The Association for Renewable Energy and Clean Technology

Consultation Response

REA Response: Delivering a smart and secure electricity system: the interoperability and cyber security of energy smart appliances and remote load control

28th September 2022

Introduction

About the Association for Renewable Energy and Clean Technology ('the REA')

The REA is the UK's largest trade association for renewable energy and clean technology, representing around 550 member companies operating across the heat, power, transport, and circular bioresources sectors. The REA has technology-specific Member Forums, each with its own elected Chair and Steering Group. In the case of this consultation response, member input was received from the REA EV Forum and Solar and Energy Storage Forum.

About this consultation response

This consultation response focuses on the key issues of concern to REA members. It does not offer comment on proposals that do not impact the business sectors covered by our membership.

Contact

For questions and further discussion, please contact Callum Coleman, Policy Analyst (ccoleman@r-e-a.net) or Jacob Roberts, Transport Policy Manager (jroberts@r-e-a.net).

Details

Are you happy for your response to be published in full? Yes

Are you happy for you/your organisation to be named in a document summarising the responses received? Yes

As part of your response, have you included any other information separately from this consultation response template? If so, please provide a brief summary of what it is? No

Are you happy for us to contact you to keep you updated on the policy and consultation, including to notify you of stakeholder events and/or if we have follow-up questions on your consultation response?

Yes. The timing of this consultation has limited our capacity to engage with members and form our response, particularly in light of the many other consultations launched by BEIS over the summer including the Review of Electricity Market Arrangements. We encourage BEIS to undertake further stakeholder engagement before any policy outcomes from this consultation are brought forward.

1. **What are your views on the over-arching timings of implementation of these proposals, including the proposed approach to phasing?**

We agree that energy suppliers should be required to make time-of-use tariff data openly available in a common format, accessible over the internet, by the mid-2020s. For both domestic and commercial tariffs. We do, meanwhile, not agree that all domestic-scale ESAs should be required to meet new cyber security and grid stability requirements by the mid-2020s, at their own cost.

The consultation document states 'not all tariffs and services are available for all devices, and there are limited consumer protections to build confidence in the market.' We agree with the suggestion that tariffs should be made more widely available to all devices, but see no evidence to support the implication that the lack of growth in the market is due to limited consumer protections.

Consideration should also be given to organisations who will newly become subject to the NIS Regulations. This is particularly the case in light of a skills shortage in the cyber security sector. We therefore suggest that support is made available to organisations for whom these regulations will present new and unfamiliar business requirements.

Care should be taken to ensure that requirements for ESAs do not significantly pre-date the widespread availability of DSR services and time-of-use tariffs. If this were to occur, ESA manufacturers and providers would have been exposed to significant costs to meet the requirements of these regulations, without being able to access any of the benefits or the value offered to energy consumers (via time-of-use tariffs) or to the electricity network (via DSR services). It is important that there is as little delay between the costs being incurred and value being created. However, we accept that it is unrealistic that those two things can be delivered entirely concurrently.

2. **Do you agree with the Government's proposal to make certain load controllers subject to the obligations in the NIS Regulations? Please explain your answer.**

3. **Do you agree with the Government's proposal of setting a threshold requirement of 300MW of remote load control for a load controller to be considered an operator of an essential service under the NIS Regulations? Please explain your answer, and provide supporting evidence.**

We hold no strong views on the threshold.

4. **Are there any other threshold metrics that should be considered, for instance if organisations have more than a certain number of customers/appliances connected?**

For electric vehicle charging, consideration should be made that an electrical load will only occur when a vehicle is plugged in. So long as an electric vehicle is not plugged in, there is no possibility for a load to be created and therefore there is no associated cyber security risk.

We consider it to be impossible that an electric vehicle will be plugged in on every chargepoint that an chargepoint operator controls. Therefore, the total effective load of a given chargepoint operators (the load controller, in this case) will not match the theoretical maximum load of their charging network.

We therefore suggest that chargepoint operators are exempt from the 300 MW threshold, as it is set out in this consultation, and instead become subject to the NIS regulations when their actual observed load reaches 300 MW (as opposed to theoretical maximum load).

It is also important to note that these requirements only apply to EV charging equipment, and not to the electric vehicles using said equipment. By not including electric vehicles in the scope of these requirements, there is a potentially unaddressed vector for cyber attack. We suggest that the automotive sector is consulted and involved in the process of developing these regulations.

5. **Do you agree with the Government's proposal of using the Cyber Assessment Framework (CAF) to support the implementation of the NIS requirements for load controllers? Please explain your answer.**

6. **Do you agree with our proposed outcomes for interoperability? Please explain your answer.**

We agree that maximum interoperability is beneficial both for consumers and for the market. Standardised communications between ESAs and DSRSPs will allow consumers to access different DSR offerings. We also support the principle that reform should encourage ESAs to: receive and respond to time-of-use tariffs from different energy suppliers; and provide DSR services with different DSR service providers. We agree that Government should not compel ESAs to work through any user interface or third-party ESA operator.

However, the Government would be wrong to assume that the introduction of these interoperability requirements for ESAs will lead to greater uptake of DSR. The roll-out of these technologies is not stymied by lack of options to participate in DSR services, but by the upfront costs of installation to consumers and by the slow pay-back time on many of the technologies.

These problems are best addressed through a new Government-funded energy-efficiency scheme and through permanently reduced VAT on ESAs to make them in line with the reduced VAT rate on fossil fuels for domestic use. REA would support these measures.

7. **What are your views on the initial proposed outcomes for cyber security of Energy Smart Appliances? Is there anything missing or not relevant?**

We would like further clarity on who is intended to be deemed responsible for misregulation of the assets, whether this be the manufacturer or operator.

8. **Do you agree with Government's proposed data privacy outcomes for ESAs?**
9. **Do you agree with the risks to grid stability and proposed outcomes Government has identified? Is there anything missing or not relevant?**

10. **Do you agree with Government's proposals to make time-of-use tariff data openly available in a common format for Energy Smart Appliances?**

We agree with this proposal, as set out above. However, it is unclear in the PAS standard what this means in practice and whether it would be hourly or half-hourly. In the PAS standard, it is only applied to hourly prices. We would like further clarity in this regard.

11. **Do you agree that the Smart Energy Code could provide the appropriate governance for development of common data standards? Please explain your answer.**

12. **How should Government ensure that Energy Smart Appliances integrate with time-ofuse tariffs, beyond providing interoperability with tariff data?**

We believe that a common data language for time-of-use tariffs should be developed in partnership with ESA manufacturers. The benefit of this approach would be a "meet in the middle" outcome, minimising

the risk that the common data language is incompatible with the data protocols already used by ESA (e.g. OCPP, in the case of EV charging equipment).

13. **Should government consider standardisation of other types of 'incentive data' used by ESAs for DSR? Please consider what types of data and how they could be standardised.**

14. **Do you agree that Government should establish regulatory requirements to promote adoption of ESA standards, and what would be your preferred approach? Please consider the advantages and disadvantages of an 'approved standards' (Option 1) vs. 'mandated' (Option 2) approach.**

15. **Do you agree that a standard based on PAS 1878 should be used in the future regulation of ESAs?**

16. **Do you agree that Government proposals for ESA standards should apply to domestic scale ESAs with the highest potential for flexibility, including private EV charge points, batteries, heat pumps, storage heaters and heat batteries? Please consider whether any other types of ESA should be in scope.**

We agree with the Government's proposals on which ESAs should be in scope of these requirements. However, the proposals should only be applied to ESAs installed in domestic environments (i.e. connected to domestic electricity supplies).

Separate proposals should be developed for non-domestic ESAs. This is because the markets and practicalities of domestic and non-domestic energy supplies are profoundly different. We consider the proposed requirements to be suitable for domestic ESAs, but unsuitable for non-domestic ESAs.

17. **What is your preferred option for developing and maintaining ESA standards in the future? Are there other options we should be considering? Please explain how you would expect your preferred option working in practice.**
18. **Should Government mandate a randomised delay for ESAs, including heat pumps, storage heaters, heat batteries and batteries, to mitigate against risks to grid stability, in advance of longer-term ESA standards? Views are welcome on how a randomised delay could operate and on alternative mitigations.**
19. **Should minimum device-level cyber security requirements be implemented for heat pumps, storage heaters, heat batteries and batteries, prior to implementation of enduring ESA standards? Should any other ESAs be considered?**

20. **Is ETSI 303 645 an appropriate standard for minimum device-level cyber security requirements for ESAs?**

Yes, we believe that the ETSI regulations are appropriate.

21. **Do you agree that common systems could be required to mitigate system-wide risks? What issues will need to be considered in the design of such systems?**

We are strongly opposed to Option A, which proposes to expand the responsibilities of the DCC. Members have indicated that there is too long a history of administrative problems with the DCC, and industry has doubts over the capacity of the DCC to deliver appropriately. Option A could create a barrier to entry due to the DCC's history of delayed delivery and outdated standards.

22. **What issues will Government need to consider when reaching a decision on delivery approach for common systems?**

Please see a list of issues to consider below:

- Different stages of technological development across technologies. The REA is well-positioned to advise here as a pan-technology trade association.
- Current up-take of these technologies by UK consumers.
- How the delivery approach will affect consumers' understanding of these products, their price, and the wider likely impact on uptake. These issues should also be considered in the current context of the energy bills crisis.

23. **What are the key considerations for design of governance during the development, transition and delivery phases of implementation?**
24. **Are there any considerations Government has not mentioned above that should be factored into future policy on assurance? Please consider assurance for devices and associated systems, such as 'cloud' platforms.**

We would encourage Government to look at the OCPP and the OCPI as good examples of protocols, on which wider ESA protocols could be based.

25. **What is your preferred approach for assurance for ESAs, and why? Please provide any evidence on the relative impacts, costs, and benefits of different approaches.**
26. **Do you think a labelling scheme for ESAs could help promote consumer uptake in DSR from ESAs? If yes, what type and form of labelling would be most beneficial?**
27. **What factors should government take account of when considering how the costs of delivering these arrangements should be distributed and recovered?**

This is an important question not just for the individual companies affected but for the wider Net Zero agenda, and the answer may vary for different technologies. Long-established manufacturers of widely deployed technologies are likely to have more resources to fund such measures.

The cost of new regulations should not be borne by nascent industries such as heat batteries, domestic-scale batteries, heat pumps and EV charging. Costs that are absorbed by the manufacturer will inevitably result in less funding for development and marketing, which are crucial for these nascent industries. Similarly, any costs passed on to the consumer will deter buyers and inhibit the uptake of these technologies at a period when they need to be rolled out widely.

28. **Do you agree that the smart mandate should initially apply only to hydronic heat pumps, electric storage heaters and heat batteries? Please explain your answer.**
29. **Do you have a view, and supporting evidence, on which appliances the mandate should be extended to include in the future, and by when?**
30. **Do you have a view, and supporting evidence, on the impact that the proposed mandate may have on different consumer groups, for example low income and vulnerable consumers, in terms of upfront costs, running costs or otherwise? What further action is needed to ensure all groups can benefit from smart heating?**

31. **Do you agree with the proposed definition and approach to delivering smart functionality for electric heating appliances? Please explain your answer. If proposing additional requirements to include in the definition, please provide evidence on the costs and benefits of such requirements.**

We are broadly supportive of this. We are supportive of any legislation promoting the reduction of carbon emissions through provision of flexibility.

32. **Do you agree with the proposal to implement the smart heating mandate from 2025? Please explain your answer.**
33. **Do you have a view on what other measures could be taken, in addition to the proposals in this consultation, to ensure heat pumps can provide this flexibility, for example a minimum level of thermal storage?**

The primary concern at the moment is the take-up rate of the technology among consumers. The flexibility on offer from heat pumps to the electricity system will be limited if the take-up of heat pumps remains low.

34. **Should Government consider introducing a 'smart mandate' for domestic-scale battery systems or any other appliances? If so, what appliances and why?**
35. **Do you agree that licensing should initially focus on organisations providing DSR for domestic and small non-domestic consumers? Should there be any exemptions to these requirements? If so, why?**

We do not believe that implementing a license framework will help to facilitate the growth of DSR. There has so far been cost barriers to the consumer from the technologies, lack of recognition of value of flexibility to the system and proportionate rewards to consumers, and a lack of willingness among energy suppliers to experiment with TOU tariffs.

36. **Do you have initial views on how a licensing scheme should be implemented – for instance, should it be linked to providers of services relating to specific products, linked to the size of the consumer, or some other approach?**
37. **What design principles do you agree or disagree with? What principles would you like to be added?**
38. **How should proportionality be delivered in a future licensing framework?**

The framework should take account of the developmental level of each technology covered and how easily the industry, depending on its size, will be able to adapt to the framework. For SMEs, changing their technologies to such a framework is likely to be very expensive – this in turn would likely affect the consumer price.

The framework should also take into consideration the numbers of serious incidents that have previously occurred as a result of poor design or faults.

39. **What additional protections for consumers could be required from a future licensing framework beyond those contained in existing consumer protection law?**
40. **Are additional data privacy protections required for DSR beyond those existing in law through the General Data Protection Regulation? If so, what additional measures should be introduced and why?**

41. **Do you think that licensing requirements could be appropriate to manage cyber security risk in future, alongside the device level and (for the largest load controllers) NIS measures outlined elsewhere in this consultation? Please explain your answer.**

The Government has already applied the ETSI standard, which we understood to be adequate. Too many regulations may encourage a limited number of providers to ensure that their appliances are not smart, so that they are not burdened with additional costs.

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42. **Do you agree that licences should contain conditions to ensure that organisations are not able to use their market position to hinder consumer switching or undermine delivery of Government's objectives for interoperable energy smart appliances?**
43. **Do you agree that licence conditions may be a useful tool to help mitigate risks to grid stability alongside the measures outlined elsewhere in this consultation? What licence conditions may be necessary to achieve this?**
44. **Are there other risks to grid stability or cyber security from other forms of load control that are not covered by the proposals in this consultation? If so, how significant are these and how should they be mitigated?**