# CBI Response to BEIS Call for Evidence

## Smart, Flexible Power System

The CBI welcomes the opportunity to respond to the BEIS Call for Evidence on A Smart, Flexible Energy System. Across the UK, the CBI speaks on behalf of 190,000 business of all sizes and sectors. The CBI's corporate members together employ nearly 7 million people, about one third of private sector employees. With offices in the UK as well as representation in Brussels, Washington, Beijing and Delhi - the CBI communicates with the British Business Voice around the world.

## This response argues that:

- **Moving towards a smart, flexible energy system will support in meeting energy and climate change objectives cost effectively. A long term plan is necessary, as well as clear measures of success.**
- **Both domestic and business consumers must be at the heart of this low carbon transition, and ensuring they have access to low carbon, innovative technologies, whilst protecting those who are most vulnerable will be a key factor in its success.**
- **A smart, flexible system could facilitate the use of Demand Side Response (DSR) measures, however in order to create a level playing field, clear roles and responsibilities must be established, particularly for aggregators.**
- **Whilst we could expect changing roles and responsibilities for Network Operators, smart active management, and considered market arrangements will help to ensure an effective transition.**
- **Different types of storage could play an important role in the success of a smart, flexible energy system. Alongside long term clarity for its role, market arrangements must facilitate the creation of a level playing field for new technologies.**

## Moving towards a smart, flexible energy system will support in meeting energy and climate change objectives cost effectively. A long term plan is necessary, as well as clear measures of success.

Addressing the energy trilemma – that is maintaining a secure, affordable and low carbon energy supply is still very much a priority for government, business and consumers. Establishing a smarter, more flexible energy system is expected to be critical in addressing the trilemma at least cost - allowing the UK to offer new services to consumers, particularly with regard to how consumers interact with the energy sector. In addition to supporting in addressing the trilemma, a smart, flexible system will be required to meet the 5$^{th}$ Carbon Budget, which the government legislated in 2016, and to which they will publish an Emissions Reduction Plan for this year. Finally, having a smart system that allows for innovation in the energy system becomes ever more important as the UK moves to establish a robust Industrial Strategy, in which energy will be a key enabler. Forward planning for the energy system will be crucial in ensuring that there is a strong foundation on which to build our sectoral and regional strengths, especially as we strive to remain a competitive, global leader in a post Brexit economy.

Following a period of relative uncertainty, the energy and climate change sector welcomes this Call for Evidence as an opportunity for informing future thinking, alongside the anticipated Emissions Reduction Plan. As this work progresses, Government and Ofgem must continue to provide long term certainty and regulatory focus in order to build the confidence of the industry. In addition to clear communication and clarity, new plans

for the sector must account for the broader political landscape. This should include new policy from all government departments that may have an impact on the sector (including: the Department for Transport, the Office for Low Emission Vehicles, the Department for Environment, Food and Rural Affairs, and the Department for Communities and Local Government), as well as our changing position in relation to the EU and the impact this has on domestic policy (e.g. the recently announced Winter Package which prioritises further progress with energy efficiency and renewable energy, as key drivers by which the EU will cut emissions by 40%, by 2030).

Finally it's key that Government and Ofgem consider how they will measure progress and success, so investors can anticipate changes to policy based on those parameters. Currently the lack of certainty in the transition, and how both policy makers and businesses will judge the effectiveness of these reforms are a potential barrier to its success.

## Both domestic and business consumers must be at the heart of this low carbon transition, and ensuring they have access to low carbon, innovative technologies, whilst protecting those who are most vulnerable will be a key factor in its success.

Consumers will be at the heart of the low carbon transition and energy efficiency will be a crucial way to help manage bills as well as reduce demand across the system. By way of supporting energy efficiency, and allowing consumers to see the benefits, enabling technologies, which could facilitate consumer engagement, need to be in place. One of the key enabling technologies is smart meters, which when coupled with settlement reform, will create opportunities for the market to innovate around time of use tariffs and automation. As such it's important that BEIS continues to support the smart meter roll-out, but recognise that in order to be a success, it must ensure the programme is delivered effectively for consumers, ensuring they receive a positive experience and understand the broader benefits smart meters can offer. Additionally, any new products must be developed with the consumer in mind, this means ensuring that the consumer understands the product, the benefits it can offer, and most importantly how to use it.

For consumers to benefit from a flexible system in the future, and to protect vulnerable consumers, interoperability across devices is key. This will be facilitated by future proofing appliances now, where appropriate and cost effective, and providing smart optionality to ensure that consumers can feel the benefit of the transition as early as possible and don't have to upgrade products in the future at an added cost. While smart, flexible technologies aren't currently driven by the price signals that we may see in the future, associated with time of use tariffs and half hourly settlements, Government and Ofgem may want to consider their role in supporting this transition. This includes taking the steps to remove barriers to uptake, and providing the right kind of information to consumer. We therefore also support the value that product labelling can play in identifying smart appliances. Government and Ofgem should also be considering what more needs to be done in order to drive innovation within our energy system, particularly considering the extent to which consumers could become energy generators themselves.

Industrial and commercial consumers also stand to benefit from a new, smarter system as it will allow for better metering and subsequently more control over bills, in addition to simply making the energy system easier to engage with and more accessible to a range of firms. In order for this to be a success, it's important that larger industrial and commercial consumers are educated now about the benefits of offering load shifting, onsite generation and other services to the market. We have already seen some positive work in this space undertaken by Power Responsive[1]; Government and Ofgem should therefore look to explore which other key stakeholders could support in educating business consumers. This will allow these consumers to consider the

[1] Power Responsive is a stakeholder-led programme, facilitated by National Grid, to stimulate increased participation in the different forms of flexible technology such as DSR and storage - http://powerresponsive.com/ (12/01/17)

benefits of the range of pricing options that will be on offer in a smarter system, allowing smart tariffs to have greater visibility.

Finally, for both domestic, and industrial consumers, an open and honest conversation must be had with regard to privacy concerns, and subsequently that the appropriate agreements are struck to protect consumers.

## A smart, flexible system could facilitate the use of Demand Side Response (DSR) measures however in order to create a level playing field, clear roles and responsibilities must be established, particularly for aggregators.

Demand Side Response (where customers are financially incentivised to reduce their electricity use at peak times to help manage load on the electricity network), can help the UK to better manage energy use and balance our energy system. Whilst positive steps have been taken by bringing DSR into the Capacity Market, there is further work needed to encourage the full range of DSR mechanisms, including 'turn-down' DSR, as well as behind the meter generation.

In addition, more work is needed to make good DSR options accessible to all consumers – a smarter system could allow industrial, commercial and domestic consumers to better engage. This will require a holistic review of network charging arrangements, and of the ancillary services market (specialist services provided by the System Operator to ensure supply and demand of electricity are balanced and the system remains stable). This review should seek to rethink and ultimately simplify the market, so more companies can engage in DSR. Market based frameworks should be developed within the balancing services markets so that there is a genuine level playing field for both the demand and supply side. In addition, this review should support the continued evolution of the Capacity Market in order to better facilitate technology neutral auctions and ensure that demand side can compete on a level playing field with traditional generation. Securing more effective secondary trading arrangements within the design of the Capacity Market will be a key enabler for more active participation of DSR.

In line with the Call for Evidence's proposals, aggregators are likely to have an important role to play in supporting a more flexible system and driving the uptake of DSR. For industrial and commercial customers the role of aggregators is significant in helping them access a range of services, not limited to the Capacity Market. If the role for aggregators grows, so will the number of 'disruptors' within the sector. It's therefore important that as the new system develops clear roles and responsibilities must be established - in particular addressing the current imbalance of costs and responsibilities between energy suppliers and aggregators, and the businesses they service.

One solution may be to ensure aggregators become full or partial signatories to the Balance and Settlement Code (BSC), as envisaged through the Project TERRE (P344) process, ensuring that they take on the relevant rights and responsibilities, allowing them to pursue further value opportunities available in the balancing market, whilst protecting consumers. However, it is important that the arrangements are fair to all parties and avoids balancing issues – it is therefore an issue that requires careful attention. There may also be scope to develop a Code of Conduct for aggregators – but it is also important that any regulatory response is proportionate, and does not stifle innovation in the market at this early stage in its development.

In addition, the potential speed of market development, particularly in domestic sized energy storage, means that Ofgem and Government must be ready to ensure that consumers are protected as this technology grows. For domestic and SME consumers the technological developments may lead to a changing relationship between consumers, aggregators and suppliers. A more flexible system could see greater role for aggregators, or other third parties to offer services directly to customers, therefore it is key that as the market for these firms expands, the existing protections that customers receive from their supplier are not lost.

## Whilst we could expect changing roles and responsibilities for Network Operators, smart active management, and considered market arrangements will help to ensure an effective transition.

Any potential shift, as described in the Call for Evidence, in the model of network operation from Distribution Network Operators (DNOs) to Distribution System Operators (DSOs) could lead to a range of benefits. One example of its impact is clearer price signals, thereby avoiding unnecessary network upgrades where the same benefits can be found from a smarter network. However in order for this to be a success it may require more active management of the system and clarity of roles within it. DSOs should be incentivised to further consider demand side options as a credible alternative to further capital expenditure investment on the network to address local balancing – which could lead to considerable cost savings for consumers. Additionally to mitigate the risk of local actions offsetting transmission system actions, and vice versa, there is a clear need for much greater coordination between DSOs and the Transmission System Operator (TSO).

## Different types of storage could play an important role in the success of a smart, flexible energy system. Alongside long term clarity for its role, market arrangements must facilitate the creation of a level playing field for new technologies.

It is expected that energy storage (including traditional large scale-storage, as well as potentially newer technologies) will play a large role in the future of both a smarter, and a lower carbon energy system - by facilitating greater uptake of renewables and overcoming some of the challenges associated with intermittency. There is some consensus that the Electricity Storage Network (ESN) definition, as described within the Call for Evidence, for storage is a suitable approach. However the regulatory status of storage must be confirmed as soon as possible, giving clarity to investors and encouraging the technology to grow and establish itself within our energy system. It is also important that storage, as an asset, is not constrained by inappropriate generator license conditions. BEIS should consider the value in storage and other smart solutions having their own licence category to clarify the role we expect them to play in network and system optimisation.

Furthermore, as well as the barrier identified within the Call for Evidence around double charging of government policy costs, we would highlight the need to ensure that the connection process works smoothly. This includes at a domestic level, where at the moment there is a risk of the process leading to delays and a poor consumer experience. Finally, long term certainty will be important in supporting the creation of an environment for innovation. This could lead to the delivery of a range of enabling technologies that could support the uptake of a smarter energy system, particularly for suppliers and aggregators who will continue to seek to offer smart solution to consumers.

Electric vehicles (EVs) may also have a positive role to play in the future in supporting a flexible and decarbonised energy system. As well as helping to improve local air quality and reduce emissions from vehicles, it could also help provide ancillary services such as frequency response and demand turn-up. Furthermore, at scale there is potential to provide solutions to support a greater uptake of renewables on the system. However, with the technology still at an early stage, more work is needed to understand its role fully. It's important that Government continues to support the development of this technology and the uptake of these vehicles as a way of meeting UK climate change targets. However, until the role of this technology is better understood, Government and Ofgem should not be too dependent on EVs playing such a pivotal role in firstly DSR through vehicle to grid charging, but also the value that it offers to consumers as a source of revenue.

## Conclusions

- **A smart, flexible energy system has the opportunity to provide a range of benefits for the whole economy, delivering new services, giving consumers more control over their energy bills, security of supply, and the opportunity to integrate low carbon technologies.**

- **Consumers are at the heart of this transition, and more needs to be done to engage them in the process; smart meters have been identified as one method of engagement, as well as the future proofing of appliances to ensure vulnerable consumers are engaged, and can benefit from the services and savings a smart, flexible system could offer.**

- **Demand Side Response could be a key factor in the UK successfully managing supply and demand, and will be facilitated by this transition. However in order to succeed, Government and Ofgem must continue to provide clear signals within an appropriate regulatory framework in order to drive the uptake of a range of DSR mechanisms, including 'turn down' DSR.**

- **In addition, changes to the network charging arrangements, of the ancillary service market and of the role of aggregators must seek to deliver simplification and therefore broader engagement, as well as protecting consumers as the market develops.**

- **Storage is likely to be key to delivering a smart system, as well as the transition to a low carbon energy system. However, clarity is needed on its role (and definition) in order for it to become better established in our energy system. This long term certainty will also support in creating a positive environment for innovation in a smart, flexible system more broadly.**