**BEAMA response to BEIS Smart Appliances consultation**

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**Response type**: Organisational

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*BEAMA is a UK trade association representing over 200 manufacturers of electric heating, heat pumps, storage ventilation and controls (including gateway devices and CADs) products, among others in the wider electrotechnical sector.*

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| 1. Do you agree that the Government should take  powers to allow for regulation on standards for smart appliances? |
| **This should improve information for consumers, but terminology needs to be precise**  We are minded to answer Yes. We agree in the principle that a voluntary labelling scheme would incentivise this market. However, the question is not phrased helpfully as it is rare for standards to be regulated and there is a need to be careful and precise with terminology. To be clear, we are not convinced regulation needs to be based on technical standards. While we note BEIS claims technical standards will come later, and that a label will be based on certain ‘functionality standards’, standards are developed by industry and sometimes referenced in regulation. But because technical standards are updated it is a risk to reference technical standards directly in regulation.  Regulation should be applied to remove market failures. The primary market failure identified in the report is around the takeup of smart appliances versus the available energy market offerings with regards to services that customers can access to gain value from new smart appliances and products. Therefore, yes, we agree regulation should target information requirements (labels) for appliances and in ensuring the DSR market is accessible for domestic customers. Smart metering and half hourly settlement will not facilitate this alone, but requires advances in network charging as well (something we know is being looked at by Ofgem), only this will create cost reflective charging in real time. |
| 2. Do you agree that a label is a good way to engage consumers with smart appliances? Please include your views and experiences with key aspects of labels which are most effective at engaging consumers, including analysis on uptake of the relevant device. |
| **Yes, but BEIS must avoid conflict and confusion with other schemes**  We are minded to say Yes, but with caveats. If there are numerous labels being used, this could be confusing so the content, design and relation to other schemes, such as EU Ecodesign/label, is all-important. Whether a label is useful also depends on the functionalities it covers (see question 4).  We are minded to suggest that a label should be voluntary and closely integrated with an EU energy scheme to minimise confusion, divergence and associated costs of this. E.g. we are conscious of Ecodesign Lot 33 for Smart Appliances and the work on the Smart Readiness Indicator under EPBD. We are working with Applia (formerly CECED) and others at European level to engage on these.  **We have supported the more developed work on labelling at EU level**  BEAMA members are very familiar with the EU Energy Labelling process and regulation. This is has proven to be an effective tool for engaging consumers and our members are able to provide reflections on their experience and what works best for the market.  **‘Smart’ should mean DSR facilitation**  BEAMA has supported the overall drive from the European Commission to create a label for smart appliances to demonstrate their role in achieving ‘Demand Side flexibility’. DSR facilitation is a key aspect of ‘smartness’, and we believe that this should be the primary determination of what appliances count as ‘smart’ – so a function over and above those products that solely have some interaction or control via the internet. There should be a clear explanation of what is meant by ‘smart’ that consumers can understand.  **A scheme should be voluntary at first**  We see a voluntary labelling scheme as a means to provide clear advice to consumers and avoid a plethora of differing claims across the industry, which are already emerging (e.g. ‘smart grid ready’, ‘smart grid enabled’). Some outlook to further steps, ie functionalities becoming mandatory or non-smart and non-functional products ultimately dropping out of the market, should help drive uptake among industry and consumers than a voluntary scheme with no further outlook.  **Developing a scheme will be complex – DSR/F relates to systems as well as individual products**  There are unique challenges in developing labelling for Demand Side flexibility (DSF) and for the range of products in scope of this work. Firstly, our experience with energy labelling historically has been to determine the energy efficiency of a product, whereas DSF is a system application and harder to evaluate for a single product, therefore there will be limitations on what can be declared on a single product at point of sale given DSF can only be enabled when connected to a system or service. However, there are important functional requirements that we agree can be identified behind a label for smart appliances (e.g. communication link, data etc).  **Developing a scheme will be complex – some products will need different provisions**  Secondly this case applies to a range of different products that may have different requirements and capabilities from a DSF perspective. BEAMA members currently conform to existing regulatory requirements under eco design which would directly conflict with Demand Side flexibility enabling applications if mandated through regulation or a labelling scheme. A good example of this would be the requirements under Lot 2 for water heaters which sets out minimum functionality for smart control. In this instance smart control determines a usage profile for the consumer and uses this to optimise the efficiency of the system. This relies on regular patterns of usage (indicative of domestic water usage). If you then apply DSF and the option to interrupt usage patterns this may affect the overall efficiency of the system and changes will need to be made to overall smart control applied with water heating. BEAMA support the fact that water heating could provide an effective means of DSF, in fact there is huge potential from this demand profile in buildings and new technologies are evolving on the market to enable this.  However, in considering how the industry would be incentivised and regulated this needs to be factored into the final label and how it is applied into the market and regulated. This also justifies a detailed review of smart controls as applied for water heating and blanked requirement for a label may not work for all appliances.  In addition, we would take this opportunity to point you towards draft standard EN 60335-1 (Household and similar appliances, General Requirements – safety - including appliances which may be controlled through or communicate with public networks) and EN 60335-2-30 (Household and similar electrical appliances – Safety- Part 2-30: Particular requirements for room heaters). Notably, there is a section in EN 60335-2-30, where it has been proposed that a marking be placed on heaters with remote operation function, which an explanation in the user manual to indicate that the heater can be started at any moment, and it should not be covered by or in the vicinity of flammable materials.  **BEIS should ensure a label is at the least compatible with other schemes, and ideally integrated as part of a European approach – this will require a detailed review of existing schemes**  The marking/ label icon that is proposed would seem similar to the marking that is shown in the draft Task 7 report of the Lot 33 preparatory study. This is an example of where the commission and BEIS need to be careful in creating a label that doesn’t create confusion with existing labels. There may be many cases of this and the recommendation to the Commission for the lot 33 work is a review of the products and existing standards and labelling requirements is made before confirming the final lot 33 proposal.  3 years of work has been conducted to produce the final recommendations that have gone to the Commission for Lot 33. BEAMA have been feeding into this with BEIS during this time. The proposal as it stands is as follows:  • Proposal: For all appliances in scope and covered by existing Energy Labelling regulation (EU) 2017/1369, an energy icon should be added on the energy label if the product complies with criteria for ‘energy smart’ functionality.  • Proposal: For all appliances in scope and not covered by an existing Energy Labelling regulation, but covered by an existing Eco-design regulation, the product should have an ‘energy smart’ icon attached if the product complies with the criteria of ‘energy smart functionality.  • Products in scope but not covered by eco-design and Energy labelling to undergo preparatory studies to establish measures for inclusion  • Proposal for the standardisation of a single common data model and application protocol. Therefore, there is the possibility of a mandate from the commission.  This seems directly in line with what the UK are looking to achieve. We strongly support the need for a European solution for this. Especially as our standards for electrical products are already very aligned (as compared for example to U.S standards). Overall BEAMA support the proposals set out above and believe this would help develop the market for smart appliances, provided the market services are established alongside it.  **Some issues remain with Lot 33**  There are a few issues we are currently discussing with the consultants VITO and the Commission regarding the final proposal for Lot 33. These include the following:  • The current scope for the label excludes products with external controllers (‘controller’ as defined in Lot 33 – this is not necessarily the thermostat for example but the control device that allows for the external communication to be enabled). BEAMA and all of our Eu trade associations working on this strongly disagree with this decision and this has been communicated to the Commission. In applying this scope it would create an unfair market advantage for appliances with integrated controllers. A lot of heating products are sold onto the market today with external controller, either as part of the thermostat or a hub/ gateway device. A good example here would be a heat pump with zoned heating controls. A lot of BEAMA members are also providing integrated heating and hot water systems with a central hub and gateway which will allow with Demand side services to operate with the system. The ability to provide external controllers can allow for more advanced system capabilities, and the decision to exclude from t the scope would eliminate a large proportion of flexible products from being able to apply the energy smart label as proposed in the final report. The heating and cooling market especially is a very modular market where appliances consists of several separate components. In our view, a lot of these products are those with the most significant flexibility potential, and this decision would create confusion for consumers and un-fair competition in the market as labels will only be applied to some appliances or elements of a system. In considering the scope of any label BEAMA strongly support the need for this to be inclusive of all appliances capable of demand side services, otherwise the objective of a labelling scheme (to eliminate confusion for consumers, create a fair and competitive market for smart appliances, reduce costs) will not be achieved.  • The European Commission are considering the recommendations from the Task 7 report. In doing so they have asked our EU trade association (APPLiA) to review the functional requirements in the scope of the study as it is felt these may not all be necessary or achievable if we are to introduce a label in the near term. BEAMA are pleased the commission are reviewing this as we agree some of the proposed functional requirements are not necessary, and in some ways the simpler the better, and more applicable for the range of products in scope. We have provided with this response an attached APPLiA position paper that has recently gone to the Commission outlining out views on the functional requirements proposed under Lot 33 – this document is to remain confidential but is supported by BEAMA and demonstrates the breadth of work we are contributing to in developing the labelling requirements.  **Further comments:**   * Timing is important – if there are technical standards underpinning the four main functionalities that BEIS is proposing, these need to be kept up to date. In fact the whole design of the scheme needs to be considered alongside potential fast-moving developments – e.g. a common data model for interoperability may look quite different if there are market developments towards one system or another while BEIS is working on its scheme. If the scheme is seen as out of date, or there needs to be several regular changes to the main scheme, this may be confusing for consumers. * Any labelling scheme would need to be visible for online commerce as well as browsing in person. * Market surveillance needs to be right from day one – otherwise the scheme will not succeed. |
| 3. The consultation stage Impact Assessment published alongside this consultation document explores the costs and benefits of the options considered for this policy. It indicates that mandating standards for smart appliances provides the greatest net benefits, compared to voluntary standards. Do you agree with our analysis? In particular, please consider the following, and provide analysis to back up your views:  a) Likely consumer uptake of smart appliances, including which type of consumers and anticipated time frame;  b) Consumer use of the smart function provided by smart appliances in relation to different types of tariffs, including fixed and variable;  c) Potential financial benefits to consumers through smart appliance usage in combination with smart tariffs and offers;  d) Monetised and non-monetised costs for industry to comply with standards,  including consumer businesses, smart appliance manufacturing businesses, smart appliance service providers, supply chains and the electricity industry (such as Distribution Network Operators);  e) Potential impact on the price of smart appliances which comply with  standards compared with non-smart appliances. |
| To be clear, all standards are voluntary - compliance to those standards can be mandated through direct reference to standards in regulation.  As noted previously there are risks associated with referencing specific standards in regulation given the process they may go through for updating.  We can see from the Impact Assessment that mandating labelling and the associated standards could drive down the costs across the market for smart appliances. However, the additional cost to comply with the principles as set out in the Lot 33 proposal for example are relatively low, even with a voluntary scenario. It is our firm belief however that the market is too young for a mandatory approach to regulation and standardisation today, the risks are too great should the UK lock the industry into one route when we are still developing new standards in the market. We have explained further how the industry are coming together on this and at what stage in the communication interface we should standardise and where this could fall under regulation. It is possible with our defined approach to achieve interoperability, and a label in the U and across the EU would help to ensure confidence is upheld for consumers.  It will be far easier to mandate functional requirements for smart appliances today which may refer to the function they deliver for consumers e.g short term load shifting (KW) – 30-15 minute period, availability of data, control…)  We would argue that the Impact Assessment should take account of the full range of direct and indirect benefits of current and potential uses of connected systems, including assisted living (and associated health cost benefits).  We will send BEAMA’s ‘Electrification by Design’ paper which details further the opportunities for all from a strong market of smart appliances and associated functionalities and market structures. |
| 4. In this document, we have proposed minimum functionalities for each principle. Do you agree with these functionalities? What functionalities should be considered in addition to those listed above? Please divide your responses according to:  i) Interoperability;  ii) Grid-stability and cyber-security;  iii) Data Privacy;  iv) Consumer Protection. |
| We are minded to agree that these factors are important for consumer protection and should be covered in some way.  **We agree with the decision to keep energy consumption out of this**, as energy efficiency standards and associated labelling through the Energy Labelling regulation focuses on achieving energy efficiency. For this label to be successful it has to be very clearly and tightly defined – energy smart – proving the ability for a device/appliance to provide Demand Side Flexibility (DSF).  We are **supportive of BEIS’s proposal to work with industry to identify and develop technical standards** that could indicate compliance the principles.  We support BEIS’s acknowledgement that standards may need to be developed horizontally for different products given their difference in Demand Side capability’s (frequency response, load shifting etc). Under Lot 33 it has been concluded that a horizontal label to capture all appliances would be very difficult to achieve. While we can envisage some core principles that would remain the same, by trying to apply for all appliances it is likely you need to simplify the requirements of label to such a degree this would deem it in effective.  We believe the principles can remain the same but to create a label that has meaning, a more hybrid approach would be required. Under Lot 33 it was suggested this could be done for different products categories (e.g. White goods, HVAC, EV charging). This is consistent to our response to the original call for evidence, where we suggest work is required to conduct a deep dive into product categories and their specific requirements for demand side services (see our answer to question 7 for further comments on this point).  **Interoperability**  With regards to interoperability, yes this is a key principle, and BEAMA agree we need open standards to ensure customers are not locked into products by one manufacturer. We would like to ensure BEIS and Industry are defining what they term as open standards correctly. In this context within the principles outlined in the call for evidence, when we refer to ‘open standards’ we are agreeing these are standards that ensure interoperability and data exchange across different products potentially using different communication protocols and methods of communication. This interoperability will be achieved through standard data formats.  The best way to understand how we need to provide interoperability in the market is to refer to the OSI communications model which describes how communications systems are designed. BEAMA is often saying we do not want Government to intervene through regulation by mandating the protocols to be used by smart appliances. There are a multitude of communication technologies that represent the physical layer (Z-Wave, Zigbee, Wifi, Bluetooth etc). Different protocols and technologies have different pros and cons depending on what they are being used for. The key to establishing interoperability is standardising the data layers of the model. This is the primary focus of international standardisation work and BEAMA members are focusing our efforts on engaging with this. TC 205 WG18 is working on developing a common data model and application standard and therefore this would be a good starting point for the BSI work BEIS have initiated. Industry must be allowed to work on this and this should not be regulated until we are confident we have the best solution for consumers.  We favour a common data model, acknowledging that interoperability can be resolved in the cloud. This would avoid Government having to pick a ‘winner’ API (e.g. Hypercat). This would allow maximum market growth for smart appliances and systems, and would not close off the UK to offerings from elsewhere. This is important given the number of multinational companies who would be disincentivised to participate in the UK market should it be more restrictive to certain appliances, or lack compatibility with schemes and labels in other jurisdictions (particularly the EU).  Standardisation at the top layer (application layer of the OSI model) could allow for horizontal standards to support a label across all products in scope of the smart appliance work. The standards used for the physical layer will need to vary by appliance as they have different characteristics suiting specific needs of devices.  The work BEIS have initiated with BSI will bottom some of this out and BEAMA will ensure we feed into this work. BEAMA already have a nominated expert on the committee overseeing this project and we will contribute to the final recommendations this project presents to BEIS as well as work towards creating a BEAMA position on the suitability of APIs in the market today and how we intend to work towards a standard platform in the UK that is compatible internationally.  **Consumer protection**  In the report BEIS refers to the upfront cost of smart appliances potentially impeding uptake. BEAMA believes work to present the demand side market services available for consumers in a clear and understandable manner MUST be developed alongside the development of product labels. From a regulatory point of view market design principles to enable demand side market services and the appropriate pricing mechanisms must be developed hand in hand with the labelling. BEAMA’s principle for this has always been if we get the market offerings correct and the incentive is there, consumers will buy smart appliances. It is not sufficient to place the burden on manufacturers to develop new applications if the market is not there to support this and transfer benefits to consumers.  **Data privacy**  Requirements for data privacy to some extent depend on who holds the data – if there is an overarching service provider it is expected that they will have the responsibility, but manufacturers will need to ensure that their devices can facilitate data privacy. It is expected in most cases however that manufacturers will hold and have access to relatively little data about consumers once they (or an intermediary) have sold them a product. Consumers will need to be kept aware of what they are signing up for when they buy a product, so that any products that ask consumers to register their details after purchase make this clear up front.  **Grid stability** *(in the sense that an appliance needs to be a functioning product to facilitate DSR/F)* –  Making grid stability a requirement for an appliance presupposes that grid stability will be assured by “randomisation of response to signals at appliance level” (p18) rather than “staggering signal to defined appliances” – simply because you can’t issue a label to an appliance to assure the latter. So the question makes certain assumptions that may not be appropriate. It may be more appropriate for National Grid or DSOs to take responsibility as well as or instead of manufacturers?  **Cyber security**  We are mindful of separate Government work on cybersecurity (e.g. through the Secure by Design work) and the EU Cybersecurity Act. BEAMA considers that these should be closely tied in with the requirements for any smart appliances scheme and we would hope that there is no duplication of efforts in this area. |
| 7. Do you agree that the standards should be applied as uniformly as possible across smart appliances, for example, horizontally, and should be catered to individual appliances only where necessary? |
| There needs to be some care given to certain product areas. A good example of this would be the requirements under Lot 2 for water heaters which sets out minimum functionality for smart control. In this instance smart control determines a usage profile for the consumer and uses this to optimise the efficiency of the system. This relies on regular patterns of usage (indicative of domestic water usage). If you then apply DSF and the option to interrupt usage patterns this may affect the overall efficiency of the system and changes will need to be made to overall smart control applied with water heating. BEAMA support the fact that water heating could provide an effective means of DSF, in fact there is huge potential from this demand profile in buildings and new technologies are evolving on the market to enable this.  However, in considering how the industry would be incentivised and regulated this needs to be factored into the final label and how it is applied into the market and regulated. This also justifies a detailed review of smart controls as applied for water heating and blanked requirement for a label may not work for all appliances.  In addition, we would take this opportunity to point you towards draft standard EN 60335-1 (Household and similar appliances, General Requirements – safety - including appliances which may be controlled through or communicate with public networks) and EN 60335-2-30 (Household and similar electrical appliances – Safety- Part 2-30: Particular requirements for room heaters). Notably, there is a section in EN 60335-2-30, where it has been proposed that a marking be placed on heaters with remote operation function, which an explanation in the user manual to indicate that the heater can be started at any moment, and it should not be covered by or in the vicinity of flammable materials. |