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ENGAGING DOMESTIC CONSUMERS IN ENERGY FLEXIBILITY RESPONSE FROM E3G TO OFGEM CONSULTATION

Government, Ofgem and industry understand the potential value of large-scale DSR. However, there is no strategy to ensure it happens and, therefore, little confidence that it will emerge in time to offset the costs of decarbonisation. Ofgem is right to recognise that radical thinking is needed to create the shift to an efficient two-sided market.

This response sets out a new approach to drive engagement in energy flexibility through aligning consumer needs with the provision of system services. It is based on a set of beliefs about the nature of innovation and the political context in which the market operates. These beliefs suggest the need for a new licenced function to develop, operate and populate smart local energy markets. First, we outline our overarching policy beliefs in relation to Demand Side Response (DSR) and what will be needed for consumers to be successfully engaged. We then outline more specific proposals in answer to questions 9 and 10.

Underlying policy beliefs

The role of DSR

Most analysis has focused on the value of DSR in reducing balancing costs at the transmission system level¹. There has been less focus on distribution-level value. However, there is increasing evidence that DSR will be necessary to support electrification of heat and transport along with integrating embedded renewables. System access is already being limited due to lack of distribution network capacity. This is limiting economic growth as well as compromising delivery of net zero objectives².

¹ <https://www.gov.uk/government/publications/transitioning-to-a-net-zero-energy-system-smart-systems-and-flexibility-plan-2021>

² FT: How a lack of power grid capacity is holding back UK economic Growth <https://www.ft.com/content/e9588967-ea5e-4b74-b51d-9a42a16567da?shareType=nongift>



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Key belief 1: DSR will be essential at the distribution-level to support electrification and integration of embedded RES. Once available, it can provide cost-effective balancing services at the transmissions level to complement other sources of flexibility.

Politics of Demand Side Response

To maintain support for DSR, strong consumer protection should be in place. It is worth considering particularly ambitious protection whilst the market is developing, for example, having a provision that all consumers can try flexible tariffs and cancel them after a month, or if they are not delivering the price savings they expected.

DSR will reduce system costs if demand responds to the true value of electricity – increasing demand when prices are low and decreasing demand when prices are high. However, the real value of electricity will vary both in space and time. Therefore, providers of DSR need to respond to prices that reflect this volatility. Whilst time-varying prices have been accepted as a feature of electricity markets, prices that differ by location have raised concerns³. DSR should be valued appropriately in different areas and be paid to act in line with the needs of the system in a consumer's area. There are several ways that locational signals for consumers could be achieved, be it through access to balancing services or locational wholesale prices, and it is important that a solution is found and introduced. Any approach that creates significant winners and losers would be a major political challenge. This is in addition to other challenges related to personal freedoms and cyber security.

Belief 2: Policies to deliver DSR should not control, enforce, forbid, or otherwise 'make lives worse'. Instead, they should be directly linked to a strong narrative emphasising modernisation and opportunity. Protections should be in place for vulnerable consumers, and it is only reasonable to expose those consumers who can benefit from managing consumption to the true locational value of electricity.

Creating positive and consistent touchpoints with DSR

There are currently few touchpoints for consumers to hear of or interact with DSR. These should be introduced so that all consumers installing electric vehicles or heat pumps are made aware of the potential benefits and all consumers looking to switch tariffs can compare a flexible tariff. It is also essential that there are attractive propositions from suppliers and aggregators and that these companies have access to revenue streams which reward DSR for its value.

³ Most concerns raised by industry have related to the extent of the change and the impact this will have on investment rather than consumers.



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Belief 3: For DSR to become common-place by 2025, awareness must build rapidly and be reinforced with positive experiences. Recognition of this should be added into the list of factors which are important for creating an attractive and simple consumer journey (question 8). This list could be expanded to consider how a wider awareness of DSR can be created, and for consumers to come into contact with DSR at key times such as when buying an EV or heat pump, or switching tariffs.

Consumer behaviour

Behaviour will vary widely across consumers and will evolve through time given individual and shared experience.

Belief 4: There is no single solution to the challenge of consumer engagement and certainly not one that can be defined in advance. Continual innovation in consumer-facing products and services will be essential.

Role of local markets

Local digital platforms (markets) have proved effective in optimising local asset operation⁴ and there is scope for them to adapt to differing local circumstances. They also present the opportunity to combine drivers for consumer engagement such as community spirit and peer to peer trading with financial incentives available from offering grid services. However, optimal local market design will vary from location to location (different mix of assets and consumer contexts) and evolve in line with product innovation and the potential of digital technologies.

Belief 5: A diversity of continually evolving local markets will be required. This can only be delivered by a range of innovative digital entities operating in different localities.

Business models for local market developers

The Prospering from the Energy Revolution innovation process has concluded that the potential future value of balancing services is too uncertain to underpin investment in developing digital trading platforms. For example, there is the ongoing potential for significant market reform. However, DSR will deliver significant cost benefits to the whole system as well as individual consumers. It can also be used to address specific policy challenges such as connection

⁴ <https://iuk.ktn-uk.org/perspectives/smart-local-energy-systems-lessons-for-innovators/>



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constraints. Other market operators (e.g. Elexon) receive regulated payments to operate and develop their market platforms.

Belief 6: It is unlikely that digital market platforms will be widely deployed without measures to improve the business case. Digital platform developers should receive a regulated income in recognition of overall system benefit and delivery of specific objectives. This income would be in addition to value derived from providing balancing services and would support investment in ongoing digital innovation.

Role of Distribution Network Operators

Distribution Network Operators (DNOs) are experts in local system operation and network investment needs. However, they are not expert in the digital or retail innovation that will be necessary to create well-populated local markets.

Belief 7: DNOs should not be solely responsible for local market development. However, they have a critical role to play in providing the data and funding that will facilitate development of local markets.

Answers to Question 9 and 10 - Policy propositions

Question 9 - What barriers do you see to these factors in the domestic DSR customer journey being realised in practice?

Boosting engagement in DSR will require a high number of ‘touchpoints’ to boost consumer awareness, coupled with continually evolving innovative propositions which are tailored to different user groups and provide positive experiences.

We see two key barriers to this being achieved currently:

- There is a lack of pathways for consumers to consider or interact with DSR.
- The value of DSR is not fully accessible or promoted at a local level.

Question 10 - What do you think is the role of government, Ofgem, industry and stakeholders in enabling an attractive and simple customer journey in domestic DSR?

There is a lack of pathways for consumers to consider or interact with DSR. To overcome this, an initial comprehensive set of actions will need to be completed by government and Ofgem. These include:



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- 1. Ensure price comparison websites show and allow consumers to compare flexible tariffs**
– Price comparison websites could, using access to smart meter data, show consumers the cost of flexible tariffs. They could show the cost with a consumer’s current usage profile and what it would cost if they were to shift the usage of different assets. No price comparison sites currently have this functionality though Government did create a trial prototype⁵. Creating these tools is challenging but essential for building awareness and uptake of flexible tariffs.
 - 2. Introduce DSR along the consumer journey for EVs and heat pumps** – When consumers buy these assets, they should be made aware of the savings from using them flexibly, and this should be communicated as a standard approach. This could be achieved in many ways. For example, by having an automatic offer of a smart meter or an explanation of DSR at the point of sale, in guidance for the appliance or at the time of installation.
 - 3. Have a comprehensive approach to consumer engagement on net zero action** and embed DSR within this.
 - 4. Embed DSR within the campaigns this winter on how to lower bills.**
 - 5. Remove barriers to aggregators so that innovative companies can create positive propositions for consumers.**

Also, it is key that DSR is given access to all potential revenue streams. In addition to the work which is already underway, and the proposals above, **we believe attention needs to now be turned to how DSR can be valued and encouraged at a local level.** Benefits at the distribution-level, such as improving connection capacity, must be combined with benefits from helping to balance supply and demand at the transmission-level. These benefits must be made readily available to consumers and price signals must not lead to unmanageable costs or risks. This requires innovation in retail propositions and the digital platforms that optimise response. It also requires a regulatory framework to implement the approach that sets out appropriate consumer protections.

It is proposed that Ofgem consider requiring each DNO to tender for 3rd party digital market operators to alleviate grid congestions and improve available connection capacity by innovating to access DSR and other local sources of flexibility (see figure below). This requirement would relate at least to those areas where connection constraints are envisaged or already exist. Digital market operators could boost engagement by increasing the revenue which DSR can access, making it easier to participate and creating tailored strategies for engaging consumers in different areas. They could increase potential revenue in lots of ways, such as:

- Enabling consumers to be paid to manage network constraints.

⁵ <https://smarteriffsmartcomparison.org/home>



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- Working with ESO so that consumers in Active Network management zones can access ancillary services.
 - Creating a pathway for local renewable generators to pay consumers to use otherwise curtailed electricity.
 - Supporting the ability to stack across different markets.
 - Enabling peer to peer trading.

It should be noted that consumers may not interact directly with the digital market operator, but instead could have a relationship with a supplier or aggregator who would operate on the local market on behalf of the consumer. The digital market operator could play a range of wider roles such as potentially raising awareness in a specific area of the potential value of providing DSR and how to access this. They would innovate to find the correct balance of these services (for example, altering the timeframes over which they are contracted or how the revenues can be stacked) and to create a positive pathway for consumers (and other network assets including storage and generation) to engage with flexibility.

Several digital market platforms of this type have been trialled, particularly Piclo Exchange and Project TraDER which were funded through the BEIS FleX competition. These projects provided a wide range of learnings on the current barriers to these platforms and how they could operate in the future.

To create these new entities, contracts with the digital market operators would include a basic revenue to develop new markets and provide incentives to maximise the availability of grid capacity for network users. Their operation could be governed under a new local market operator licence that allows energy supply within the local area and sets out the protections for consumers offering DSR.

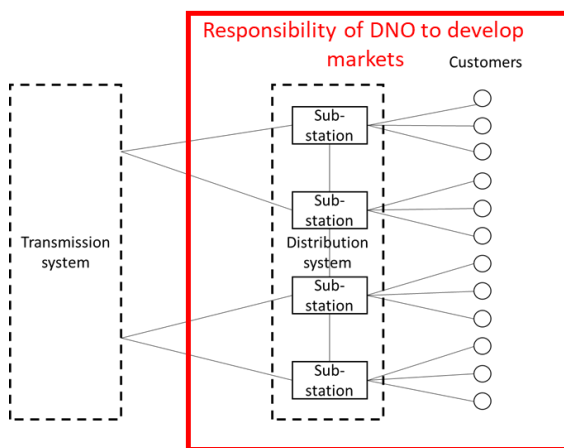
There are a range of responsibilities to be considered which could be effectively delivered by these new entities. For example, they could be responsible for offering connection terms to new sources of demand, particularly with terms to reduce costs through providing flexibility or providing advice on how flexibility can improve system access and deliver other benefits.

DNOs would be required to provide all the system data needed by the digital market operators to optimise local asset operation and to allocate connection capacity. This could include data on network curtailment or when heat pumps or EV chargers are installed.



Overall, creating these new market actors would inject energy and innovation into the DSR market, boosting engagement through targeted campaigns, increased potential revenues and improved experiences.

Current situation



Proposal

