

Demand Side Response (DSR) Autumn Event – summary of discussions

<p>The event featured a number of presentations on different DSR perspectives and challenges. This note summarises the Q & A sessions and roundtable discussions from the event.</p>	<p>From Date and time of Meeting Location</p>	<p>Natasha Smith 20 November 2012 9:00-14:00 Mary Ward House, London</p>
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1. Q&A Session 1 – following Keynote speech (Goran Strbac)

1.1. An aggregator posed the question of what the role is for suppliers/the retail sector in organising, dispatching and measuring demand side response (DSR) opportunities. The response to this highlighted that suppliers are taking a proactive role in understanding demand to offer it to DNOs; and as we need to better understand consumers' demand, suppliers have a role in facilitating this investigation.

1.2. An industry body pointed out that it can be a struggle to get consumers engaged in DSR and that they are generally only prompted to engage with the energy market by media coverage. The body suggested that action is needed from government, the regulator and consumer groups, and that regulation and legislation needs to evolve to resolve tensions within the market, with EMR being a big test of this. There was agreement from the panel that there must be a coordinated approach to enabling DSR, with Ofgem explaining that strong consumer engagement underpins RMR reforms.

1.3. A supplier suggested that consumers' willingness to pay needs to be investigated, in advance of smart meters. The supplier pointed out that whilst engaged, flexible consumers may get a large reduction in their bill from engaging in DSR measures, unengaged consumers will also benefit from lower prices as a result of others' action. It was raised that the recent announcement about '4 tariffs' may restrict those suppliers who want to test consumers' behavioural responses through offering 'niche' products (assuming that no one will 'give up' one of their four in order to offer DSR).

1.4. A consumer body explained that although DSR can reduce the need for generation capacity and network reinforcement, these needs do not always align. For example, a lack of network may inhibit those instances when a large amount of wind power needs to be transmitted around the system. The body posed the question of whether this is a problem for the market or technology to solve. The response was that that DSR can do multiple things with the same resource, albeit at different times (eg balancing wind versus local network peak), and it may be that the focus is on matching demand to generation, with an occasional shift to focusing on flattening an exceptional peak when required. Exactly how this will work has not been resolved, but there are no fundamental barriers to the proper use of DSR and market harmonisation.

2. Q&A Session 2 – following "What can DSR deliver?" (Lilian McLeod, Paul Bircham, John Bentley, Ian Walker, Judith Ward)

2.1. The speakers from the second session formed a panel to take questions from the audience, facilitated by the Chair.

2.2. A consultancy posed the question, 'What is the most significant barrier to DSR, and how can it be addressed?' There were a variety of comments from the panel, including that we need a more holistic approach between parties; we need to do more to enable domestic engagement, to which end we have to make DSR invisible; there is currently no strong financial driver for commercial engagement but this will resolve itself over time, and that

the settlement system needs to be reformed, to include an 'avoided winter peak' profile; and more price visibility (so that consumers can see the value in shifting their load).

2.3. A consumer body raised the question of whether electric vehicles are the 'silver bullet'. The panel put forward a range of responses, including that electric vehicles could provide a lot of storage capacity but the uptake level is unknown, and at the moment the batteries are too quickly degraded by the cycles that would be required to make them useful for DSR, so the industry is not currently relying on them as a future solution.

2.4. An industry body suggested that Distribution Network Operators' (DNOs') approach to large energy users can be seen as unhelpful, using an example of the discontinuation of a DSR contract by a DNO with a major energy user when it was no longer needed. The industry body asked whether, in situations such as that, the DNO would work with National Grid to flag a potential candidate for Short Term Operating Reserve (STOR) activity. The DNO responded that the load pattern of the company in question changed permanently to avoid Distribution Use of System (DUoS) peaks as a result of their engagement with them, so there was an ongoing benefit. The DNO said they do engage with National Grid, and are talking to aggregators to further enable STOR and other solutions.

2.5. A supplier posed the question of whether the industry can better gather and share data on a coordinated basis. National Grid explained that they are working with DNOs to improve coordination, visibility and understanding of DSR issues. There were also comments from the panel that we are moving from a data famine to a data surfeit. The Smart Grids Forum is considering the best way to use the data from trials, and the ENA is looking into creating a data portal from January 2013. Going forward, the key will be joining strands together and a focussed assessment of the evidence required. One panel member pointed out that there is the potential to lose an opportunity if smart meter data is not anonymised and made available, thus giving industry real data to work with.

2.6. A supplier asked the panel their view of the role of the retailer in DSR (stating that if suppliers do not take the lead role, their hedging costs and therefore costs to consumers will increase). They also questioned how DSR will work with a move to tariff simplicity, and whether there is opportunity for smart heat controls around gas. A panel member replied that retailers do have a role, because the main DSR payoff comes from cutting wholesale peak costs. We need suppliers to change how they fix their upstream costs. There are issues to resolve with the conflict between the need for time-of-use tariffs and the drive for tariff simplification, to enable suppliers to be cost reflective.

2.7. A consultant raised the question of what policy changes are needed to deal with the future vision of a decentralised energy system, and what is Ofgem's role in that. A panel member responded that the key will be to not regulate too early. The LCN Fund is a positive stimulus, and regulation would limit this sort of innovation. Regulation should only be introduced when firmer markets are developing and there are concerns around the extremes.

2.8. A research forum pointed out that heat pumps also have storage potential, but in terms of technology uncertainty are in a similar position to electric cars. Are the incentives and mechanisms in place to help bring forward these nascent technologies? A panel member responded that energy prices may not be the most efficient method of encouraging DSR: alternative approaches could include loyalty cards or similar schemes. We need a flexible market that allows for experimentation in this area.

3. Roundtable discussions

3.1. Roundtable discussions were conducted to gain participants' views on the challenges and gaps in current DSR work, roles within the industry for taking future work forward, and in particular views on what Ofgem's role should be. The discussions have been summarised below under thematic headings.

Approaches to DSR for different sectors

3.2. The point that different DSR approaches are necessary for different types of customer, as the challenges facing different consumer types and the benefits of DSR vary according to different consumer types, was made at a number of tables. Points under this included:

- There does not seem to be a significant reason currently for domestic consumers to shift their demand, as the financial driver is not there.
- There will be more benefit from, and buy into, DSR from targeting the Commercial and Industrial sectors, as they have more scope to reduce their base demand. For them there is both a financial and reputational advantage.
- It did come out in one group that domestic customers would be the ones that can make a real difference to reduce evening peak demand, though this might change going forward.
- How much of the costs related with DSR are reflected in the complexity of the UK market structure?
- DSR is a complicated area and a huge challenge for businesses to understand. Smaller companies do not have the time or money to engage.

Value of DSR

3.3. There were discussions about the value of DSR to different system participants and to consumers on most tables, with the following points raised:

- A whole-system impact assessment needs to be done to reveal where DSR could add most value.
- The supplier has a bigger proportion of the bill, so why is there not a bigger commercial driver for them to conduct DSR? Why isn't the incentive strong enough to see more of them wanting to resolve their wholesale costs via DSR? It's harder for a DNO to get over the price signal issue.
- Has there been any work done to quantify what customers would be willing to pay for shifting consumption? From this we can start to work out what the level of payment/incentive should be for various consumers.
- The benefits are spread along the value chain in the market. How do you align the different interests here? It was suggested Ofgem may have a central role here to deal effectively with shared benefits. If costs for enabling DSR end up on consumer bills, how do we make the payments fair; and equally, how will the benefits be shared out?
- DSR is a second-order feature (after cost), and effort should be put into optimising the second order value rather than making it a first-order feature, and engaging with the customer on this basis.

Consumer issues

3.4. Consumer issues were mentioned at most table discussions and featured as one of the main areas of discussion. Points raised were:

3.5. Simplicity for consumers

- Complex info needs to be made simple for consumers. Most people do not know what smart meters are, let alone understand DSR. The benefit of DSR to the consumer needs to be sold and explained clearly.
- Different customers have different knowledge levels, even within big companies and at the domestic level. Are there any standards that we could develop, eg something to support the use of common language to describe DSR? Should Ofgem have a role in this? It was suggested Ofgem could create an information code of practice, and / or a 'clear communication' accreditation mark to address this.
- The big push to simplify tariffs is in the opposite direction of where DSR might take us. Automation can help with this. If DSR is simple to provide, then it could become part of standard tariffs.

3.6. Consumer engagement

- Who is best placed to engage with consumers? Aggregators? Suppliers, as they have the direct relationship with consumers? It may be more difficult for distributors to manage a direct relationship with consumers.
- It could be confusing to consumers if they are approached by different providers, but is this so different to the market for internet providers?
- Customers need to better understand how and when they can provide DSR. Could Ofgem fast track that information sharing?
- Companies will be reluctant to do anything unless they know what the impacts on their organisation will be. Could Ofgem disseminate information about DSR? They are listened to as an independent body. This action needs to be carried out by a recognised body: Energy Saving Trust is another option.
- There is little awareness amongst consumers about the commercial DSR options available. Without such awareness, the take up is likely to be low. Is it Ofgem's role to raise awareness?
- There is an information gap between industry, academics and consumers. There is therefore a need for someone to step in to fill this gap, but it is currently unclear who might be best placed to do so.

3.7. Consumer protection

- Ofgem has a role in recognising the way customer protection in the retail market may need to change as DSR and other innovations infiltrate the market.

Coordination

3.8. There was discussion about coordination, in terms of how DSR would be coordinated at a system level and also in terms of policy coordination between different parties. Points raised were:

- There would need to be someone to coordinate DSR information. Who would this be? The Transmission System Operator would be one option. This needs to be transparent across the supply chain.
- The DSO could have a roll in coordinating service/management at a local level.

- The market needs to set up signals that will prompt coordination. Firm regulation to drive behaviour may not be very productive; it should ultimately be a commercial market.
- Suppliers and DNOs are not engaging with each other, and there is a lack of understanding amongst suppliers as to how a DNO business works. Greater co-operation and understanding is vital if customers are going to be presented with a single, easy-to-understand message on DSR.
- There is no coordinated approach to enabling DSR. There are conflicts between different types of company, and no one person has the answer. We need government agreement on the direction of DSR, and clear roles for each organisation. Ofgem should let the market evolve, then regulate. DECC and Ofgem policy needs to be more joined up.
- DNO and supplier cost signals are different; there is a question of who makes the contracts / passes on costs to consumers. This takes us back to the issue of more complex tariffs.

International examples

3.9. A few tables discussed whether Great Britain should learn from international examples of DSR. Points discussed were:

- Could we learn from international activity such as in the USA, or start to trial activities on a really large scale to reveal system-process needs?
- Other countries with a more simple market structure may implement DSR more easily.
- Might we reach a point where the quality of supply is so good that there is no reason for behaviour change? This is the situation in Hong Kong.
- In the Isle of Wight they are giving away fridges with automation for consumers. The cost of building in the chip for doing this is minimal.

Market arrangements

3.10. There was a lot of discussion around market arrangements for DSR, both in the short and longer-term. The following points were raised:

- There is currently uncertainty around the future market structure, and this is not conducive to developing DSR. For instance, the possibility of DNOs taking a Distribution System Operator (DSO) role is often raised, but no one is certain if / when this will happen.
- Whilst there is some support for the current supplier hub arrangements, there would be merit in reviewing these and seeing if they represent the most efficient way to allocate DSR in the value chain. Such a project could at least provide some certainty for a DSR market.
- Ability to participate in DSR markets (which are relatively complex) requires upfront investment and certainty of arrangements. Are these incentives in place?
- How will DSR interact with the Capacity Mechanism proposed under the EMR (Electricity Market Reform)? If the EMR is introduced as proposed it will flatten the peak and therefore reduce the value of DSR. The capacity mechanism needs to be designed to produce price signals for DSR. There is evidence from the US showing that both DSR and a Capacity Market can work together.

- On regulation - keep it simple, don't engineer the solution too early, and remain flexible to emerging structures.
- There is currently a lack of a clear SO incentive regime.
- The market is complex, and currently commercial customers aren't able to engage due to lack of financial incentives.

Incentives/commercial arrangements

3.11. Another main theme discussed at the workshop was that arrangements don't currently go far enough to create a commercial case for widespread DSR. Points raised were as follows:

- The technology for DSR is available - that is not the problem - but how do the economics of implementing DSR add up?
- We need incentives which make DSR attractive to the end user. This may not be on the grounds of price; DSR could be presented as part of a bundle of services, or a way of earning vouchers or points.
- Understanding the contracts is very important for consumers: they need to understand what the impact of DSR will be on them. Consumers want to know exactly what level of control they are giving up.
- Customers face different incentives depending on whether DSR is 'active' (ie the customer knows and acts) or 'passive' (ie the customer does not need to act to provide it, except to set up in the first instance).

EU considerations

3.12. It was mentioned at a number of tables that implications from the 4th Energy Package should be considered, and that there is a role for Ofgem in monitoring this and communicating updates to the sector. Europe is looking to have DSR capability built into appliances without making customers aware of the benefits. This could affect the DSR market before it has got off the ground.

Link with demand reduction

3.13. The link between DSR and demand reduction came up in a few discussions. Points raised were:

- There has been too much focus on automation; we should instead be focusing on demand reduction, as this can hold greater benefits for consumers. Should there be more of a focus on regulating energy use of appliances, eg a maximum energy use threshold for appliances on standby, or by feeding into product standards.
- What impact does reducing demand have on demand side response? We need to bear this in mind.

Other areas mentioned

- Pricing - we don't have fully disaggregated pricing across the profiles.
- Benefits of DSR - building plant locks you in to a certain pathway, whereas DSR maintains optionality.

- References to gas – these came up a couple of times during discussions, mainly focussed on whether there is potential for more gas-based DSR, such as smart controls on gas heating. Both the Green Deal and ECO ignore gas.
- Role of DSR in capacity constraints - are we doing enough to deliver capacity solutions ahead of a possible crunch? If constraints were to appear sooner they may help encourage the emergence of the DSR market.
- Data - the full opportunities for DSR which should be offered by the smart meter roll out will be lost because parties will not have access to the necessary data. For example, DNOs require information on the location and size of available DSR in order to identify feasible and economic solutions to network problems.
- Customer perspectives - more customer perspectives would be valuable in debates around DSR. All sectors need to incorporate these; Ofgem could have invited a customer providing DSR to speak at the event.

Other comments specifically regarding Ofgem's role

3.14. There were a number of other specific comments on participants' views on a role for Ofgem that came out of discussions. These were:

- On the non-domestic side part of Ofgem's role could be to approve the half hour settlement, because there is currently no obligation to use half hourly data in settlement. This information could be really useful.
- Is there a role for Ofgem with P2/6¹ and taking account of DSR? Because at the moment DSR is not part of P26. Ofgem could speed up this process. Is there anything more that can be done as part of RIIO-ED1 (the next electricity distribution price control) submissions so DNOs are clear about roles? Ofgem should speed up the process, as DNOs will not want to do things they neither know nor trust.
- One DNO stated that Ofgem have created enough incentives for DNOs to pursue options in this area.
- Ofgem should gather all information from existing projects – LCNF, Smart Metering etc – by 2014/15, or 2016 at the latest. The focus should be around what solutions being trialled have been shown to be feasible and therefore should now be considered part of business as usual network operations.
- Ofgem, with government, has a role in providing certainty, for example around the EMR and pricing for DSR.
- The Smart Grids forum should provide coordination and clarity on RIIO-ED1, RIIO-T1 and Smarter Markets.
- Does RIIO-ED1 provide money for engagement with Industrial and Commercial (I&C) customers, and incentives to engage with suppliers?
- Ofgem should facilitate an exchange of information on actions across parties involved in the value chain by 2015.
- Ofgem also has a role in influencing government. There are barriers around disruptive domestic DSR measures, and not everything is within Ofgem's control.
- Ofgem needs to be tougher with DECC and help industry make the case for access to data following the roll out of smart meters. This was flagged as something which is

¹ Engineering Recommendation P 2/6 (ER p 2/6) is the current distribution network planning standard.

essential to the efficient use of DSR. Ofgem should be leading on ensuring that data is available to all market participants.

Further work suggested across the industry

- There are barriers to involving more customers, but the Element Energy report shows that actions can be taken to address these. For example, DSR should be explicitly recognised in Corporate and Social Responsibility guidance. There needs to be more exploration of why there not more DSR today.
- There is not much happening in terms of domestic time-of-use trials. We need more data on price elasticity. It would not have to be complex, just a simple difference between peak and off-peak use to find out what demand can shift.
- There is scope for suppliers to innovate, for example by setting up their own equivalent of STOR.