OLEV Electric Vehicle Smart Charging Consultation

Produced by the Renewable Energy Association in conjunction with its EV Group
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Lead REA Contact: Daniel Brown, Policy Manager– dbrown@r-e-a.net

Link to consultation in full: https://www.gov.uk/government/consultations/electric-vehicle-smart-charging

About the REA: The REA is the UK's largest trade association for renewable energy and clean technologies operating since 2001. The Association is not-for-profit, and spans over 500 members operating across heat, power, and transport. The REA EV Group is comprised of around 75 companies involved in EV charging finance, installation, operations, manufacture, and service provision, including in both public and private settings.

Chapter 1 - Introduction and objectives

Q01: Do you agree with the Government's proposed aim (to maximise the use of smart charging technologies)?

The REA is strongly supportive of this aim. Overall, smart charging in private locations will play a key role not only in supporting the deployment of more charging infrastructure (compared to if it was not smart) but also unleash market innovation and competition in the management of such chargers and other associated low-carbon technologies.

Examples of the potential opportunities smart charging integrated with other low-carbon technologies open up can be found in Cornwall Energy's *Driven to Disruption* paper in 2018 (link: https://www.cornwall-insight.com/newsroom/all-news/driven-to-disruption-electric-vehicles-accelerating-need-for-energy-market-change).

Whilst there is some concern from manufacturers and installers around increased cost of these technologies, REA members are strongly in favour of the principal of a smart, flexible energy system.

Q02: Do you agree with the proposed Grid Protection objective?

The REA is strongly supportive of the Grid Protection objective. Whilst it is rightly noted that the majority of the UK population has off-street parking, and that home charging presently represents the majority of recharging, we are concerned that without smart charging grid-connection restraints and grid-upgrade costs from DNOs will significantly curtail the amount of charging that can take place at home.

The REA notes that solar PV and battery storage can play a key role in supporting smart charging and reducing grid constraints endured by networks and property owners.

The REA wishes to emphasise that grid protection should be managed in a market-led manner. The deployment of flexibility and integration of price-reflective tariffs to reduce grid and generation stress is an objective REA members share. Distribution network operators should be involved in this discussion and service provision but it should be up to suppliers, aggregators, and other private operators to deliver the service, with DNOs intervening as a measure of absolute last resort. Any

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DNO intervention in smart charging needs a clear governance structure involving multiple actors, and clearly defined and agreed-upon terms and use cases.

Regulation should allow for products to emerge that allow consumers to prioritise their energy use. For example, by using an app or cloud service some will be able to set priorities of heating, oven, car charging or a separate energy management system. There is significant work taking place in this area that regulation should accommodate and facilitate, rather than curtail.

Q03: Do you agree with the proposed Consumer Protection objective?

The REA is supportive of the principal of interoperability of private charging infrastructure. We are happy for Government to champion this, in line with the *Smart Appliances* consultation of 2018 which proposed a similar system for private behind-the-meter battery storage installations. As energy suppliers, automotive manufacturers, and oil and gas majors all move in the home & commercial 'clean technology' markets, spanning solar, battery storage, renewable heat and electric vehicle charging, it is key that no one technology is seen in isolation and regulation is designed with this group (and the interoperability of this group of technologies as a bundle) in mind.

Regarding consumer protection, the REA believes that the interoperability of private charging infrastructure is paramount not just to a competitive, consumer-oriented market but to future innovation. The REA would rather see aggregators, suppliers, charge point operators, and other stakeholders compete on price, hardware quality, and service rather than 'lock in' consumers.

It is important to distinguish between the modes of interoperability being suggested in this consultation. One is interoperability between electricity suppliers (e.g. ensuring one supplier doesn't lock in a customer into a tariff because of installed hardware in the case that the hardware is installed by a supplier). The other is interoperability between charge point operators, (e.g. the entity that sends signals to a charge point to manage rates of charge).

Whilst it is possible to ensure interoperability between energy suppliers, it is not possible to deliver seamless interoperability between charge point operators at this time. Whilst the REA and members are in favour of the principal, the industry needs time to develop new protocols and systems to facilitate this. Some of the groundwork is there, however, the existing hardware and software cannot be adapted in the short term (the next 1-2 years). With time, and potentially innovation funding, hardware and software solutions can be found and some are suggested in this response.

Slightly different to energy supplier and charge point operator interoperability, but still relevant, is the ability for energy suppliers, auto OEMS, and other market actors to offer customers a multi-year contract that covers both an energy tariff and a hardware installation. We are supportive of such contracts, subject to opt-out clauses and other consumer protection measures, as they can offer a viable route to market for the provision of low-carbon technologies to the mass market (beyond just EV chargers and potentially covering solar, renewable heat, and energy storage).

Q04: Do you agree with the proposed Consumer Uptake objective?

The REA is supportive of the consumer uptake objective – consumers being engaged with smart charging and the wider energy sector will unlock a range of other products and services in the future. Simplicity, clarity, and trust all underpin this development.

The REA notes, however, some concern that over-engineering products or over-regulating products will not lead to the Government's desired outcome as it will limit innovation and increase price. The

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REA wants smart charge points to be installed and used, but too much regulation may lead to the units becoming too expensive and consumers resorting to the unsafe practice of charging their vehicle with a three-pin plug and extension lead. Barriers shouldn't be set so high at an early stage that the sector is denied the opportunity to get drivers engaged with a range of products and services.

Q05: Do you agree with the proposed Innovation objective?

The REA is strongly supportive of this objective. As outlined above, a smart charging system could pave the way for the built environment to play a greater role in a flexible, decentralized, renewable energy future. Many of the REA's members are keen to see such a system.

The REA understands the UK to be a test-bed for many of these systems and international energy companies and investors are taking pieces of UK companies so as to bring innovation trialed and proven here to their home countries – a clear outcome, in our view, of the Government's Industrial Strategy. One example is the smart battery storage and software company Moixa, who received investment in 2019 from Honda and Itochu and is rolling out their technology not just in the UK but in Japan.

Source: https://www.greentechmedia.com/articles/read/honda-leads-11m-round-for-u-k-distributed-energy-software-startup-moixa#gs.2n43v1

More pilot schemes are needed to test a range of mechanisms for ensuring a functional, secure, and innovative system integration/communication setup emerges in the UK.

Q06: Please provide reasons why you agree or disagree with the above aim and objectives, including any objectives that you think should be added or removed.

The REA is supportive of the objectives as outlined and policy should be aligned with that which regulates other smart energy devices in private locations, such as energy storage, smart renewable heat, and solar PV (and other forms of onsite power generation) deployment.

Q07: Do you agree with the proposal to have a phased approach?

The REA broadly agrees with the phased approach as proposed, and in particular the early legislative requirement to be installing 'smart chargers' in private settings.

For the development and standardization of developing communication processes to facilitate interoperability, a more phased approach is required and immediate intervention based on existing use cases would hamper software, hardware, and business model development in the sector.

Q08: Please provide reasons why you agree or disagree, including supporting evidence or analysis, and suggesting any alternative approaches

Chapter 2 - Phase One: Using the AEV Act powers to develop device-level requirements

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Q09: Do you agree that the smart regulations should apply to charge points, and to charging cables which contain a smart charging-enabling device?

The REA is supportive of regulating charge points and relevant charging cables to be 'smart,' meaning being able to send and receive signals that can manage load. We believe this to be an important step towards a more flexible, decentralised, and lower-cost electricity system.

Q10: Please give reasons, including any supporting evidence or analysis, for your answer.
The REA would like to call attention to the independent 2018 report *Flexibility Solutions for High Renewable Energy Systems* by Bloomberg New Energy Finance, commissioned by REA member Eaton.

The document looks at the GB market and assesses solutions for the 'flexibility gap' given increased deployment of low-cost renewable power in in coming years. It concludes:

There are two types of benefits provided by these flexible technologies [inc. smart EV charging]:

- **Integrating large volumes of renewable generation**. This is done either by shifting excess demand to periods of high renewable generation, or by storing the excess renewable generation for periods of high demand.
- **Displacing (fossil) backup capacity** that would otherwise be needed for extended periods with little wind or solar generation.
- Both of these benefits produce good results in terms of reducing cost and emissions.

The report outlines that, compared to their base modeling case, high deployment of smart EV charging can increase renewable power capacity and reduce overall power sector emissions.

Table 2: Summary of scenario outcomes in 2040

Scenario	System cost	Emissions	Fossil capacity as share of peak demand	Renewable share of generation	Zero-carbon share of generation
NEO (base case)	39.8 GBPm/TWh	11.6 MtCO2	34%	80%	94%
Relative change vs NEO					
Low-flex	13%	36%	45%	-1%	-2%
High uptake of EVs	4%	-88%*	3%	1%	0%
High uptake of EVs and flexible charging	4%	-96%*	0%	1%	0%
High uptake of storage	0%	1%	-1%	0%	0%
High uptake of flexible demand	-5%	2%	-10%	0%	0%
Interconnection to the Nordics	-2%	-24%	-10%	2%	2%

*Source: BloombergNEF. Note: Colour scales differ between columns, but in all cases green is desirable. *Emissions for EV scenarios include a negative contribution from emissions displaced in the oil sector.*

Further details of the modeling and analysis can be found in the full report, here: https://data.bloomberglp.com/professional/sites/24/2018/11/UK-Flexibility-Solutions-for-High-Renewable-Energy-Systems-2018-BNEF-Eaton-Statkraft.pdf

Q11: Do you agree that the regulations should require that all new chargepoints except for public chargepoints (as defined in the AEV Act) are smart?

The REA is supportive of excluding 'public' charging infrastructure, such as DC rapid chargers (50kW+), from the regulations.

This is because a) consumers will likely have less tolerance for demand reduction and b) developers and landlords will likely have separate conversations and arrangements regarding smart charging, energy supplies and grid connections which will tackle relevant constraints.

That is not to say there is not a significant role for smart charging in public locations, but instead that these regulations should not extend to that sector which should be allowed to develop in its own way.

Q12: Please give reasons for your answer, including explanations of any other types of chargepoints that you think should or shouldn't be smart and evidence for any exemptions needed.

One area of ambiguity around the definition of 'private charging' is in private retail settings where chargers are located and customers are expected to pay in a manner akin to other public charging systems. Additionally, on-street charging infrastructure may also fall under this category. The charge point industry would welcome clarity around the definitions of public and private charging, including specific use-cases.

There is support amongst the membership for extending the requirements to public AC on-street charging infrastructure and to retail environments which fall somewhere between the definitions of public and private charging.

The REA wishes to flag evidence from the Netherlands relating to smart charging (AC and DC) here and here.

Q13: Do you agree that public chargepoints that are smart should comply with the relevant elements of the regulations?

The REA does not see this as relevant. The core issue being addressed in this consultation is cyber security, consumer protection, and consumer uptake particularly in home and workplace settings where grid constraints will be pronounced and there are ethical issues around who pays for upgrading such infrastructure.

For public charging, costs will be more directly borne between property owners and developers. Some public chargers will likely be smart, but developers and manufacturers should be able to tailor such systems to the needs of landlords, property owners, and the wider public as they see fit in order to offer the best service and should not be curtailed by these regulations.

Q14: Please give reasons for your answer, including identifying which of the proposed regulations should or shouldn't apply to public chargepoints.

Regulations should only apply to private charge points. Whilst acknowledging the benefit of smart charging for public locations, public charging should be excluded as it is a distinctly different market with a different structure and set of issues and it is likely to emerge anyway.

Q15: Do you agree that a smart chargepoint should be defined as being

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communications enabled and able to respond automatically to remote signals by adjusting the electricity consumption flowing through the chargepoint?

The REA is supportive of the principal but think the definition, rather than 'communications enabled' should be 'able to send and receive communications, including relating to electricity consumption'.

Where possible, definitions and standards should be aligned with those being developed internationally (e.g. ISO).

Q16: If not, how should it be defined instead?

N/A

Q17: Do you agree with our approach of having both outcome-based security requirements alongside technical security characteristics from the BSI standard or a proven equivalent?

REA is supportive of outcome-based security requirements. The sector should be given outcomes to deliver on and then be able to establish its own systems and processes to do so (e.g. National Cyber Security Centre or other should stipulate minimum certificate-based or end-to-end encryption-based requirements and let the industry deliver on them). Such outcomes should be developed with an understanding of emerging international standards (e.g. ISO standards).

Q18: Please give reasons for your answer.

N/A

Q19: Do you agree with the proposed list of outcome-based security requirements?

Broadly speaking, REA is supportive of the Government's proposed outcomes.

Q20: Please give reasons for your answer, including any other requirements you think are necessary.

Such requirements are adequate. However, delivering on some may be better suited to the vehicle sector rather than the charge point sector.

Q21: Do you agree with the proposal that chargepoints should undergo mandated security testing and assurance before they are installed or sold?

The REA is supportive of this proposal. For background the REA is concerned about the efficacy of the existing OLEV regulations on approved installers and charge points under the EV homecharge and workplace charge point schemes. The REA would be supportive of a more robust compliance mechanism to avoid a 'race to the bottom' in standards, which would only serve to penalise the more responsible and technologically-enabled products on the market.

There are REA members either with commercial experience of managing testing and assurance schemes. In particular there are also those with existing testing and assurance facilities for their own use (to ensure consumer confidence in their brand) which potentially could be rolled out in the UK. Whoever manages such schemes, however, needs to be an independent or potentially a state entity and not directly related to the charge point installation, manufacturing, or operations markets.

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The REA is supportive of testing against IEC 61851. We note, however, that this does not include testing against OCPP conformity. The Open Charge Alliance should be consulted about the development of an OCPP testing and conformity scheme.

For background and example, relevant testing bodies in the Netherlands for testing include DEKRA and TUV.

Q22: Please give reasons for your answer.

N/A

Q23: [For chargepoint companies only] Which of these outcome-based security requirements do you already comply with? Please explain how you meet them.

N/A

Q24: Do you think any other data privacy requirements are needed either from these regulations or from other methods?

No further requirements are needed

Q25: Do you agree with the proposed requirement that the chargepoint is capable of retaining smart functionality if the chargepoint operator is changed without the need for a visit to the premises?

The REA is supportive of this proposal. However, it is not feasible to deliver on this outcome in the short term. A case study is outlined below as to why this is not feasible.

Q26: If not then please give reasons for your answer.

Case study: delivering private charge point interoperability through OCPP

The Open Charge Point Protocol (OCPP) is a commonly adopted communications protocol for private charge points, is an open, secure and industry-led standard, and is presently being formalized via the eMI3 organisation. The REA is supportive of it's adoption in the UK market, and many members have already incorporated it's use. Widespread adoption of OCPP would deliver much of the outcomes the Government is seeking in relation to interoperability (and OCPP 2.0 includes significantly improved cyber-security functionality), and in a short period of time.

However, OCPP does not have the full functionality to deliver interoperability between charge point operators at this stage. Whilst it is an open and standardized communications protocol operating between the charge point and the charepoint operator, it is not yet particularly simple to switch from one operator to another.

The incorporation of an 'end point swap' command into OCPP is technically feasible to develop and would go some way to delivering this, by facilitating one CPO to swap for another. However, even with an 'end point swap' command, at present there is no way to support domestic interoperability without physically changing a SIM card. This is complicated by many manufacturers offering sealed charge points which opening invalids their warrantee. One option is the integration of an eSIM, akin to what is being looked in the telecoms industry. This is a digital SIM card which can be incorporated

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into firmware. Delivering eSIMS is technically possible but not demonstrated at this stage for the EV sector.

Charge point operators who communicate with their hardware via Ethernet or wifi are in a stronger position to offer seamless interoperability, but this isn't suitable in all cases and there is not yet widespread industry uptake of this.

Government could also facilitate OCPP's adoption by supporting a certification programme for OCPP (which would guarantee manufacturers are complying with a minimum standard of OCPP adoption), which could also be rolled out internationally.

***Case study end

In due course, legislation, monitoring, and enforcement would all be needed to enable the widespread switching of charge point operators, to ensure widespread compliance.

As such, the building blocks for delivering a private charge point network which prevents customers from being locked into particular energy suppliers is possible today. Preventing lock in from particular *charge point operators* represents a more technically complex and nuanced development. For many operators, it may require upgrades to their back-end charge point software management systems and changes to the hardware they deploy, both of which can take time and the protocols and systems which would need to integrated are not fully yet in existence.

The REA believes the Government should set both CPO and supplier interoperability as a target for the charge point sector to deliver on and fund, via Innovate UK, the development of standards and use-case testing.
Specifically:

- CPOs should be able to switch the end-point and the associated settings in connected chargers remotely, without the risk of losing connection due to any manual errors
- CPOs should be compelled to have to switch operators within a certain period of time once requested by a customer (e.g. 1-2 weeks)

Q27: Do you agree that compliance with interoperability requirements of a BSI standard, combined with a certification and assurance regime, could help ensure interoperability?

The REA views this as a potential solution, but notes that there is already work underway and protocols in existence that can help deliver interoperability. Robust certification and assurance will be crucial to ensuring this is widely deployed in the market. Such a regime must also be adaptable, to ensure it can be updated as the technology evolves and that loopholes are not found by less responsible market actors.

The REA notes that OCPP is working towards IEC 63110, which could be adapted.

Q28: If not then please give reasons for your answer.

N/A

Q29: Do you agree that the regulations should include a requirement for a randomised delay function?

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Whilst the REA is supportive of the Government's objectives for this sector, it does not believe that delivering on all them requires regulation on the charge point and/ or charge point operator. These are often low-margin businesses and they already must navigate a suite of consumer-facing legislation and protection.

The REA believes that grid management via randomized delay is not an appropriate regulation for the charge point sector, and would better be delivered by the vehicle itself.

Q30: Do you agree that a randomised delay function for smart EV chargepoints should have a maximum delay of 10 minutes?

As above. The REA notes that a mandated 10 minute randomised delay would undermine any incorporation of the vehicle into future grid services, such as fast frequency response.

Q31: Please give reasons for your answer, including evidence for any impacts on benefits to consumers and any suggested exemptions.

N/A

Q32: What other methods could achieve the same outcome of ensuring electricity system stability in response to numerous chargepoints turning on or off at the same time?

Other low-carbon technology deployment could assist with this risk, and the move towards 'bundling' of products by energy suppliers, automotive manufacturers, and other market actors will likely facilitate this. Government policy where possible should facilitate this linkage, for example by reducing VAT rates for associated clean technologies (e.g. solar and storage) which are currently set to rise.

Link to VAT rate rise: https://www.r-e-a.net/news/tax-rate-hike-for-domestic-solar-storage-and-biomass-boiler-markets-contested-by-industry

Q33: Do you agree that the regulations should include a requirement for a minimum charging current (or power)?

The REA is not supportive of this.

Q34: If so, please provide suggestions for an appropriate minimum amount of current or power.

The REA is supportive of a minimum charging current of 0A. This would ensure vehicles are able to participate in relevant flexibility markets to the greatest extent. The concern relating to chargers being physically locked into vehicles in the case of a reduction in power supply is an issue that should be, and is being, addressed by the vehicle manufacturers themselves.

Q35: How else do you think this issue could be addressed?

Vehicle manufacturers should be required to address any issues stemming from chargers becoming physically locked into a vehicle in the case of power supply change.

Q36: Do you agree that the regulations should include a requirement for a default offpeak charging mode?

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The REA is supportive of this approach, but note that for consumers to continue to engage a robust energy supplier offering of time-of-use tariffs and other incentives need to be in place. Overall, the approach to encouraging customers to engage with smart charging should be incentive-based, not mandated.

Q37: Alternatively, would it be better for the regulations to require reduced peak charging by default?

N/A

Q38: Please give reasons for your answers, including your consideration relating to a combination of the two options.

The REA is supportive of any policy that both allows for price-reflective electricity tariffs to be incorporated and for smart charging features to be maximized. Customers should be able to set their charger to non-smart, either permanently or in a time-locked way, but the default setting should be smart.

We would also like to note that, whilst we support the need to encourage customers to use off peak charging, implementing a default off peak period in the Smart Charging standard may have adverse effects on Grid Stability. Even if implemented with the randomised offset, the fact that any Smart Charger which had not had its schedule overridden would become active at the same time causing a new peak on the grid to occur within 10 minutes of that time.

The actual timing of off peak periods is variable depending on the region and supplier and so may end up that the default off peak period does not align with the customers off peak charging – meaning that they may not get the financial benefit of this. As we move to Time of Use tariffs in the retail market, the alignment between the default off peak period and the customers tariff is likely to be more pronounced.

Q39: What time should be the specified off-peak period?

N/A

Q40: Do you agree that chargepoints under these Regulations should be required to be safe, with due regard to the existing safety framework?

The REA agrees with these regulations and that end-to-end safety and quality installations should be a priority for the sector.

Q41: Please give reasons for your answer.

N/A

Q42: Do you think any other safety requirements should be included in these Regulations?

The REA believes that beyond safety, consumer protection schemes needs to be in place. The REA (through it's subsidiary Renewable Energy Assurance Limited) is developing the Electric Vehicle Consumer Code, which targets installers of charge points in domestic settings. Signatories to the

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code abide by a means of engaging with consumers that is fair and honest. The scheme will also offer alternative dispute settlement for impacted parties. Such a policy has had significant benefits in the past, particularly in the solar PV and energy storage sectors.

Website for REAL: http://www.renewableenergyassurance.org.uk

Q43: Please give reasons for your answer.

N/A

Q44: Are you aware of any important safety factors that are not being sufficiently considered in relation to EV charging?

N/A

Q45: Do you agree that any smart charging regulations should provide adequate space for V2G solutions and other advanced smart charging, such as flexibility and balancing services, to develop?

The REA is fully supportive of the Government giving space for V2G to develop. It is too early to regulate this industry and the current regulations give adequate space for the technology's emergence.

Q46: Do you believe that smart charging regulations should include specific requirements for V2G solutions and other advanced smart charging, such as flexibility and balancing services, to develop?

REA early view is that it is too early to be regulating for V2G. No V2G requirements should be introduced at this stage, but space should be given for it to develop.

Q47: Please provide reasoning for your answer, including reference to any consultation proposals that could potentially conflict with V2G or other smart charging services and suggest any specific requirements.

N/A

Q48: Do you agree that these regulations should include a requirement to monitor and record electricity consumed and/or exported, and that this information should be available for the consumer to view?

Response: The REA agrees with this proposal

Q49: Please give reasons for your answer and specify what format should be required for the consumer to view the information.

Price-reflective tariffs, as part of Ofgem's wider Energy Market Reform plans, are forthcoming and underpin the smart, flexible, and decentralized energy system that the industry is seeking to create. Transparency around payments should sit at the heart of this and consumers should be able to access some sort of balance sheet either via App or invoice.

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REA is cautious about Government regulating the exact format however that this should take and give flexibility to market. Most of the software on the market that facilitates the management of private charge points already monitors and records charging behavior.

Q50: Do you agree that the Office for Product Safety and Standards should be the enforcement authority for the regulations?

The REA is supportive of this body in principal.

Q51: Please give reasons for your answer.

N/A

Q52: Do you agree that the penalty for non-compliance should be a fine for each non-compliant chargepoint sold or installed?

The REA is supportive of this system of enforcement. Repeated offences from a particular installer / manufacturer should be treated more severely, with an increased fine system in place for repeat offenders.

Note that this should only be relevant if the issue is demonstrably with the charge point rather than another aspect of the network (e.g. the mobile phone network, the installation, the car, the user, etc.).

For offenses on a scale that could have a significant reputational impact on the industry, or could impact local grid stability, installers should be legally bound to remove and replace the non-compliant units at their own cost.

Q53: Please give reasons for your answer.

If the fine system is set too low, it is possible that relevant installers / suppliers / other parties could choose to take the fine or take the risk of being fined and install a lower-quality product (or offer a lower-quality service) repeatedly. Without a sliding scale repeated offenders may be given increased latitude. One-off offenders should be subject to lower fines as the installation sector is diffused and decentralized, and relevant parties genuinely may be fully aware of their obligations despite being oriented towards being compliant.

Government should give consideration to tracking compliance via company directors, rather than companies themselves, to avoid installers dissolving and re-forming in order to avoid compliance-related penalties.

Q54: How long should sellers or installers have to comply with the requirements once the final version has been published?

This should be dependent on the specific regulation. For example, as smart charging technology is widespread in the market already, six months should be given to ensure all chargers installed are smart.

For other aspects, particularly relating to the interoperability of private chargers, at least two years should be given as significant and widespread software and hardware reforms will be need to be created, tested, and implemented.

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Q55: Please give reasons for your answer.

Technology for smart charging is widely available, technology to mandate interoperability is possible but still under development.

Q56: [For chargepoint companies only] What would the impact be on your business

N/A

Q57: [For chargepoint companies only] Subject to passing the testing schemes for security and interoperability, are any of your chargepoints likely to comply with these requirements either currently or with minor modifications?

N/A

Q58: Are there any suggested requirements that you think could disadvantage people with particular protected characteristics, as defined by the Equality Act 2010, or could otherwise cause equality issues? Please explain any issues and any potential solutions.

N/A

Q59: Do you think we should have specific energy efficiency requirements for chargepoints?

No minimum efficiency requirements should be introduced. Manufacturers should, however, publish what the expected range of standby usage is for a given charger. (As an example some users like chargers with coloured screens which consequently have higher standby usage, thus lower efficiency).

Q60: Please give reasons for your answer, including suggestions for any specific requirements.

Charge points are already largely efficient products. Introducing requirements could restrict the types of hardware products that emerge in the future and services that could be developed.

Q61: How will different parties be affected by the proposed measures outlined in the first two chapters of this consultation? For your answer, please consider consumers, charge point manufacturers, DNOs, energy suppliers, charge point operators, government (local/national) and any other relevant party. Please provide evidence and analysis to support your answer where appropriate.

N/A

Chapter 3 - Phase Two: Smart charging long-term approach - Call for evidence - Decision on a long term approach

Q62: Do you agree that, in order to implement a long-term approach to smart charging by 2025, Government should make a decision between 2020 and 2022?

Noting the example stages in the chart set out in paragraph 3.6.

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The REA is open to this timeline, depending on the regulation proposed.

Q63: What is your preferred year for a decision?

Decisions should be taken in coordination with implementation of relevant recommendations of the EV Energy Taskforce (yet to report) and the Energy Data Taskforce (which has reported). Decisions should also reflect the timelines and output from the 2018 *Consultation on Proposals regarding Smart Appliances*. Further evidence to inform decisions from relevant Innovate UK V2G and smart charging trails may not also be available until 2021/22, which should be accounted for.

Decisions should also reflect the timelines for product development to enable interoperability of private charging, as discussed in the REA's response to the Smart Charging consultation.

Q64: Please provide reasons for your answer, including evidence (where relevant) of the impact that an earlier or later decision could have.

N/A

Q65: Do you agree that the factors listed in paragraph 3.5 are the key criteria to consider in determining a decision point?

Overall, impacts should be measurable and clear when taking decision and underpinned by a range of pilot schemes.

Q66: Please provide reasons for your answer, including a consideration of additional key criteria we should consider in determining the timing of the decision point.

N/A

Using smart meters for EV smart charging

Q67: Do you agree that smart metering system offers a viable solution for the smart charging of EVs, with appropriate system changes in terms of access and functionality?

The REA is supportive of smart meters being adapted to facilitate private EV charging communications for those who choose to use it, but is not supportive of it being mandated for the sector. The priority should be for the UK to be aligned to international standards and not be isolated, which is what this regulation would do.

Q68: Please provide the reasons why you agree or disagree.

Routing communications through a smart meter would pose a number of challenges. Firstly, it could significantly restrict demand-management services derived from smart charging (as many communications through the DCC are on/off). Having individual products certified for use through a smart meter and DCC is also reportedly up to one million pounds and takes a year, which would make several manufacturers unviable. It would hugely limit innovation in a sector which is only just emerging. It would also 'island' the UK from the rest of North America and Europe, as other countries are not proposing this, and the UK smart meter system is distinctly different from that which was developed on the Continent.

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All this would result in a poorer, more limited, more expensive experience for consumers and would undermine the Government's stated intended outcomes of consumer uptake and utilization of smart charging services, outlined in the Smart Charging consultation.

That is not to say, however, that some market participants may wish to elect to use the smart meter and DCC route. The REA is supportive of smart meters being adapted to manage multiple loads and incorporate smart charging and some developers may choose to use this system. However, it should in no way be mandated for the industry.

The REA would rather see the National Cyber Security Center and other relevant bodies outline the security standards, be it related to encryption levels (depending if the communication is being sent/received via SIM, eSIM, or Ethernet) or other protocols. The industry can then develop its own solutions in response move forward.

Q69: In relation to smart charging, how would the smart meter system need to be improved in order to meet reasonable customer expectations of the use of their vehicle? What would be required to do this?

N/A

Q70: What would you think would be the implication of the UK not following developing international standards in this area and requiring the GB based smart meter rollout for the control and operation of smart EV chargers?

This would result in fewer, more expensive products on the market. It also has implications for the wider clean technology and 'flexibility' industries (e.g. a solar PV panel, battery storage, smart charger, linked via a Time of Use tariff), as a cornerstone product in domestic flexibility provision would be isolated in its development from other, larger markets. This could also hamper roll out of technologies such as onsite solar PV and battery storage.

Alternative options

Q71: Do you think that an alternative approach, as outlined above, could deliver the Government's objectives on smart charging by 2025, with similar outcomes to the smart meter system on cyber security and interoperability?

Unknown at this stage.

Q72: Are there other alternative approaches that could deliver the Government's objectives on smart charging by 2025, with similar outcomes to the smart meter system on cyber security and interoperability?

Rather than legislate, the REA is supportive of the Government setting outcomes it wants to see, encouraging demand for smart charging products, and then letting the market decide on solutions.

Q73: Please provide reasons for your answer, including what technologies and approaches to regulation could be used and information and evidence on how any alternative options would deliver similar outcomes to the smart meter system on cyber security and interoperability. Please say how much time you think developing the approach would take and what costs may be incurred.

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N/A

Q74: What are your views on smart charging via the vehicle rather than chargepoint?

We believe that overall, it us unfair to place the primary onus of regulation on the smart charging unit rather than the vehicle. Many electric vehicles are equally capable of managing much of the expectations and services being required of chargers and, where possible, vehicles should be allowed to do so.

How do you think government should approach regulating this area?

Smart meters as the current lead option for a long-term solution

Q75: Do you agree that requiring the use of smart meters for smart charging should be the lead option for Phase Two?

No. Smart meters can be part of the communication system to enable smart charging but in no way should be the central controller.

Q76: Please provide the reasons why you agree or disagree.

See 67 and 68.

Chapter 4 - AEV Act Powers - Transmission of data relating to chargepoints - Call for evidence

Q77: What do you consider the benefits of introducing regulations under this section could be?

Greater network forward planning and collaboration between market actors.

Q78: What do you consider the disadvantages of introducing regulations under this section could be?

Q79: Do you agree with the views on the minimum data to be made available? If not, what should or should not be included?

We are supportive of this.

Q80: What criteria do you think should be used to determine when these regulations should be introduced?

N/A

Q81: Please give details of any approaches to implementing these regulations that would be either helpful or unhelpful. For example, preferences for when, how and in what form the data is transferred.

N/A

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Q82: What data privacy considerations do you think would be relevant and how do you think they could be resolved? For example, consumer preference.

N/A

Q83: Who should have access to this data? What processes should be in place to access the data to ensure safeguarding?

We are supportive of a wide range of market participants to be given contractual access to this data. Electricity network companies are an obvious potential participant, but the criteria should less be about what the company's market role is an whether they have a suitable software and hardware system, based on the Governance of the data, to access it. For example, ElectraLink, via their management of the Data Transfer Network, have access to a large volume of GDPR-sensitive MPAN-level historic consumption, generation, and switching data. Access to their system is not limited to certain market participants but instead a Governance Committee and robust governance system manages applications to view and engage with the information, and those engaging with their products must meet a high level of internal system security and are bound by contractual obligations.

Ensuring that the widest number of market participants, including suppliers, aggregators, manufacturers, and researchers have access to this information is essential in driving innovation in this sector in the years to come.

Additionally, it should be very clear that the user can ask for stored charging information (EVSE and DNO) pertaining to them can be deleted (Right to be Forgotten).

Q84: Please give details of any alternative arrangements that could be used to achieve similar benefits to those outlined above.

N/A

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