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### **Consultation reference: Plan for a Smart, Flexible Energy System - A call for evidence**

#### **Overall thoughts on the Call for Evidence**

The Electric Heating Company Limited ("EHC") welcome this call for evidence issued by BEIS and Ofgem. EHC are pleased that the Government and regulatory bodies have realised that the UK electricity market needs to change as a result of advances in Technology and are now taking action.

EHC hope this call for evidence is the first step towards a fairer and more equitable energy market across all aspects; generation, distribution and consumption. For too long the Government and the UK electricity market in general has been dictated too and dominated by large generation and distribution companies or by industries/companies favoured by specific regulation and legislation. This has been to the detriment of small and medium enterprises who try to participate in the general market and, more importantly, to domestic consumers of electricity and electrical products.

EHC are concerned that despite this call for evidence, actions taken by the Government for a smarter, flexible energy system of the future might still be influenced by a select few who may be pushing their own agendas. Electric vehicles and energy storage methods are frequently referred to throughout this document. This gives the impression a specific few interested parties have already influenced BEIS and Ofgem on how the future energy market should look. We would urge BEIS and Ofgem to keep an open mind on all technologies. BEIS and Ofgem should learn from past mistakes that focussing on one solution will not be to the benefit of the greater good.

EHC are also concerned that if the predicted issues raised in the Call for Evidence are not dealt with fully this could lead to significant problems. If new technologies are adapted to encourage consumers use more off-peak energy, tariffs and pricing must be updated to take account of this. If the consumer is not provided with a clear benefit, i.e. cost saving, for altering their consumption pattern they will not be receptive to the change. A key driver for a smarter, flexible energy system is to reduce energy bills for consumers in a more power-hungry future so tariff updates must be a priority.

Finally, EHC would like to highlight the current smart meter roll out being undertaken by the Government. Smart Meters are a step forward but also a missed opportunity. Providing consumers with a clearer understanding of their consumption and more accurate billing is to be encouraged. However, the Smart Meters could have been developed to do assist with a lot of the functionality now being considered for variable tariffs and DSR purposes. Further, the roll out of any new

technologies should learn from the mistakes the Smart Meter rollout has encountered. The cost of the Smart Meters, education of consumers and time required to complete the project has been grossly underestimated.

EHC would like to note that several technologies suggested by BEIS and Ofgem, e.g. Demand Side Response heating for domestic consumers, have already been developed. An example of this technology is the EHC DSR Electric Combination Radiators. These DSR Electric Radiators are fully controllable through an App which allows a consumer to easily set when they operate their electric radiators, limit the power consumption of the radiator network installed in the consumer's home or, alternatively, allow a third-party service provider to increase or reduce the consumption of the radiators when might suit off peak or low demand periods. EHC would welcome the opportunity to discuss this and other DSR technologies we are developing with BEIS and Ofgem.

EHC hope that our responses provided in Appendix 1 to some of the questions you have posed are helpful and informative. We would welcome the opportunity to meet with BEIS and Ofgem to discuss our thoughts further and demonstrate how we are helping create a smarter, more flexible energy system already.

We look forward to receiving your response to this letter.

Kind regards

Calum Black

Operations Director  
The Electric Heating Company

## **Appendix 1**

Please find below The Electric Heating Company's response to questions posed in the Call for Evidence that we are suitably qualified to answer.

### **Questions: Enabling Storage**

- 1) Have we identified and correctly assessed the main policy and regulatory barriers to the development of storage? Are there any additional barriers faced by the industry?**

EHC are aware of the work that the IET are undertaking to develop a code of practice for electricity storage systems. EHC will provide our thoughts to the IET however we would reiterate that any policy or regulations implemented should be fair and equitable and not favour larger providers of energy storage over smaller domestic consumers who wish to have energy storage. We also believe, and are actively encouraging, the IET to expand this Code of Practice to Smart Electric Appliances too.

- 2) Have we identified and correctly assessed the issues regarding network connections for storage? Have we identified the correct areas where more progress is required?**

- 3) Have we identified and correctly assessed the issues regarding storage and network charging?**

**Do you agree the flexible connection agreements could help to address issues regarding storage and network charging?**

**Please provide evidence to support your views, in particular on the impact of network charging on the competitiveness of storage compared to other providers of flexibility.**

EHC are not experienced in network charging or connection agreements. However, we would urge a common-sense approach is taken to these issues and they are kept as simple as possible. A connection agreement should not be overly burdensome on the provider of storage and they need to be flexible. The storage provider should be remunerated accordingly for the provision of such storage, through lower charges for energy they do store from off-peak periods and then utilise at a time of peak demand.

EHC agree with your view that storage providers cannot be charged twice for final consumption levies. EHC would suggest an initial charge for 'consume' energy to store it and then no charge for passing that energy on to the end consumer.

- 4) Do you agree with our assessment of the regulatory approaches available to provide greater clarity for storage?**

**Are there sufficient existing safeguards to enable the development of a competitive market for storage?**

**Are there any circumstances in which network companies should own storage?**

**Please provide evidence to support your views.**

- 5) Do you agree with our assessment of the regulatory approaches available to provide greater clarity for storage?**

**Please provide evidence to support your views, including any alternative regulatory approaches that you believe we should consider, and your views on how the capacity of a storage installation should be assessed for planning purposes.**

- 6) Do you agree with any of the proposed definitions of storage?**

**If applicable, how would you amend any of these definitions?**

**Please provide evidence to support your views.**

## Smart tariffs

**15) To what extent do you believe Government and Ofgem should play a role in promoting smart tariffs or enabling new business models in this area? Please provide a rationale for your answer, and, if you feel Government and Ofgem should play a role, examples of the sort of interventions which might be helpful.**

Considering domestic and smaller non-domestic consumers only, EHC believe that the BEIS and Ofgem should actively promote Smart Tariffs. This is required primarily because if it is left to the utility providers to implement and promote Smart Tariffs themselves we don't believe this will happen quickly or to the ultimate benefit of the consumer. The utility providers are ultimately operating to earn money, encouraging their consumers to move to cheaper tariffs is clearly not in their own best interests. Therefore, we do not believe they would do so without Government promotion or mandating.

One part of the Smart Meter roll out which has worked is the advertising supported by the Government. This allows the consumer to see that it is not the utility providers promoting these products for their own financial gain but that it is a Government led initiative. Therefore, consumers are more open to the change and willing to accept it. Whilst this consumer group might individually have a low energy demand, collectively as a group the demand will be sizeable and the task of incentivising this group to use Smart Technology will be significantly harder than larger I&C consumers.

Smart tariffs, such as time of use or load management, are something EHC believe is required when using DSR or load management technologies. The consumer should be provided with a better tariff for assisting with reducing demand or load at peak times and a Smart Tariff should do this. EHC believe that Ofgem should play an active role in the creation of new Smart Tariffs to ensure the consumer does benefit from Smart Tariffs and are not treated unfavourably by utility providers. The Consumer should see the full benefit of savings generated from using a Smart Tariff.

**16) If deemed appropriate, when would it be most sensible for Government/Ofgem to take any further action to drive the market (i.e. what are the relevant trigger points for determining whether to take action)? Please provide a rationale for your answer.**

We agree with your view that there are some necessary building blocks to be put in place to help the delivery and action on Smart Tariffs. However, we do not believe Smart Tariffs are reliant on these building blocks being completed first. We would encourage BEIS and Ofgem to start taking action to encourage utility providers to trial and offer Smart Tariffs now.

The Smart Meter rollout should be completed but the introduction of Smart Tariffs and communication of these to the wider market should not necessarily rely on the Smart Meter roll out being completed. The Smart Meter rollout will now take until 2020 to complete and if Smart Tariffs are not introduced until then it will be too late in our opinion. We do appreciate that the data produced by Smart Meters, once analysed, could be helpful in shaping Smart Tariffs. The Smart Meter information on actual consumer usage, time of use and load use etc.... could help determine what times consumers should be encouraged to move their demand use too and therefore when the Smart Tariffs should apply.

However, there is already a vast amount of Smart Technology products available to the market, including the EHC DSR electric radiators, and therefore Smart Tariffs are needed now. If this Smart Technology is adopted on a larger scale, the demand for Smart Tariffs will be greater and more

imminent than anticipated. Further, if some of the supply issues forecast as a result of increased consumer demand for electricity, it would make sense to offer Smart Tariffs now and the uptake of Smart Technology sooner rather than later to try and mitigate the impact of these forecasted supply problems.

BEIS and Ofgem should consider promoting further trials combining the use of Smart Technology and specific Smart Tariffs. Encouraging these trials now will act a driver to the market to continue the uptake of Smart Technology and Smart Tariffs. These trials will prove if the proposed Smart Tariffs are right for the technology or require further adjustment. EHC would be delighted to participate in these trials for testing Demand Side Response electric heating. For the purposes of trials only, EHC believe BEIS and Ofgem should mandate utility providers to offer a select range of Smart Tariffs that BEIS and Ofgem approve.

Only once these trial phases have been completed and results analysed should BEIS and Ofgem then fully promote the wider use of these Smart Tariffs to domestic consumers.

#### **Questions: Other Government policies**

##### **25) Can you provide evidence to show how existing Government policies can help or hinder the transition to a smart energy future?**

It is our view that some recent Government policies have hindered the transition to a smart energy future. The Government has widely promoted schemes such as the Domestic Renewable Heat Incentive and Green Deal schemes which have focused only on the adoption of a few specific technologies and specifically heating systems. This has, in our opinion, taken attention away and funding away from other smart technologies being developed and trialled. These schemes have also detracted the wider consumer's attention away from Smart Technologies and therefore, in our view, slowed the adoption of Smart Technology.

Whilst the Government has supported several research bodies which, such as Innovate UK, (which we commend) these bodies in themselves have only been able to focus their attention on a select few products. We would reference a recent Funding Call issued on 4 July 2016 for innovation in infrastructure systems. Whilst a significant amount of funding was available, the criteria was difficult for a business like EHC to meet. We did believe we could help with specific infrastructure needs e.g. demand side management but felt the criteria of this Funding Call was too narrow.

We would encourage the Government to make it easier for businesses to access funding to develop smart technologies and encourage the transition to a smart energy future. We would encourage bodies such as Innovate UK to ensure any funding calls have a wide remit and do not preclude any Smart related technologies.

##### **28) Do you agree with the 4 principles for smart appliances set out above (interoperability, data privacy, grid security, energy consumption)?**

- Yes

- No (please explain)

We agree with these 4 principles you have identified for smart appliances and also the barriers and risks identified with smart appliances. EHC are working hard to develop our own smart products and smart technology to be interoperable, ensure a consumer's data is private and secure and also ensure the energy consumption required by the appliance to respond to a signal to be minimal.

We agree that appliances with DSR capabilities need the capability to respond to signals to alter how and when they consume energy. However, we would urge that careful consideration is given to who has control of this signalling. Consumers need to fully understand if the electricity provider will do this signal or if it is the wider distribution/system operator. We would also encourage more consideration is given to where this signal is sent to in the consumer's house. Our view is that this signal should be sent to the meter of the consumer's home. The meter should then 'speak' to the smart appliances in the home to control the use of those appliances. This would ensure there is a consistent approach and smart appliances are developed to speak to the one overall meter control unit. The meters would also be a common standard across the network and therefore developers understand what they are working with. Further, whole house energy demands would be controlled through the meter and not specific appliances requiring to be controlled individually.

**29) What evidence do you have in favour of or against any of the options set out to incentivise/ensure that these principles are followed? Please select below which options you would like to submit evidence for, specify if these relate to a particular sector(s), and use the text box/attachments to provide your evidence.**

- Option A: smart appliance labelling
- Option B: Regulate smart appliances
- Option C: Require appliances to be smart
- Other/none of the above (please explain why)

**Option A:**

We already encourage the clear labelling of smart and non-smart appliances (see attached). The EHC DSR Electric Radiators and ecoSave Dynamic Electric Heaters which both have smart appliance capability are clearly labelled as Smart ready but only Smart capable when purchased with a specific gateway. We would encourage all manufacturers to apply the same approach to labelling.

**Option B:**

We agree that smart appliances should be regulated and meet certain criteria. The EHC DSR Electric Radiators are clearly labelled that they can help a consumer regulate their demand of electricity but do not claim to be inter-operable with others systems. If we develop this range of EHC DSR Electric radiators to be inter-operable, we would ensure these claims are both true and clearly labelled as such.

**30) Do you have any evidence to support actions focused on any particular category of appliance? Please select below which category or categories of appliances you would like to submit for, and use the text box/attachments to provide your evidence:**

- Wet appliances (dishwashers, washing machines, washer-dryers, tumble dryers)
- Cold appliances (refrigeration units, freezers)
- Heating, ventilation and air conditioning
- Battery storage systems
- Others (please specify)

We have attached a copy of our literature which clearly states that when our DSR Electric Radiators or ecoSave Dynamic Electric Heaters are purchased they can be made a smart appliance if, and only if, they are purchased with a relevant gateway. We would encourage all manufacturers and distributors of smart heating appliances to follow a similar approach and be clear in their literature when an appliance is a smart appliance or not.

**31) Are there any other barriers or risks to the uptake of smart appliances in addition to those already identified?**

In our experience, barriers to the uptake of smart appliances can be quite wide ranging. Consumers are often put off due the additional cost of purchasing smart appliances. However, once these smart appliances are widely used then the additional cost for the consumer should reduce (due to economies of scale and recovery of initial manufacturer investment costs).

We also know that consumers can be sceptical of the benefits these smart appliances can actually provide. Any manufacturer who makes claims of savings on energy consumption should be made to clearly support these claims with independent trials. This will help show the consumer that these smart appliances are beneficial and not just a sales gimmick.

**32) Are there any other options that we should be considering with regards to mitigating potential risks, in particular with relation to vulnerable customers?**

With regards to vulnerable customers, great care should be taken to educate all customers on smart appliances should they wish to use them. However, this education is even more important when the consumer is elderly or fuel poor. EHC deal with elderly and fuel poor households on a regular basis through work with many Social Landlords. We support charities such as National Energy Action and Energy Action Group and we would encourage these charities are fully engaged to help educate elderly and fuel poor on Smart Appliances and Smart Tariffs.

**39) When does engaging/informing domestic and smaller non-domestic consumers about the transition to a smarter energy system become a top priority and why (i.e. in terms of trigger points)?**

It is our view that the domestic and smaller non-domestic consumers should be actively encouraged to move to a smarter energy system once the relevant building blocks are in place, if not before. We would certainly encourage the move to be promoted once the availability of Smart Tariffs is confirmed. As we have stated above, the technology to allow a move to a smarter energy system has been developed, it just needs to be trialled further to prove the benefits and for Smart Tariffs to be provided.

**47) Can you give specific examples of types of support that would be most effective in bringing forward innovation in these areas?**

We would agree with your view that there has been limited commercialisation of new DSR approaches in the residential and SME sectors. EHC have, however, brought to market our DSR Electric Radiators. EHC would like specific funding made available for trialling these DSR technologies so we can fully understand the benefits they can provide. Whilst the Government has put significant funds behind other schemes, we would encourage a specific innovation budget aimed at trials of DSR products and technologies in residential and SME customers. EHC agree that trials can learn from early adopters of DSR technologies and we believe we have valuable knowledge and input that could assist with developing DSR technology further.

EHC are also developing an inter-operable control system that, for DSR purposes, can communicate with a range of domestic electric heating products. EHC would like to see more funding available for this types of specific DSR innovation and for trialling these types of products.

**48) Do you think these are the right areas for innovation funding support?**

EHC do think you have identified some of the correct areas for innovation however we would also add