainty in the arrangements for DSR can lead to inefficient outcomes, e.g. a network reinforcement when DSR would be a more efficient and equally effective outcome.

We believe that Ofgem and/or DECC should develop a regulatory and cross party framework designed to deliver the benefits of DSR. We do not believe such arrangements are likely to occur if parties are acting unilaterally.

We believe that the following issues should also be explored for the short/medium term:

- Whether the treatment of DNOs in the BSC should recognise their increasingly active role in smart grids and in particular any call-off by DNOs of DSR – currently the BSC recognises demand response actions by the System Operator in the Balancing Mechanism and/or by use of adjustments to Balancing Services volumes, but this does not currently extend to DNO actions; and
- 'codification' of interactions between the various actors involved in DSR.

Whilst we feel the codification of industry processes to support DSR is necessary, we would not favour creating another additional code. Instead DSR interactions can be delivered within the existing codes. Furthermore, we would seek the consolidation of codes to bring about efficiencies for regulation, market participants and ultimately benefits to the end consumer.

We also have a few comments on the consultation document and the approach to enabling the right preconditions for the market to establish its own DSR arrangements, For example:

- In section 2, the document shows how demand side is used across the electricity system. It would be beneficial to your work to extend this analysis to recognise the value to be realised by the customer, e.g. cheaper bills, more secure supply; and
- Table 3 implies that Suppliers are not affected by DSR actions and that any impacts are through their half-hourly metered customers. However, they could be impacted by any of their portfolio of customers utilising DSR instructed by another party (either through imbalance or loss of forecast revenue).

We would welcome discussion with Ofgem on these points.

We look forward to discussing our response with you and assist you in your work on unlocking the benefits of DSR and setting policy and commercial arrangements.



# Consultation Response

Yours sincerely

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## A consultation on creating the right environment for demand-side response

**Precondition 1 Industry parties need to be confident that there is value for them in demand-side response to justify the investment.**

**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.

We agree with the challenges identified in the consultation.

We believe there are two pieces of work that can support the understanding of the value of DSR, one is already underway, and the other remains a concept yet to be tested. We explain both below.

### ***Smart Demand Forum***

Work is already being undertaken in this area by the Smart Demand Forum which is not identified in the consultation. In particular the recent workshop 'GB Electricity Demand: Realising the Resource workshop held at the Royal Society, London on the 16th May' ([UKERC](#)) looked at identifying the key blockers and enablers to DSR. We see this work as a key input to the Smarter Markets' DSR area (as well as Settlement Reform). The work is coordinated through the Smart Demand Forum, whose participants also include a number of key consumer bodies: Energy Intensive Users Group, Consumer Focus, Which?, National Energy Action, DECC and the sponsor group members. The project aims to identify the potential resource which the electricity demand side could offer into the GB electricity market through demand response and through demand reduction.

The project aims to:

- Evaluate and understand the potential GB electricity demand-side resource across all economic sectors (including the role of distributed and micro-generation);
- Develop a clearer understanding of the economic value of this resource to different market actors and to different customers over the next 10-15 years; and
- Evaluate the key customer, consumer, commercial, regulatory and policy issues and interactions.
- We believe this would provide valuable insight.



# Consultation Response

## ***GB Flexibility Market concept***

For example, in 2012 ELEXON was a lead contributor to the GB Flexibility Market (GBFM) Low Carbon Network Fund bid with Northern PowerGrid. This bid included:

- development of the concept of a Central Demand Response operator supporting geographic/location DSR for DNOs acting as a super aggregator to National Grid;
- defining new synergistic shared products for National Grid and the DNOs;
- consideration of carbon intensity as a measure for comparing the demand side and generation; and
- consideration of a way for suppliers in the settlement process to buy and sell DSR right up to “gate closure” whilst not impinging on the guarantees required by the DNOs and the system operator.

We understand that this concept was well received by Ofgem and Ofgem’s Expert Panel and we recommend that a project of this type is trialled. Unfortunately, there is no obvious funding mechanism for this trial as it encompasses benefits across the energy value chain and therefore does not fit neatly into the funding criteria for distribution, transmission or system operator LCNF and NIC funds. However, ELEXON believes this work could provide a useful insight into elements of a new market model.

For further details of the GBFM bid and learning from this process please contact me.

**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?

We do not believe that the current regulatory and commercial arrangements provide the means to secure DSR being fully delivered (it may deliver some limited benefits). As stated in our ‘general comments’ in the cover letter to this response we believe that the environment required to realise the benefits for consumers will evolve through a co-ordinated regulatory framework and market arrangements within which actors can operate due to the cross party impacts of DSR actions. Such a framework/market should provide transparency to all impacted parties of all DSR actions to the extent that they are operationally or commercially impacted.

Currently, certain Time Of Use (TOU) tariffs are delivered through the Radio Teleswitch agreement. This sets out the agreed arrangements and constraints (e.g. operating windows) within which Suppliers/Distributors parties will switch load. However, the ownership and requirements for new parties



# Consultation Response

to comply with this agreement could be made clearer and lessons should be learned (such as establishing a framework, see enclosed link to: [Dynamic Switching Way Forward](#), when developing any similar framework agreement.

Furthermore, dynamic switching arrangements in a smart metered environment need to be developed as a matter of priority (through the framework we believe should be established to develop DSR) building upon the work ELEXON has done to date in this area (see above link).

**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?

No. We understand there are numerous activities being managed by separate bodies and potential new studies. These need to be brought together under a Framework managed by Ofgem as stated in our general comments. Furthermore, in the response to Question 1, we identified two pieces of work that will contribute to the understanding around the interactions between industry parties.

Additionally, we are keen to help Ofgem provide clarity around understanding the capability of existing Settlement arrangements and its ability to facilitate Supplier/ consumer benefits from DSR. In particular, the consultation (page 19, Table 2) states:

*'Most customers are currently settled based on estimated profiles of their consumption over the course of the day. Any changes in customers' actual consumption, such as those resulting from demand-side response, would not be reflected in their suppliers' settlement positions. This currently prevents suppliers from saving money by encouraging demand-side response, unless they assign a different settlement profile to those customers providing demand-side response. As a result, there is currently little financial incentive for suppliers to offer products such as ToU tariffs.'*

There are several ways that Suppliers can use the existing arrangements to deliver the savings from DSR. Both Static (Economy 7 type) and Dynamic Time of use ToU (e.g. through current Teleswitch arrangements) is currently facilitated in NHH Settlement and could be developed and extended further with appropriate feedback to the central Settlement systems. Clearly there is a lack of clarity around how this is achieved as this is not identified in the consultation. Furthermore, both customers and Suppliers can jointly elect to have Half-Hourly (HH) settlement of metered data that will reflect DSR actions at a half-hourly level.

It should be noted that DSR is hard to achieve through existing 'dumb' meters, as these will never facilitate accurate measurement through which the value of DSR can be realised. However, the Smart meter roll out and Advanced metering in larger non-domestic customers will remove this barrier to DSR. Clearly, the ability to measure and communicate the delivery of DSR is a key issue if parties and



# Consultation Response

therefore consumers are to realise the benefits.

ELEXON would welcome further discussions with Ofgem to ensure all parties understand what can be facilitated by the current Settlement arrangements. Furthermore, we would wish to help to establish appropriate arrangements to deliver the ability to measure and communicate DSR actions (and seek the relevant benefits) to parties in the future.

## **Precondition 2 The value of demand-side response services needs to be effectively signalled to customers.**

**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.

We believe that both DUoS and TNUoS charging methodologies should to be reviewed to help realise the benefits and the impacts of DSR actions. Both sets of charges are designed to incentivise parties to avoid national/regional peaks in daily/seasonal consumption. These charges could affect the benefits of DSR if the peak charges shift due to the impacts of secured DSR. For example, if customers were to move their demand creating new peaks at different times, they could then be subject to a higher tariff at the new peak reducing the benefit of moving their load (or there may be shifting arrangements).

Additionally, Suppliers or 'aggregators of DSR' could also deliver signals through customer tariffs or direct load control. Only direct load control can guarantee to deliver the required DSR (tariffs may incentivise change in behaviour, but may not deliver). Direct load control carries a high capital cost.

Appropriate measurement and feedback of the DSR is essential if the benefits are to be realised by the 'signaller' and consumer. The challenge will be to quantify the 'amount of DSR' delivered by the customer from the signal they have been given.

**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?

We believe that both approaches are required.

New signalling arrangements to consumers will need to be developed and existing signalling improved. This is especially the case where it is delivered through tariff signalling (domestic customers in particular find the existing arrangements hard to interpret, and indeed so do existing market participants!). The feedback mechanism for each approach should be identified, clear, simple and transparent as well as



# Consultation Response

showing all (and taking account of) cross party impacts.

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

## ***Current Arrangements***

There is scope to accommodate and manage cross party impacts in the current arrangements, however there are limitations to how much can be achieved.

Current DSR arrangements struggle through the existing Teleswitch approach and these have been documented by ELEXON (see our work on [Dynamic Switching Way Forward](#)). For example, both Suppliers and Distribution Businesses were unclear on the existing switching times for customers fitted with Teleswitch meters.

## ***Potential of New Arrangements***

New arrangements should be more successful as they can be designed with an understanding of the issues from past experience. To succeed these require cross party impacts to be transparent to the extent that those parties are impacted. For example, Suppliers could impact Distribution network security through direct load control and conversely Distribution businesses can impact Supplier contract positions when using DSR to avoid a system constraint. Furthermore, any new market participants who are instructing demand control would impact both Suppliers and Distribution businesses. As a result any new arrangements need to reflect which parties can act, plus prior notification of actions and/or other communications that are required to inform impacted parties. Furthermore, consideration should be given to a market and settlement arrangement to allow pre and post DSR commercial impacts on parties to be accounted for in central systems.

## **Precondition 3 Customers need to be aware of and able to access the opportunities.**

**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.

It will be necessary for government, the regulator, industry bodies, market administrators, third parties and consumer bodies to act to promote awareness and opportunities around DSR. Work should be undertaken to ensure that any information provided is both accurate and consistent across all parties and this can be achieved through establishing a single Framework to progress the DSR work.



# Consultation 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?

The role of third parties needs to be clearly understood and defined. We need to explore a number of key questions. For example:

- Is direct load control to domestic customers facilitated by Suppliers through auxiliary control (through the customer's smart meter) or can a third party directly control a customer's appliances?
- How will impacted parties be notified and how will the out-turn DSR feedback (meter data or other confirmation) be conveyed back to the third party and impacted parties?

## Conclusion

**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.

Yes. We believe it is critical that a single Framework is established to progress this work. Under that framework we need to model DSR arrangements, develop options and undertake Cost Benefit Analyses (CBA). This would help identify the optimum arrangements for achieving the maximum value from DSR.

**Question 10:** Do you agree with the priority and timing we have attached to addressing each of the key challenges identified above?

Since we believe that a framework should be established (which sets out a robust structure which will enable the delivery of new DSR trading arrangements that better facilitate the development of DSR and benefits customers), we think that 'Clarifying the actions between parties' and 'Clarifying cross party impacts' should be given 'High' priority. Understanding these first will give an insight into how the 'DSR value' might be revealed.

For more information on our response, please contact:

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