

Sent by email.

SSES team (NZEN)
Department for Business, Energy and Industrial Strategy
3rd Floor,
1 Victoria Street
London SW1H 0ET

28 September 2022

Dear Sanu de Lima and team

Re: BEIS Consultation on Delivering a Smart and Secure Electricity System

Thank you for the opportunity to respond to this consultation. This response represents the views of the Retail Energy Code Company (RECCo) and is not confidential.

The Retail Energy Code Company (RECCo) is a not-for-profit, corporate vehicle ensuring the proper, effective, and efficient implementation and ongoing management of the Retail Energy Code (REC) arrangements. The REC has the broadest coverage of energy industry market constituencies and stakeholders, and seeks to promote trust, innovation and competition, whilst keeping positive consumer outcomes at its heart. It sets out the rights and responsibilities of industry parties for the consumer facing processes it manages and has implemented a new technical and performance assurance framework to help build confidence and trust, by ensuring standards are followed consistently by good industry performance. We are committed to ensuring that RECCo is an “intelligent customer”, ensuring efficacy and value-for-money of the services that it procures and/or manages on behalf of REC Parties.

We welcome this opening consultation from BEIS and support its aim of developing arrangements to grow and evolve the markets for demand-side response services (DSR) and energy smart appliances (ESA). Key considerations will be what standards, rules and principles might be needed to ensure interoperability, cyber security, data security and privacy, and grid stability whilst delivering good consumer outcomes.

We understand and support the drive for Net Zero, and acknowledge the estimated £10 billion in savings which DSR and ESA’s may deliver. However, it is not entirely clear from the consultation which problems BEIS wish to focus on tackle as a priority in order to deliver those targets, i.e. is this primarily a consumer engagement and adoption problem, or is it one of network stability. Whatever the primary goal, we believe that consumer engagement and consent will be critical to the adoption of these technologies which will facilitate the ultimate goal of achieving Net Zero. We have therefore answered many questions on the assumption that consumer engagement and adoption must be addressed.

The regulatory solutions to this, and other initiatives that BEIS seeks to pursue through the Energy Security Bill are likely to impact upon several existing energy codes, notwithstanding the code reforms that may be progressed as part of that Bill. The need to make early progress in order to meet the Governments 2030 emissions targets means that we must proceed on the basis of existing governance and cannot reasonably wait for any potential reforms to first be

made, particularly as any emerging model will still require a high degree of cross-industry collaboration. We are therefore keen to work with colleagues from other code bodies to identify and develop the consequential changes that may be needed to deliver these proposals. Early and effective adoption through codes should also negate the extent to which any new arrangements may need to be codified through licence, and generally help expedite progress. However, we also consider that many of the subjects raised in this consultation may impact upon multiple industries expanding beyond energy alone, e.g. communications networks and equipment manufacture. Careful consideration is needed in order to align the interests and change programmes of these various interests in order to avoid conflict which may hinder the pace of adoption.

During this consultation period we have engaged with some of our stakeholders to gather wider feedback and test some of our assessments. In particular, we have shared thinking with the DCC and have welcomed its insights, including the practical experiences of other governance arrangements and implementation programmes.

Our detailed response to each of the consultation questions are set out in the appendix to this letter. We would be happy to discuss any of the points raised in further detail whether technical or regulatory.

Yours Sincerely,

Jon Dixon
Director, Strategy and Regulation
Retail Energy Code Company.

Appendix A: Consultation Questions and RECCo Response.

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

RECCo supports the phased approach to the development, transition and implementation timetable proposed by BEIS. We agree there needs to be a balance between delivery, developing a level-playing field for providers and standards for interoperability, security and privacy with appropriate protections and choice for consumers. Targeting and prioritising development and delivery will enable some quick wins to kick start the transition, whilst policy makers seek to understand new technologies and their requirements. Building incrementally can avoid a one size fits all approach that does not allow for new technologies that are perhaps still in their infancy and therefore not fully understood.

Using existing regulatory framework can support a phased approach, which will be particularly important given some of the short-term aims. Allocating ownership of issues according to existing areas of specialism is more likely to achieve good outcomes at pace. However, we also recognise that there may need to be some effective over-arching programme governance in order to coordinate the various regulatory strands that may emerge.

There is a close link between this phased approach, which will facilitate a degree of early adoption, while retaining some ability to adapt in order to ensure that all consumers can engage with and benefit from a more flexible energy system, avoiding any consumer segments being left behind and exacerbating the problems of digital exclusion. For instance, when looking at the rollout of time of use (ToU) tariffs, these will only be available to those who have an operating smart meter and will require a large portion of those consumers to grant access to granular reads to provide the data from which ToU propositions will be developed. It may be appropriate to give consideration to the role that legacy technologies such as radio tele-switching could have, at least the transitional period if not as a back-up option.

We look forward to engaging with BEIS on the future development and consultation phases of each proposal, and understanding how this will work alongside other industry programmes in flight i.e., Market-wide Half Hourly Settlement (MHHS).

Chapter 2 - Cyber security proposals for protecting the energy system

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

With the current detail available, it is unclear to whom BEIS should introduce the new cyber security requirements. We agree with the principle that there should be standards for monitoring, reporting and resolving incidents and risks.

We also agree voluntary or energy industry codes are unlikely to deliver better standards than the specialist standards set out in the NIS. The proposed extended application within the energy regulatory framework, focusing on outcome-based principles appears proportionate and appropriate. This approach should ensure consistent, resilient, reliable, and secure energy management in the long-term and should keep pace with an evolving set of cyber security risks.

This proposal needs to be implemented in a proportionate to service risk, cost effective and efficient way, noting consumers will ultimately pay for its introduction.

Whilst we support the use of existing standards in this area, we recommend hooks are introduced for regular review of requirements (between the energy and cyber security fields), to test their applicability against the unique energy appliance/network scenarios. To avoid unintended consequences, restrictions or risks.

We welcome further consultation on the application of requirements on NIS Regulation Compliance, which will include a NCSC risk assessment and engagement with network operators and organisation currently controlling load.

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.

Given the obvious issues posed by the new load controllers to energy stability, we welcome the consideration of an appropriate threshold for requirements to apply and are pleased that this initial proposal is due further analysis with National Grid Energy System Operator (NGESO), the National Cyber Security Centre (NCSC), electricity Network Operators, and current Load Controllers. The approach taken may need to be nuanced and varied due to locational or regional differences. For example, 300MW maybe appropriate across the UK but even 100MW on Orkney may not. The thresholds may therefore require some flexibility and continued review. We are pleased to note that this further work will include proposals on assessment, assurance and management of demand loss.

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?

We agree that other threshold metrics should be assessed as part of the further analysis and consultation. This may include a size of portfolio which might collectively meet an appropriate threshold load, as the risk may be similar to a Load Controller with a single 300MW load.

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.

Applying principles as set out in the consultation appears to be an appropriate approach to avoiding unintended consequences of prescriptive rules. Beyond this we would welcome a set review period, to analyse if this approach is helping Load Controllers manage and mitigate the risks and incidents that they face.

Chapter 3 - Energy Smart Appliances: Outcomes.

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

RECCo agrees in principle that interoperability across providers/propositions will be key to delivering consumer protections, flexibility for consumers to move when their circumstances change, and reduces the scale (and associated costs) of future change without stifling innovation. Enabling a competitive market for these new services. However, in order to make this a success, consumer engagement is critical. Consumers must have trust and confidence that there are sufficient protections, choice and flexibility if they are to adopt such technologies. We believe RECCo and the Retail Energy Code (REC) are well positioned to help facilitate this work.

To deliver the net zero goals on the scale required, conditional based automation is a necessity. Behavioural insights organisations and psychologists have proven the importance of human biases demonstrating the importance of minimising “barriers” between the consumers' needs and the outcomes that are promoted. If we are to succeed in achieving the outcomes proposed in this consultation, we must ensure we address the potential/perceived barriers. We believe there are two key areas where barriers need to be addressed.

One current barrier is a lack of trust the consumer has towards the energy sector. This can discourage consumers switching to time of use tariffs and releasing control of devices (even with agreed preferences), as it creates uncertainty in what they will pay and when something will be on or off. Given the remit of the REC, we believe it is well placed to play a role in the proposed new regulatory framework. This includes established governance and change procedures with all energy suppliers, distributors and meter operators, shortening implementation time scales and reducing industry communication risks. With change to the REC, it could introduce new requirements for both energy Supplier delivered ToU Tariffs or demand-side response services delivered through new DSR Service Providers. The REC could extend existing protections and set out new protections for the consumer and implement a regime to deliver compliance through its audit and monitoring mechanisms.

The second potential barrier is around how consumer consent is obtained and managed. An underlying aspect to achieving automation and increasing consumer trust is ensuring consumer have clearly provided informed consent to data and device control. This raises the question of how consumers provide consent - do consumers have to consent with every supplier individually? If so, we believe this would be a material barrier to wider adoption. This is due to a poor user journey of logging into multiple systems and different design approaches taken by individual companies. RECCo is advocating a centralised consumer consent system which consumers can be updated as needed and will then be available to all required parties, so should the consumer change home or supplier their preference remains unchanged; materially reducing the barrier to adoption. This also links with the Energy Digitalisation Taskforce Recommendation. We believe that this is a priority development which RECCo is well positioned to facilitate.

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 agree bringing in NCSC from the outset is a sensible approach, particularly as, this is a lesson learnt from the Smart Meter Implementation Programme (where engagement with the appropriate security body resulted in a late, wholesale change in the End-to-End security model and accompanying design). However, the risk and mitigating options need to be understood from a holistic view, including costs to deliver the desired levels of cyber security whilst enabling innovation. The cost of the smart meter rollout is now one of the highest in the world and therefore not delivering the return expected, so lessons should be learnt here in the decision taken for ESAs.

In other regions, countries have standards and products that are manufactured for a global market as opposed to country specific. Therefore, we should seek to avoid standards that could inadvertently cause product manufactures to avoid the UK market, limiting consumers choice and hinder innovation.

Additionally, there are existing best practice security standards which companies will already have e.g., ISO27001/2 will cover some aspects. Therefore, we would recommend, wherever possible to use existing standards and the extension of these, as opposed to the development of additional new standards.

8. Do you agree with Government's proposed data privacy outcomes for ESAs?

We partially agree with the Government's proposed data privacy outcomes for the ESA.

We agree with the statement "*Transmits and stores personal data securely, with controls in place to protect against access by unauthorised entities.*" as this is a risk-based and understood approach.

However, when considering the other outcomes: "*Avoids the unnecessary collection or transmission of personal data*" and "*Minimises the amount of personal data shared with third parties (including DSRSPs)*" we would advocate the use of existing GDPR rules and principals, as opposed to creating new principles and rules. We are concerned that as well as adding complexity, there would be unnecessary limits to separate, additional data privacy requirements.

The use of both established legitimate purpose principle and a developed set of consumer consent controls and systems will deliver the policy intent. We recommend amending to: "*Collection or transmission of necessary personal data to fulfill services and obligations*" and "*Engage with and seek consumer consent where necessary to provide services*".

9. Do you agree with the risks to grid stability and proposed outcomes Government has identified? Is there anything missing or not relevant?

We agree with the risks identified in the consultation and welcome technical and system analysis to qualify the risks and quantify the scale of the issue, articulating the associated impact and probability of each scenario. We believe this is necessary when considering how risks will be mitigated and building appropriate solutions. We fear without this, prescriptive rules could be included which will limit product innovation and consumer adoption. This would be detrimental to GB hitting its Net Zero targets on time.

Chapter 4 - Energy Smart Appliances: Technical Framework

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, without a common format the options for switching and machine automation are not reasonably possible. The challenge to achieving this will be getting industry alignment and ongoing governance should changes be needed as products and innovations adapt the market. RECCo and the REC is well positioned to facilitate and reach conclusions in this area.

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

The initial phase of this initiative does not propose to amend the very specific requirements of what smart data is managed on the meter, how it is requested or delivered to the relevant party. Rather seeking to set out data specifications of the type already handled under the REC.

Enabling positive consumer outcomes is a key driving focus behind REC and its data specifications support various everyday activities carried out on behalf of consumers, akin to those that might be needed for effective management of Demand-side response and Energy Smart Appliances including; identifying /managing the consumers' needs (including vulnerabilities, consent required, debt management), ensuring accurate management of the devices delivering services and that the services meet the current needs of the consumer. We believe the REC is more appropriately positioned for development of data standards related to the consumer and market interoperability.

Additionally, the REC is able to host voluntary (in development) arrangements, as they evolve. Allowing initial flexibility and proposals to be tested, before being finalised and mandated.

Noting the scope of services and arrangements which will be explored in future consultations, we can see both the Smart Energy Code (SEC) and REC could both be considered as part of the amended regulatory framework and play a part in developing these.

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

As highlighted in answer to question 6, consumer consent is a critical aspect to enable interoperability and this needs to be a smooth customer journey. For example, if a consumer moves house or changes supplier, they should not need to re-sign up to all consents. In future, this could enable the consumer to select suppliers they trust enough to then allow the system to take over selection and automation in due course.

Consumer consent issues are not the only barriers to adoption. There is the question of associated costs of data management which all suppliers and DSR providers need to bear. This can also inhibit new entrants as data protection and consumer consent controls do not scale well in small organisations and are resource intensive.

To enable consumer engagement with ESA and ToU tariffs, all these aspects need deeper engagement with industry. We believe RECCo are well positioned to facilitate and implement an approach to consumer consent through existing code governance and budgeting processes.

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.

We support standardisation of data that would help to optimise energy usage when carbon intensity is low and agree this could be hugely beneficial to minimising impact of carbon emissions on the environment. We also agree that visibility of other costs, such as wholesale costs or network charges, would also help to optimise time of use tariffs. Consideration should also be given to how consumers feed in data, for example in a Vehicle to Grid (V2G) scenario, when is it optimum for a consumer to feed back into the grid. Standardisation of data should be seen as a dynamic flow both to and from a consumer.

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.

We agree that there should be regulatory requirements set to promote the adoption of ESA standards. There are merits to both regulatory approaches presented in the consultation. Option 1 would better facilitate competition and innovation, whilst option 2 would provide greatest certainty. Equally, each option has its challenges, less prescription means greater risk of differing standards being developed and conversely greater certainty could reduce the potential to innovate or adapt. There may be a hybrid option that needs to be considered. A set of high-level principles or outcomes that could be supported, where necessitated, by mandated requirements that are set in legislation or industry code. In this way, prescription is set only where it is essential, such as ensuring consumer protections, but allows flexibility to a nascent market to develop and innovate.

Consideration should also be given to the cost of regulation, which would no doubt ultimately be borne by the consumer. Where possible, existing frameworks and options should be utilised to minimise the risk of increased regulatory costs.

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

We understand the benefits that are gained from set device standards but would caution against prescription that would limit innovation. This is particularly important when looking at the global market and potential unintended consequences of prescription that inhibits innovators from other regions entering the GB market. We note that PAS 1878 was developed to resolve gaps in international standards, but any further development of these standards should remain compatible with other global standards and requirements, to better ensure product manufacturers engage in the GB market.

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.

Given the nascent ESA market, it may be best to develop a general standard that can be applied to specific ESA in the short term. This would support the policy timescale ambitions by developing standards that meet immediate need. Further modelling or use cases of potential future needs can be undertaken and standards developed accordingly. Standards can then be developed and adapted to meet market and consumer needs. A one size fits all at the outset may lead to unnecessary revisions to standards as new technologies and approaches emerge. For example, we may see increased provisions for energy as a service, where a range of smaller household items (thermostats, fridges, ovens and other white goods) collectively have a high potential for flexibility but would not be caught by the standards individually.

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.

Please see our response to questions 15 and 16 above. We do not have a preference for the approach taken to the development and maintenance of the standards. In both scenarios, the participants should be made up of both experts and innovators from a range across the utilities sector, including telecoms and banking as well as relevant industry sectors e.g. ESA manufacturers, where data sharing innovations are being seen.

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.

We can see the need for a Government mandate on a randomised delay where time-based conditions exist. However, there are many other conditional based approaches such as price drops or increases; temperature changes on a local level or other regional variations that drive demand that would not best be served by a mandated randomised delay for ESA. Distribution Network Operators have alternative methods of resolving the problem of many devices coming onto or off the network beyond time delay. We would urge a more evidence-based approach, by developing a problem statement and considering that the evidence will enable better outcomes to be achieved. Randomised delay might only manage one scenario of grid stability, i.e., when demand is at peak, but there may be times when the converse is true and different, and a more agile approach is required.

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?

We agree that minimum device-level security standards should be set, however these need to be proportionate to the risk they pose to stability and security. We believe further technical input is required to clearly define risk (impact and likelihood) then the boundary conditions on where device-level cyber security boundaries apply can be appropriately applied.

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

We are not experts in cyber security so cannot comment on whether this is the best minimum standard. We do believe that re-use is paramount for success not re-creation and as detailed in previous answers the technical risk needs to be better evaluated.

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 agree that a common systems approach could mitigate system-wide risks. Use of the Public Key Infrastructure is established, proven and well known. It is used within the energy sector, particularly in the smart metering network run by Smart DCC. It could enable the re-use of major infrastructure and thus bring consumers greater value for money than investing in a new system to undertake anomaly detection. However, anomaly detection within the smart metering system is very specific and would need to be scaled up. This could in itself be a significant change which is costly.

We would wish to understand what analysis has been undertaken to assess the use of PKI against other potential alternatives. Further, whether there has been any analysis of costs of implementing other options. There is currently insufficient evidence in the consultation to suggest that PKI should be adopted as part of the common systems approach to mitigating system wide risks.

One key risk not thoroughly detailed in the consultation is around consumer engagement and adoption. As detailed in our response to question 6, we believe a centralised consumer consent system is required to reduce or remove some barrier to consumer adoption.

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

We note the two options proposed in the consultation and the merits of building on existing governance. However, we believe there may be a further option that could better achieve the outcomes, which is a combination of the two options that are presented. RECCo is a central not-for-profit body. It is flexible and able to adapt its scope without the need to create a new body. RECCo would be in a position to manage the governance, costs and stakeholders without incurring significant new costs or facing any of the delays in establishing a new body. The Smart DCC licence could be extended to be a delivery partner, with costs and governance through the REC.

It is crucial that there is a robust mechanism for management of costs that ensures timely delivery and value for money. Both options in the paper present cost challenges which can be mitigated by the approach we describe above. We would urge policy makers to more fully explore alternatives and more cost-effective approaches. Rather than taking the approach that it must fit into a single body, there are more agile methods that can ensure key bodies are identified to undertake tasks that are better suited to the outcome that are sought.

The consultation states that both options will be assessed further, but we believe that consideration should be given to alternative options. There are other delivery approaches that should be explored, and it is not apparent why the choices have been limited in this way. If policy makers have already considered and discounted options, reference should be made to those for full transparency.

Chapter 5 – Energy Smart Appliances: Delivery Frameworks

23. What are the key considerations for design of governance during the development, transition and delivery phases of implementation?

This consultation covers several areas of development, many of which will have a long evolution needing to start now. Whilst we understand that delivering the interdependencies between these areas will be critical to overall system outcome success, we believe the requirements are better broken down to distinct areas and phases, for considered delivery at the right time.

BEIS is silent on whether a hybrid option working in tandem has been considered and discounted. If the programme breaks down requirements, aims and desired outcome, it might be clearer what appropriate governance model exist or if there is a need for something new. There are natural synergies with to existing governance arrangements in place today the Smart Energy Code and Retail Energy Code. SEC delivers specific, smart, secure technical specifications and REC delivers onward data specifications/transfer mechanisms underpinning wider scenarios, covering multiple parties working towards positive/protected consumer outcomes.

When determining the plan of work to be taken forward in the transition and delivery phases, there will be a need to avoid perverse incentives to work at pace, sticking to initial planned milestones/end date, without reassessment at key points to test what the new developments mean to the overall plan.

Many of the initiatives which could be developed on the back of this (and future consultation) will enable new services, new market roles and benefit multiple parties. When considering the governance to be implemented, we believe it would be appropriate to consider the accompanying development and enduring ongoing funding models. To ensure the right parties are paying for the services they receive to do business. To this end REC already has a broad participation of energy industry stakeholders, and a reflective funding model. It is a not-for-profit organisation and can implement an appropriate funding model specific for the needs of new arrangements, if desired and required. Under today's funding model, development and ongoing costs under the SEC are predominantly borne by energy Suppliers. If SEC is used for all development, transition and delivery, then it would be appropriate to consider what might be an appropriate funding split for the newer developments for a new market with substantially different requirements and potentially new parties.

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 agree with the range of assurance options. We also agree that a risk-based approach will ensure that the greatest risks receive greater scrutiny. Different products and types will raise varying risk levels both at device level and supporting systems. As such each would need to be categorised and managed appropriately. Well know supporting systems, such as 'cloud' based systems may well have assurance requirements in place, but assumptions would need to be tested and appropriate assurance instigated where it is found lacking.

Another key factor for assurance is the management of consumer consent. It is crucial that consumers engagement with ESA is a positive experience and journey that is based on trust and confidence. This requires manufacturers to build the right products that meet consumer need and demand, as well as interoperability. Transitioning from one product manager or energy supplier to another should be a seamless experience for a consumer. This is better achieved by the centralisation of consumer consent. Such mechanisms would remove barriers to entry and engagement and consumers need to ensure that they are robust and offer the correct levels of consumer protection.

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.

RECCo is in support of third-party certification with testing as this builds up support with consumers. However, this should not be mandatory for all scenarios, and it needs to be proportionate to the technical and consumer risk. RECCo would be willing to join the necessary bodies to provide balance, and to support consumer and market interoperability.

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?

RECCo believes that labelling does support the consumer to make informed decisions. However, there is a difference between reliable functions and functions which are labelled. BEIS should be clear on the policy ambitions it is seeking to achieve by labelling. Clear articulation of the outcome will enable better development of the solution. There is a risk with labelling that creates an expectation with consumers that the solution is perfect and many solutions in the market today are of varying reliability. This could be mitigated by adding grading to the label's e.g., bronze, silver, gold.

The challenge with increasing the validation around labelling is that it pushes up the cost for the consumer. This should also be mitigated wherever possible, as increased regulatory and policy costs may also impact consumer uptake of ESA.

RECCo would be willing to participate in stakeholder engagement or relevant forums to help develop the approach to labelling that will best serve the positions for the consumer and market interoperability.

27. What factors should government take account of when considering how the costs of delivering these arrangements should be distributed and recovered?

As the consultation recognises, the scale and type of costs involved are highly uncertain and therefore it is difficult to develop a fully informed approach to cost recovery at this stage. In large part, it will depend on the policy decisions that are made in response to this consultation. Nevertheless, some presumptions could be made as an outline approach that is tested and

developed as the policy approach is crystalized. Costs can be divided into programme management and product creation and addressed in the following way:

RECCo principally believe that central activities, e.g., project management and governance (both project and ongoing) should be centrally covered with a focus on value for money (there must be scalability benefits from centralization vs. many third parties fulfilling responsibilities). For the central costs, these could be obtained through existing licenses and codes. Product creation and development should be wholly born by the manufacturers and other government programmes, e.g., Catapult, Innovate UK. Where the primary aim is to enable market adoption and consumer consent, then the REC is well positioned to govern and recover costs through existing mechanisms. However, if the primary aim is to solve network stability and reliability then other codes, such as the BSC or UNC may be better positioned to govern and recover costs through existing mechanisms.

In most cases the existing code bodies and licenses have ways to recover costs which are faster to implement than something new.

Chapter 6 - Smart Electric Heating.

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.

We appreciate that innovation in heat is a growth area. The demand for alternative ways to heat homes and buildings will continue to grow and adapt. When considering future scenarios, we should also consider cooling of homes and buildings. Both heating and cooling will require energy management and therefore, broader consideration should be given to what technologies may be developed in this space. In addition, there will no doubt be a fundamental requirement for thermostatic controls to be smart and should form part of the initial smart mandate.

We would also ask, what, if any, consideration is given to interactions with the grid by consumers who would be able to not only use energy from the grid, but who could equally export. Smart functionality in the management of energy flowing to the grid may also be an element where innovations take place, with the introduction of energy as a service, we may see offerings of smart functionality that should also be considered in the early stages of policy development.

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?

Supporting evidence is hard for something about the future. What we do know is that humanity advances and becomes increasingly sophisticated so the approaches taken should be general and then applied specifically as new technology enters the market. Nevertheless, we can assume that other white goods appliances will quickly follow on and we are likely to see standard household items operating with smart functionality. Ultimately, these will need consumers to have confidence that the use of such innovations will not impinge on their data or home security. Beyond this, they could further contribute to the management of energy within the home which will ultimately assist with grid management.

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?

Consumers cannot continue to bear the cost of policy implementation through energy bills, with those on the lowest incomes and vulnerable even less able to bear such increasing costs which are regressive when incorporated into standing charges. Early adopters of such innovations are likely to be more affluent, but costs would be smeared so that all consumers pay, including those that will not immediately benefit from the technology or have the means to engage with such innovations.

Funding mechanisms for heating for vulnerable and low-income households need to be more targeted. RECCo are currently considering how the use of the Central Green Deal Database, operated by REC, could be re-purposed to enable better use of an existing asset that could bring green innovation for the benefit of consumers. We have several use cases that we believe would enable sectors of society that would otherwise be less able to engage to make use of funding mechanisms to implement new energy technologies to their homes. Key amongst these is the engagement of residential landlords, who must also ensure that their properties reach an EPC rating of C by 2025. In this scenario, landlords would be able to make use of the green deal approach to retrofit the property and increase energy efficiency. We would welcome a discussion with BEIS on this initiative.

More broadly, alternatives, such as general taxation or other more targeted funding must be explored if we are to ensure all parts of society can benefit from technologies that will ultimately mean better energy management of the grid.

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 have no additional comments on the definition that is proposed.

32. Do you agree with the proposal to implement the smart heating mandate from 2025? Please explain your answer.

RECCo are generally supportive of the proposed timeline. We are also pleased to note that it is being considered to go live at the same time as other major energy programmes such as MHHS so that consumer benefit can be maximised. However, we are concerned that the smart meter rollout and MHHS programmes remain on challenging timeframes that may result in delays or re-planning. Without smart meters, many consumers will not be in a position to engage with the proposed technologies and therefore, the uptake of smart meters is fundamental to the success of any ESA programme. We fear that without mandate, consumers may be digitally excluded for longer and ultimately, this will increase pressures on the grid. Broader consideration should be given to the suite of actions required and their timelines to ensure that they are sufficiently aligned to achieve these policy objectives.

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?

There are a number of measures that would ensure heat pumps can provide flexibility and certainly a minimal level of thermal storage would assist. There are also several measures around knowledge and funding that would also need to be addressed, as well as taking a more holistic approach to the property which includes retrofitting homes in order to maximise insulation efficiencies.

Knowledge and availability of advice and guidance that builds consumer confidence is crucial. The current desert of such information will inevitably result in poor uptake. Today there is not a simple way to enable a consumer (or financier) to work out the optimal setup for pay back. Combined with limited funding options, the rate of uptake will no doubt be negatively impacted. Both financial support and guidance on heat pumps must be part of the suite of measures that inform, encourage and enable consumers to participate and benefit from the move to heat pumps.

More fundamentally, without retrofitting the GB leaky housing stock the implementation of heat pumps will not yield the energy efficiencies that are sought. Consumers would have high usage requirements that continue to potentially negatively impact grid and ultimately the governments net zero targets. We refer to our points raised in response to question 30 above – RECCo are keen to re-use and re-purpose aspects of the Central Green Deal Database. Our proposed use case could assist many residential landlords in achieving higher EPC ratings for their properties. We would welcome a discussion with BEIS in this regard.

34. Should Government consider introducing a 'smart mandate' for domestic-scale battery systems or any other appliances? If so, what appliances and why?

RECCo is supportive of a general smart mandate that any device type can be derived from. Creating specifics or limiting smart mandate reduces the general base of possible appliances that could flood the market. In turn, this will cause slow delivery in what is a fast-paced product market with changing consumer behaviour. We would certainly advocate the inclusion of domestic-scale battery systems in the smart mandate but would also urge the consideration of other items within the home that may be provided as part of an 'energy as a service' package.

Chapter 7 – Regulation of Organisations

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?

Given the potential for either consumer or grid stability harm, from the inappropriate sale or management of DSR services, it is appropriate to consider oversight of parties via a regulatory framework. Ensuring minimum standards are defined, adhered to and compliance is monitored. Consistent practice enabling minimum quality, interoperability, and with-it increased consumers' confidence, trust, and uptake.

We can see benefits to building on the current consumer protection laws and voluntary codes of conduct with a more formal regulatory scheme and agree these best sit within the existing energy sector framework, given remit and potential impacts. We welcome further consultation from BEIS, and Ofgem, to consider the detail and understand why the initial scope covers propositions to two customer groups. It is unclear why licensing should be adopted in the first instance, as opposed to exploring the detail required by extending the current voluntary arrangements piloting requirements would help build the proportionate and flexible licensing desired.

We are pleased to see BEIS will keep open its decision not to create a regulatory solution for larger industrial and commercial (I&C) and public Electric Vehicle charging point operators, as these may prove a larger impact on grid stability than all domestic/small non-domestic load combined. It would be good to see some industry analysis of the potential scale and impacts expected in the next 5-10 years, in order to inform BEIS decision.

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?

With differing grounds for licence requirement, the current approach in energy is sensible insofar as it seeks to prohibit activities that may otherwise cause harm, either directly or through an adverse economic consequence, i.e., effect on competition, unless done in accordance with condition of a licence or their associated energy codes. The focus of licences should be on those activities that involve products and services offered to end consumers, and/or have a high degree of market power such as operation of a monopoly network, which negates the ability of the market to determine whether terms and conditions are fair.

As we move towards a more complicated market it may be appropriate to tailor licences to reflect both activity and who it impacts. This is closer in approach to that adopted by financial services, e.g., riskier products being offered only to sophisticated investors, not retailed to the wider public. Many domestic energy consumers are engaged and well informed and may therefore suitably be offered riskier products and/or waive some of the existing licence protections that may otherwise preclude an innovative offering. Similarly, some non-domestic consumers cannot appropriately manage risk and should therefore be offered many of the protections traditionally associated with domestic consumers, i.e., micro-businesses.

Given the volume and diversity of microbusiness, the licence regime should not preclude them from taking up flexible products, we suggest consideration of appropriate safeguards to ensure they make informed choices, with clear, transparent awareness of the impacts of 'opting in' (i.e., load not being there when their business may ordinarily expect it).

We suggest BEIS and Ofgem consider consumer categorisation related to these services, and how these will map to integrate with existing energy market defined customer categorisation. Targeting the problem to minimise side effects. Current categorisations are over-simplistic and do not reflect consumer plurality.

37. What design principles do you agree or disagree with? What principles would you like to be added?

We suggest consideration of the following principles:

- Understanding and addressing risk
- Consumers' interest – due regard to consumer interests and treat them fairly.
- Communications with clients – communicate in a clear, fair, and accurate way.

38. How should proportionality be delivered in a future licensing framework?

We suggest the following approach:

- Develop in line with principles of good regulatory practice (not just proportionality, ensure efficacy, targeted etc.);
- Start with principles-based approach – avoid prescription;
- Keep licence to a minimum, capture any necessary prescription at a code level so that it can be more flexible;
- Incorporate by reference any relevant and appropriate 'rules' that parties may already be subject to elsewhere (even if outside of 'energy') to avoid double jeopardy, etc.

39. What additional protections for consumers could be required from a future licensing framework beyond those contained in existing consumer protection law?

Ensuring consumers have trust and confidence in ESA will be crucial. Current market conditions are likely to have significantly impacted consumer confidence and may be detrimental to the development and uptake of new technologies. This consultation has identified a range of areas to target, which we agree will go some way to building consumer protections. This could be achieved with the implementation of a Code of Practice, to ensure market participants adhere to a set of principles or rules set to deliver the right outcomes for consumers. As exists today, these arrangements could be governed at energy industry level, holding parties to account for performance outcomes and their behaviour.

In addition to those protections mentioned in the consultation, some protections focusing on: ensuring propositions are accurate, include evidence-based examples, and delivered in clear, unambiguous language, for informed consumer decision making. A consent regime appropriate to the risk faced, to ensure no consumer detriment; an 'opt-out' approach in certain areas. An explicit 'opt-in' for specific consumer groups – e.g., those at risk on the PSR, where they may not suitably be able to provide flexibility support for vulnerable consumers – debt management etc. Several of these protections exist in today's energy market, in provisions in licence and the Retail Energy Code (REC).

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?

We agree that BEIS and Ofgem should consider a specific set of data privacy requirements to protect consumers choices around data sharing, access and use for DSR services. To ensure consumers are clear when, how and with whom their data can be shared to provide DSR. Building trust and confidence around consumer control and choice.

BEIS and Ofgem should consider how these would work in conjunction and concert with the other energy consumer consent regimes, to ensure effective integration of these consumer commands into existing energy processes, and systems. Providing confidence that the data is managed in a consistent and controlled way, whilst mitigating risks that devices might be controlled without due care or permission, and that permission has been given with an understanding of what that permission might mean.

We welcome the chance to engage with BEIS and Ofgem on this management in future consultation.

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.

It is unclear whether it is appropriate to manage the cyber security risk from DSR services via Licence. For the future ability to flexibly adjust requirements with an evolving market, it may be more appropriate to manage the risk via both a high level DSR Service Provider Licence requirement to comply and a set of requirements delivered in the appropriate set of arrangements. In energy this is often managed by a set of detailed requirements set out in industry code.

Once BEIS and Ofgem have determined the regulatory requirements on DSR Service Providers and understood what the NCSC recommend, as a sensible approach to the required End-to-End security model and design, it should be clearer what specific regulatory framework best supports the desired outcomes. We believe that any new regime needs to deliver something which works in conjunction with, or where appropriate which extends, existing cyber security standards.

Where part of this risk is seen in the devices themselves, we recommend consideration is made to mitigate via the device specifications and, as we have said in other answers, we believe that the cyber security solution employed should be informed by and proportionate to the risks faced, and utilise existing, relevant standards.

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?

We agree and suggest this indicates further work on DSR service processes. We suggest consideration of processes around; management of vulnerabilities, consumer communications, consumer consent, service registration/switching, service debt management.

We welcome further consultation with BEIS and Ofgem around the conditions to ensure DSR service providers support interoperability. The REC already manages many rules developed to deliver consumer protections and processes to ensure interoperability, so would be happy to join or facilitate discussion considering what might be required and why.

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?

It is unclear whether it is more appropriate to manage the increasing Grid Stability risk posed by DSR Services (aggregate or direct), via licence or licence backed code requirements. For future the ability to flexibly adjust requirements with the evidence from the evolving market, it may be more appropriate to manage the risk via a detailed set of code requirements to which the DSR Service Provider Licensee needs to adhere to and comply with.

Although BEIS is silent on what it is proposing to base these measures on, we assume they will be developing these from detailed evidence-based modelling, and analysis. In order to quantify and qualify the nature, size and scale of the anticipated risks anticipated by electricity Distribution Network Operators, to be able to deliver the physical and non-physical mitigants for the right consumer and the network outcomes.

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?

RECCo agrees with the risks describes and these are the principal risks which need to be managed to avoid failure. However, RECCo also believes that the consumer engagement and journey (including consumer consent) are critical to success. These risks are not yet sufficiently considered and require more coverage in future consultations.