

**A submission by the Electrical Contractors' Association
to the call for evidence for a smart, flexible energy system**

The Electrical Contractors' Association (ECA) welcomes the opportunity to make a submission to this Ofgem / Department for Business, Energy and Industrial Strategy (BEIS) call for evidence. We have responded below to questions where it is appropriate for us to do so. Our key points are:

- Any Government subsidy to drive consumer take-up should be very limited. Instead, the Government should focus on the elimination of genuine regulatory barriers, or system infrastructure development and support.
- This includes revising upwards the 4kW threshold at which an electricity-generating home or business could be charged by the Distribution Network Operator (DNO) when they are adding storage capability to the installed electricity generation capacity.
- In 2017, we may see a number of suppliers announce time-based smart tariff products (one has already). This is important so that we can encourage the storage and charging of electricity at non-peak times, for use at peak times. DNO charges should also align to have maximum effect. If this market does not develop, then Government may have to look at how suppliers can be encouraged to participate (such as through varying ECO contributions).
- Product energy efficiency regulations and labelling have been shown to shape consumer behaviour when it comes to purchasing appliances. Alongside requiring common standards, this formula should be used to drive the take-up of smart appliances.
- The installation of smart meters is a crucial engagement marker with the householder or business. A widespread rejection here will ultimately stop us from moving to a smart energy system. So the benefits need to be communicated early and continuously so that the smart meter installation programme is a success. This is also a great opportunity to have a wider discussion on energy efficiency with the householder/business, and should be facilitated by Government.

Questions 1, 2 and 3: Have we identified and correctly assessed the main policy and regulatory barriers to the development of storage? Are there any additional barriers faced by industry?

Response: We believe that the barriers have broadly been identified.

Further to this, we note that new electrical storage is classed as additional generation. This can often push any generation and storage capacity from a property above the 4kW threshold at which the owner must notify the DNO and could face a potential connection charge. We don't want to discourage small generators and 'storers' of electricity from acquiring or registering storage capability, so we suggest raising the threshold at which a generator can be charged or exempt storage from applying. While storage capacity is currently more targeted to cater for commercial energy use, smaller scale capacity may grow in demand as costs come down. This would remove a barrier and allow for the DNO to plan for new connections to the grid. This may be relevant if small-scale storage starts to follow the growth in solar PV in recent years.

From a larger scale perspective, it is right that DNOs can set out where storage may be most beneficial and where additional capacity can be incorporated (as well as of course taking into account operators' views). Through policies like Demand Side Response (encouraging permanent reductions in what is drawn from the grid) and Frequency Response (balancing between demand and generation), sufficient support exists at the right level so as not to create boom and bust.

However, if barriers are put in the way, but there are no financial incentives available, installers may just simply add additional storage capacity to existing installations and not inform the DNO, who

**A submission by the Electrical Contractors' Association
to the call for evidence for a smart, flexible energy system**

would have no method of ascertaining the true storage capacity on their network. A system must be found so that installers, manufacturers or clients can inform the DNO of any installation without suffering any 'planning' payment or delay.

Question 11: What types of enablers do you think could make accessing flexibility, and seeing a benefit from offering it, easier in the future?

Response: A more sophisticated tariff system, like that outlined by Green Energy UK right at the beginning of this year, is essential if we are to make the most out of smart meters. If energy suppliers offered tariffs based on the use and storage of electricity at certain times, a proportion of people would do this. When you offer a financial incentive – one that involves little hassle – a decent proportion of people will usually do it. For instance, look at the take-up of solar PV when the tariffs were at their most generous. As tariffs would be an agreement between the supplier and consumer, Government subsidy would not be an issue, though it is possible that some energy suppliers may need to be encouraged to offer and promote a range of flexible, fair and affordable tariffs.

This would help with grid balancing. To support this, DNO charges for usage at certain times of the day would need to synchronise. Otherwise, it would cancel out or reduce the beneficial tariff as offered by the supplier to the consumer.

Question 15: To what extent do you believe the Government or Ofgem should play a role in promoting smart tariffs or enabling new business models in this area?

Response: Direct Government funding should not be used, but encouragement for suppliers to offer smart tariffs providing a minimum level of benefit for consumers using or storing electricity in times of less demand compared to high demand periods, is a must. It is likely that the market will develop to offer these solutions, but Government could act to encourage the offering from suppliers. The Government could, for example, offer that suppliers pay lower ECO obligations where a supplier has hit a threshold of customers on a smart tariff as a proportion of their total able customer base.

As we have noted, electricity distribution charges should complement this.

Question 28: Do you agree with the four principles for smart appliances set out above (interoperability, data privacy, grid security, energy consumption)?

Response: Yes.

Question 29 (relating to smart appliances): What evidence do you have in favour of or against any of the options set out to incentivise/ensure that these principles are followed?

Response: We strongly support leveraging up minimum standards or product energy efficiency legislation (or functionality if digitally linked). This has worked well on household appliances sold in the past, and combined with an easily understood labelling system, (Option A) the two-pronged approach has achieved genuine results.

Question 30: Are there any other barriers or risks to uptake of smart appliances in addition to those already identified?

**A submission by the Electrical Contractors' Association
to the call for evidence for a smart, flexible energy system**

Response: Smart appliances should be built on clear standards, and as we note, would benefit from the leveraging up of regulations governing their manufacture; an approach that has worked on products from washing machines to cars.

Question 32: Are there any other options that we should be considering with regards to mitigating potential risks?

Response: Tariffs may encourage greater usage at specific times. The tariffs will need to be well balanced so as they do not encourage a wholesale shift which then creates new high demand periods.

Question 34: What barriers are there for vehicle and electricity system participants to develop consumer propositions?

Response: Electric vehicles should not only be capable of being charged on-street, but they could be used as a battery to charge the electricity consumed in our homes. A four quadrant charger is needed for this. This practice is certainly efficient but it does raise the prospect of abuse (e.g. charging electricity at work; using that electricity at home). These issues can be worked through but need consideration.

Question 37: Do you recognise the barriers we have identified to large non-domestic users providing Demand Side Response?

Response: Yes.

Question 39: When do engaging with/informing domestic and smaller non-domestic consumers about the transition to a smarter energy system become a top priority and why?

Response: The fundamental moment for most people will be when their energy supplier offers to install a smart meter. If at that point they don't have an idea about the broader energy possibilities, such as the savings, control and convenience, many will simply say no. If people do say no, then frankly speaking the opportunity closes for many consumers, particularly domestic. So the point of engagement should begin now and build on the Smart Energy GB 'Gaz and Leccy' awareness-raising programme.

It is a drawback that smart meter installers may be limited in their ability to directly sell ancillary energy efficiency services and measures. While this was no doubt done to limit any potential exploitation of customers, we must find a solution so that installers can provide a broad view on the overall energy efficiency of a dwelling, along with contact details should the customer want to follow this up with commissioning a home energy audit. Otherwise, it will be a huge missed opportunity. It should be noted that this can also only happen properly if installers understand the systems they are connecting (and their knowledge isn't solely related to an isolated process). If their knowledge is related to the pure installation of a meter, their ability and willingness to provide a credible view will clearly be limited. Again, an important and rare opportunity to engage with the householder or small business owner on energy management and efficiency will have been missed.

Question 41: Can you provide evidence demonstrating how smart technologies could compromise the energy system and how likely this is?

**A submission by the Electrical Contractors' Association
to the call for evidence for a smart, flexible energy system**

Response: The staggered operation of appliances is necessary to build in to ensure the system can cope.

Question 42: What risks would you highlight in the context of securing the energy system?

Response: The key risk would seem to be the threat from a cyber-security perspective. In this case, or if a system failure occurs for other reasons, back-up baseload energy is necessary to step in for any outage.

Question 43: Do you agree with the emerging system requirements?

Response: Yes.

Question 48: What do you think are the right areas for innovation funding support?

Response: We support the provision of public finances being tied to research where there is a clear public advantage, such as through non-commercially-aligned research.

About the ECA (www.eca.co.uk)

The Electrical Contractors' Association (ECA) is the UK's largest trade association representing electrical, electrotechnical and other engineering contractors, at regional, national and European level. ECA member-companies are rigorously assessed before membership is approved.

Member firms have a combined turnover in excess of £6 billion annually. Member firms carry out design and installation activity across domestic and commercial sectors. This ranges from power and lighting to data communications, to energy efficiency and renewables, as well as the design and installation of cutting-edge building control technologies.

The ECA's 2,800 members range from SME electrical firms to nationwide engineering contractors and building services firms that employ thousands of professionals on major UK projects. ECA members also support over 5,000 apprentices annually.