

Electric Vehicle smart charging

Citizens Advice's response to a [DfT and OLEV consultation](#)



Smart charging: aims and objectives

5. Do you agree with:

	Agree	Neither agree nor disagree	Disagree	Don't know
our aim to maximise the use of smart charging technologies?	x			
grid protection objective?	x			
consumer protection objective?	x			
consumer uptake objective?	x			
proposed innovation objective?	x			

Why?

Maximising the use of smart charging technologies and consumer uptake objective

Citizens Advice agrees with this objective as smart charging technologies could offer mutual benefits to individuals as well as to the energy system, which can avoid building unnecessary generation and network assets. It is important that in achieving this objective, government and industry still consider consumers who are unable or unwilling to use smart charging technologies and ensure their outcomes are still fair.

Grid protection objective

Citizens Advice agrees with this objective as it will support a robust and resilient energy system for consumers. Reliability of energy supply regularly features as the top priority of energy consumers in research conducted by energy networks and should therefore be a top priority for any new rules around Electric Vehicles (EVs).

Consumer protection objective

Citizens Advice supports a solution which allows competitive pricing and protects consumers as they share personal data. In homes and businesses, a smart charger should not limit a consumer's ability to switch energy suppliers or smart charging tariffs. Our research¹ into smart charging with households and businesses suggested consumers want other types of protections, such as financial and product guarantees to ensure smart charging is right for them.

Consumer uptake objective

Greater uptake and engagement with smart charging will benefit consumers and the energy system. But the factors that influence uptake change as we move from targeting early adopters to the mass market. We agree that smart charging solutions must be "affordable, good value, simple to engage with, and convenient". Our research² showed that we can expect greater uptake if smart charging offers are:

- accessible to people who are not digitally savvy
- available for those who live in areas with weak mobile or internet signals
- tailored to fit in with different customer needs, in particular
 - people with mobility issues, parents of young children, and those living in remote areas with restricted access to public transport or public charging.
 - small businesses who may not have the time and resources to actively engage in smart charging compared to large companies
- allow customers to retain control and set preferences
 - enable users to set and change preferences and requirements.
 - give users sufficient information before they sign up, and keep them informed about how the scheme they agreed to is working for them.

1

<https://www.citizensadvice.org.uk/about-us/policy/policy-research-topics/energy-policy-research-and-consultation-responses/energy-policy-research/smart-ev-charging-what-do-drivers-and-businesses-find-acceptable/>

2

<https://www.citizensadvice.org.uk/about-us/policy/policy-research-topics/energy-policy-research-and-consultation-responses/energy-policy-research/smart-ev-charging-what-do-drivers-and-businesses-find-acceptable/>

Proposed innovation objective

Citizens Advice agrees with this objective to ensure consumers can benefit from new innovations in the market.

We appreciate there may be tensions between each policy objective and believe a risk-based approach should be taken when balancing different priorities. At the same time, we also see interactions between policy objectives that should be noted. For example, consumer protections enable better outcomes, affecting both uptake and investor confidence in the market.

Phased approach

6. Do you agree with having a phased approach?

Agree Neither agree nor disagree Disagree Don't know

x

Why?

In principle, Citizens Advice would support a phased approach when prescribing a specific technology for smart charging. We agree that this is a nascent market, with a high degree of ongoing research, trials and early innovation. It would be premature to decide which route is optimal, based on the current evidence available.

We would advocate for the transition between phases to be determined by a set of agreed indicators, in the first instance. For example, when the market has settled on a preferred technology or there is a critical uptake of smart chargers. The government should be transparent in what these indicators may be to encourage relevant stakeholders to continually submit evidence, supporting an informed transition.

Given the urgent need to meet other objectives, such as decarbonisation, it is reasonable for the government to set deadlines by which a decision will be made, if the transition is not instigated organically.

In relation to setting requirements for chargepoint operators (CPOs) beyond the device itself, the consultation document points out the lack of requirements beyond the device around cyber security and interoperability may leave consumers and the grid unprotected. Compromising such outcomes should be taken with extreme caution, especially as consumer confidence once eroded can be difficult to regain.

The government should clearly understand what the magnitude of the risk is (both to individuals and the grid) if they choose to proceed with a phased approach for setting further requirements on CPOs and seek to mitigate it, where possible. This could be through encouraging companies to implement best practice, supporting consumers to make informed choices and incentivising the market, for example through the Electric Vehicle Homecharge Scheme (EVHS).

Definition of a chargepoint

9. Do you agree that the smart regulations should apply to charging cables containing a smart charging-enabling device?

Agree Neither agree nor disagree Disagree Don't know

x

Definition of a chargepoint: your reasons

10. Why?

On principle, we agree that smart regulations should be consistent regardless of where the smart charging element is located. However we are unable to comment on any practical implications this may have.

Types of chargepoint

12. Do you agree with the proposal that all new chargepoints, except for public chargepoints, are smart?

Agree Neither agree nor disagree Disagree Don't know

x

Why?

While the impact of EVs on the electricity system is uncertain, it is important that the charging infrastructure we build at private properties withstands all possible scenarios and that we take 'least regret' decisions. Ensuring all private chargepoints are smart should manage the potential risk to the energy system.

We would encourage the government to apply the similar proposals to some public chargepoints, where the same rate of charging, timing and reasoning would apply. For example, chargepoints at public parking spaces, hotels or at airports.

Types of chargepoint: public chargepoint

16. Should public chargepoints that are smart comply also with the regulations?

Agree Neither agree nor disagree Disagree Don't know

x

17. Do you think there are elements of the proposed regulations which are not appropriate for smart public chargepoints which are missing from the proposed regulations?

Yes No Don't know

x

Why?

At this stage, we are unable to comment on whether the same regulations would be appropriate for public smart chargers. However, we would advocate for similar proposals to be put in place. On principle, public smart chargers should meet the same objectives set out for private smart chargers, in relation to cybersecurity, grid and consumer protection. It is vital that EV drivers who do not have access to off street charging are afforded the same level of protection however they charge.

We would also highlight that currently public charging, in electricity settlement terms, counts as an unmetered demand and the imbalance it creates on the system is smeared across all electricity bill payers. This is not desirable in the long run and we would advocate for public chargepoints to collect high quality data about charging and demand side response events for settlement purposes. Government should consult Elexon in trying to identify which data is required.

Definition of a smart chargepoint

18. Do you agree with our proposed smart chargepoint definition?

Agree Neither agree nor disagree Disagree Don't know

x

Cyber security and data privacy

20. Do you agree with having outcome-based security requirements alongside technical security characteristics from the BSI standard (or a proven equivalent)?

Agree Neither agree nor disagree Disagree Don't know

x

Cyber security and data privacy: your reasons

21. Why?

We agree security requirements need to be placed on smart charging devices. This is vital to protect individuals and the energy system.

While we believe outcomes-based security requirements (alongside a testing assurance scheme and requirements from the BSI standard) could deliver the outcomes government is looking for, it is important that the long-term option delivers the best value for consumers, as the costs will ultimately be borne by consumers. Government should use this consultation and further engagements as an opportunity to assess where and how industry could work collectively to reduce this financial burden.

Cyber security and data privacy: outcome based security requirements

22. Do you agree with the outcome-based security requirements of:

protecting the integrity of chargepoints through physical protections?

Agree Neither agree nor disagree Disagree Don't know

x

protecting operational interfaces of chargepoints and prevent the use of non-operational interfaces?

Agree Neither agree nor disagree Disagree Don't know

x

protecting communications and messages sent from and received by chargepoints?

Agree Neither agree nor disagree Disagree Don't know

x

protecting firmware on chargepoints and enabling secure updates of firmware?

Agree Neither agree nor disagree Disagree Don't know

x

protecting electric charging, metering, payment charging and other functions of chargepoints where applicable?

Agree Neither agree nor disagree Disagree Don't know

x

protecting data held by chargepoints?

Agree Neither agree nor disagree Disagree Don't know

x

ensure that messages sent to chargepoints are sent from a certified trusted source?

Agree Neither agree nor disagree Disagree Don't know

x

23. Do you agree that chargepoints should undergo mandated security testing and assurance?

Agree Neither agree nor disagree Disagree Don't know

x

Why?

Security testing and assurance is required to ensure the outcomes set out above are being met. If the security outcomes are not met, it could risk the objectives laid out in this consultation, including grid and consumer protection. We would welcome any suggestions for how testing and assurance can be industry-led and done in a way that has minimal impact on costs.

24. Do you think any other data privacy requirements are needed from these regulations or through other methods?

Data collected from smart chargers could detail how a car has been charged, when and for how long, indicating personal details such as when a person may be home. Unlike most other products owned by consumers, EV chargers may be used by different people as a house is sold or the tenancy changes. If data is held on a device, there must be an adequate decommissioning process to ensure data privacy in these situations.

Interoperability

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

Agree Neither agree nor disagree Disagree Don't know

x

Interoperability: your reasons

27. Why?

Despite having protections in place, we know losing smart functionality when using products can be confusing for consumers. Last year we received just under 200 contacts³ from consumers confused or frustrated after losing the smart functionality with their early generation smart meters, following a change in supplier. This is likely to be the tip of the iceberg.

A chargepoint should retain smart functionality, regardless of which energy supplier, CPO or tariff the consumer chooses. If this fails to happen, there could be unintended consequences for the market, reducing the likelihood for fair outcomes in the long term. It is crucial the government ensures the value of smart charging is competitive and passed onto consumers and that there are clear incentives for high standards of service, using the most appropriate mechanism to do so. It would be unacceptable for consumers to be locked into products or services that did not provide such outcomes.

In addition, we would encourage government to consider interoperability decisions wider than just the smart charging market to other innovations in the energy space, such as household aggregation offers and other types of demand side response.

We appreciate the CPO market is relatively nascent and likely to be volatile over the coming years. In the event of a CPO failure, it must still be possible for other companies to operate the smart functionality of a charger. This may not be possible if CPOs use proprietary protocols. There are other advantages to using open protocols, including the fact they can be cheaper and faster to develop when industry work in collaboration⁴.

Interoperability

28. Do you agree that compliance with a BSI standard combined with a certification and assurance regime could help ensure interoperability?

Agree Neither agree nor disagree Disagree Don't know

³

<https://www.citizensadvice.org.uk/about-us/policy/policy-research-topics/energy-policy-research-and-consultation-responses/smart-meters/>

⁴ http://www.imaginecommunications.com/sites/default/files/open_vs_proprietary.pdf

x

Interoperability compliance: your reasons

29. Why?

We agree in principle, although the BSI standard is still under development and therefore we are unable to comment with confidence on this question.

Randomised delay function

30. Do you agree with the proposal that chargepoints should have a randomised delay function?

Agree Neither agree nor disagree Disagree Don't know

x

Why?

A randomised delay function could promote grid stability, especially if this can be overridden when appropriate. However, it is important that any functionality is tested before wider use. In particular, government and industry should monitor the impact to consumers while there is a delay and the system more generally.

Randomised delay function: implementation

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

Agree (Go to question 34)

Disagree

Don't know?

Why?

We have not seen any evidence to show that 10 minutes is an appropriate timeframe. This will probably depend on the number of smart chargers and the likelihood of them responding to the same timed signal. It should also be considered that, depending on what tariff a consumer has, they may be exposed to relatively high prices in those 10 minutes when their charger doesn't respond to a signal. As stated above, the impact on consumers should be monitored.

Default off-peak charging mode

39. Do you think that chargepoints should:

include a default off-peak charging mode?

include a default reduced on-peak charging mode?

not include either a default off-peak charging mode or on-peak charging mode? (Go to question 41)

another option of your choice?

Why?

Our smart charging research⁵ showed, across a range of smart charging offers, consumers valued being in control of their charging through the ability to set preferences, timers or specifying by which time they need their car charged.

Instead of specifying a default setting, a better option would be for consumers to define their own default settings upon installation of the chargepoint, during the set-up process. Consumers could be incentivised to pick smart charging options, for example through options such as 'cheapest' or 'greenest', although much of this may be developed by companies as they trial what works best. This default setting should be easy to amend as people's situations change or when people move homes.

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<https://www.citizensadvice.org.uk/about-us/policy/policy-research-topics/energy-policy-research-and-consultation-responses/energy-policy-research/smart-ev-charging-what-do-drivers-and-businesses-find-acceptable/>

The default settings suggested in the consultation document come with the innate risk that consumers who move homes will not be aware that the default setting is in operation and that their vehicle is actually not charging. Communications and prompts would have to be very clear.

Further, there is a question around how “off peak” is defined and whether that is a dynamic or static, general or locational definition. For example, we usually assume an evening demand peak which we want EV charging to avoid, but in times of greater solar generation we may have a generation peak during the day. Presumably it would be beneficial for plugged in EVs to charge during that time too.

Network constraints are also highly locational. An evening peak on one street may bring the local fuse close to maximum capacity, whereas the next street along may have extra capacity and can accommodate EVs charging at evening peak. As one driver suggested during our smart charging research, ideally the smart charger acts in coordination with grid needs. The default to move all charging to off-peak periods may actually not be necessary everywhere.

However, we realise that providing highly locational grid signals to every smart charger is currently not possible as the necessary monitoring and communication facilities do not exist on the electricity grid.

Default off-peak charging modes: timings

40. What time should be the specified off-peak or on-peak period?

See our above response. This depends on how dynamic or static this period would be defined.

Safety

41. Do you agree that regulated chargepoints should be required to be safe by having due regard to the safety framework?

Agree Neither agree nor disagree Disagree Don't know

x

Safety: your reasons

42. Why?

We agree that all chargepoints should have due regard to the safety framework. This aligns with consumer expectations that the products they buy will be safe. We also encourage the government to think about consumer safety holistically, considering safety from a vehicle, cable and public chargepoint perspective too. Standards in these areas must be robust and align with standards for smart chargepoints.

Vehicle to grid (V2G) and other advanced smart charging

45. Do you agree the regulations should provide adequate space for V2G and other advanced smart charging solutions to develop?

Agree Neither agree nor disagree Disagree Don't know

x

Why?

If space for V2G and other advanced smart charging solutions is not provided, it would be out of step with the objective to allow innovation. It would also close off the route to possible grid stability benefits that can be gained from V2X.

46. Do you believe that there should be specific requirements in the smart charging regulations for:

V2G solutions?

Agree Neither agree nor disagree Disagree Don't know

x

other advanced smart charging?

Agree Neither agree nor disagree Disagree Don't know

x

Why?

We agree there may need to be specific requirements put in place for V2G enabled smart chargers, however we do not believe all smart chargers should be V2G enabled unless these chargers reach cost parity with smart chargers.

In addition, the government should consider whether there needs to be additional requirements in place for other types of innovation, for example Vehicle to Home (V2H) or Peer to Peer trading.

Monitoring and recording EV electricity consumption

47. Do you agree the regulations should include a requirement to:

monitor and record the electricity consumed and exported?

Agree Neither agree nor disagree Disagree Don't know

x

monitor and record the time the charging event lasts?

Agree Neither agree nor disagree Disagree Don't know

x

Why?

Given EVs consume a large amount of electricity compared to other appliances, chargepoints should monitor and record the electricity consumed and exported as well as the time the charging event lasts. This information is important to understand what the overall impact of charging has been. A record of energy consumed by a charger is also important to enable future supply models such as having a separate tariff for your EV.

However, it is possible that to accurately bill a consumer or to account for demand side response from an EV in the electricity settlement system, further information from the charger may be needed. For example, at what time of the day the charger exported energy? Government should consult with Elexon and demand side response services to understand what information they may need from a charger.

48. Do you agree the chargepoint must provide a method for the consumer to view information related to monitoring and recording?

Agree Neither agree nor disagree Disagree Don't know

x

Why?

Yes, consumers should have access to data in relation to electricity consumed and exported as well as when this occurred and for how long. However other types of data need to be available too, including the associated tariff costs. If there are multiple cars within the home, it would be more beneficial if the data corresponds to the individual car. Above all, the data must be presented in a consumer friendly way if it is to be engaging.

Monitoring and recording EV electricity consumption: format

49. What format do you think should be required for the consumer to view the information?

However information is delivered to consumers, it must be done in a tailored way at touchpoints relevant to the consumer. Companies should offer assistance to help interpret what this data might mean for each user and how they behave.

Forthcoming research from Citizens Advice indicates visual formats can be effective when summarising the multiple benefits of smart products, however determining what format is most helpful in this context could be highly dependent on the content and context itself. As such, it's important that companies test and trial different formats to see what works for consumers best.

Government and industry should be mindful of how consumers might engage with their energy use in the future. For example, they may wish to do this through a central source like the recently launched SmartThings Energy Control platform⁶.

Under GDPR, consumers should be able to port personal data between providers. However, it is unclear whether EV electrical consumption and export data (as well as time of use) is captured under the definition of personal data. Regardless of definitions, consumers should be able to port this data, to help them compare offers or to enable a better service from future products or services. The data should be offered in a consistent and industry agreed format.

Enforcement authority and penalties

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

⁶

<https://help.bulb.co.uk/hc/en-us/articles/360034651651-Setting-up-SmartThings-Energy-Control-STECS>

Yes

No

Don't know?

Why?

We agree with the government's position that an enforcement authority should be appointed. Whichever organisation is appointed, the authority must have the right expertise and be adequately resourced to enforce the standards, particularly if the standards are principles based. This means having clarity over what compliance looks like, being able to monitor the market as well as use the right mechanisms if enforcement action is needed. The body should also work closely with other market regulators and consumer groups as electric vehicle issues can span multiple boundaries.

51. Do you agree that the penalty for non-compliance should be a fine for each chargepoint sold and installed?

Agree

Neither agree nor disagree

Disagree

Don't know

Why?

Yes, a financial penalty would help incentivise the market to be compliant with the standards. We would expect consumers to be adequately reimbursed if their products need to be replaced or updated and for an obligation to be placed on companies to rectify the situation quickly.

Where products are deemed to be non-compliant this should be communicated to consumers. This could be through a press release or published list naming and shaming such companies as well as targeted communications, where appropriate.

Time for compliance

52. How long in your opinion should sellers and installers have to comply with the requirements once the final version has been published?

- Up to 6 months
- Up to 12 months
- Up to 18 months
- Up to 24 months
- More than 24 months

Other considerations:

We agree with the proposal of giving sellers and installers 12 months to comply, after the final version of requirements have been published. This timeframe reflects the timeframe given in similar situations, such as when energy suppliers had to adhere to the technical standards for first generation smart meters.

If additional time is required beyond this, companies should apply for a derogation from the enforcement authority, setting out what they need the additional time for and why.

55. Will any of the suggested proposals in your opinion: disadvantage people with protected characteristics, as defined by the Equality Act 2010?

Yes No Don't know?

cause other equality issues?

Yes No Don't know?

Explain any issues and potential solutions you may have.

The proposals could potentially disadvantage people with protected characteristics if these characteristics are not taken into account from the outset. For example, information may need to be given in a range of formats to accommodate individual needs, which may be a particular issue for those who are deaf or suffer from a visual impairment.

We would anticipate other equality issues if cybersecurity and safety standards did not apply to public chargers as those without access to off street parking would be at a greater risk. Furthermore the smart charger connectivity needs to be sufficient in all areas including areas of greater rurality, regardless of what communication protocol is used.

Other considerations

59. How do you think our proposals will affect consumers?

The proposals are likely to have implications for both EV drivers and electricity bill payers; for the purpose of this response, we will treat them separately.

Electric Vehicle drivers

We have detailed possible impacts for EV drivers due to specific proposals throughout this response. This section will capture broader impacts of smart charging, as we have identified through our research⁷.

Our research suggests there are mixed perceptions of smart charging offers and what that might mean for individuals. While no one offer seemed appropriate for everyone, at least one of the six offers we described seemed acceptable to almost all drivers. It's important whatever standards are set, there is flexibility in designing offers (including defaults) that work for drivers as opposed to restrict their options.

The research suggests when designing smart charging options, drivers need ease of use and set up as well as confidence when using them in rural areas with poor

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[https://www.citizensadvice.org.uk/Global/CitizensAdvice/Energy/Smart%20EV%20charging%20-%20What%20do%20drivers%20and%20businesses%20find%20acceptable%20-%20Final%20Report%20for%20Citizens%20Advice%20\(1\).pdf](https://www.citizensadvice.org.uk/Global/CitizensAdvice/Energy/Smart%20EV%20charging%20-%20What%20do%20drivers%20and%20businesses%20find%20acceptable%20-%20Final%20Report%20for%20Citizens%20Advice%20(1).pdf)

mobile or internet signals. In addition, drivers wanted reassurances that they could override set preferences in emergencies, which was particularly an issue for those with mobility difficulties and young children.

Overall, consumers suggest they need to easily:

- understand the concept behind the option or offer (e.g. simple electricity pricing structures)
- set them up
- interact with the smart charging option in a variety of ways (e.g. via a smartphone app or website, as well as via a technology in-built system for those with poor Internet or mobile signal)
- use the smart charging option regardless of the make and model of their EV
- use the smart charging option alongside other members of their household (e.g. so that multiple household members can schedule charging)
- contact the service or scheme provider in the event of an issue or query

Lastly, drivers use their EVs in different contexts as well as for different durations and purposes. The government and industry should reflect on how this might affect the data needed - for example, to claim expenses at work or to divide payments within a shared house.

Electricity bill payers

For the most part, the cost of upgrading the electricity infrastructure is socialised across energy bills. The smart charging proposals in this consultation would help avoid costly network and generation assets being built, reducing the financial impact on bills. If delivered in a way that complements consumer behaviour, electricity bill payers benefit from the enablement of smart charging.

Call for evidence: smart charging long-term approach

61. Do you agree that, to implement a long-term approach to smart charging by 2025, we need to make a decision between 2020 and 2022?

- Yes
- No (Go to question 63)
- Don't know? (Go to question 64)

Why?

To implement a long-term approach, which involves the smart meter system, it is likely a decision will need to be made by 2022-23, if it is to be implemented by 2025. This is due to the time it would take to develop and amend technical specifications or associated governance via the Smart Energy Code (SEC).

However, depending on the scope and cost, we would advocate for some of the work to be done before a final decision has been made. This would ease pressures on making a decision too early and much of the work is likely to be informative in making a decision, anyway.

Call for evidence: preferred timeline agreement

62. What is your preferred timeframe for a decision?

n/a 2020

n/a 2021

n/a 2022

It is our preference that the decision is made when there is sufficient evidence against pre-agreed indicators, established by industry, government and consumer advocates as opposed to an arbitrary year.

We agree there may need to be a hard deadline by which a solution must be implemented. However, the government should make the case why this deadline is 2025 referencing evidence and other policy objectives (such as decarbonisation).

Call for evidence: preferred timeline factors

65. Do you agree that these factors are the correct criteria to consider in determining a decision point?

Agree Neither agree nor disagree Disagree Don't know

x

Why?

Yes, whatever solution is chosen must satisfy all the objectives as listed at the beginning of the consultation document. It is therefore sensible that the factors determining a decision point relate to these objectives.

From our point of view, there are particular risks involved with not having a solution in place, which relate to the number of smart chargers installed. These include:

- stranded assets/wider smart home implications (should consumers invest in a smart chargepoint that is not the enduring solution and any implications of this when a decision is made)
- cybersecurity and grid protection risks (if there is a proliferation of chargepoints at risk and no additional requirements are placed onto CPOs)

There are obvious risks to innovation if government acts too quickly. The government should work closely with industry to determine what innovations are being developed and how to factor this into future proposals.

Call for evidence: using smart meters for EV charging

66. Do you believe that the smart metering system, with appropriate modifications and improvements, could offer a viable solution for the smart charging of EVs?

- x** Yes
- No
- Don't know?

Why?

Yes, we believe the smart metering system could be used as part of a viable solution for smart charging EVs. The system offers a number of immediate benefits including interoperability, security and existing capability.

The system does have flaws, which would need to be addressed for the solution to be effective. In particular, the current process of using smart meters can be arduous and expensive - this is especially the case if you are not an existing energy supplier. Government and the DCC must ensure that the time and cost to engage is not prohibitive to companies, while ensuring that the existing benefits the DCC offers (for example, security) are not compromised.

The Wide Area Network (WAN) does not extend to all properties in Great Britain. At a minimum, 0.75% of homes will not be able to access smart meters and therefore would not be able to charge smartly using this solution. These locations are more likely to be rural and depend on private transport and/or chargepoints. If it is to be the enduring solution, government will need to consider what alternative mechanisms may be put in place for these consumers.

A substantial number of consumers (both domestic and microbusiness) have had either SMETS1 meters or advanced meters installed. In the case of microbusiness consumers, this may have come at an expense to the individual both in terms of the meter and loss of business activity during the installation. A smart meter solution would require the use of SMETS2 meter. If a replacement is required, there may be practical and financial implications that the government will need to consider for some individuals.

Finally, using the smart meter system within the enduring solution may have limited application internationally. It is possible this may limit the investment companies choose to make in products, increase prices for consumers and limit choice.

67. In your opinion how do you think would the smart meter system needs to be improved in order to meet customer expectations of smart charging and what would be required to do this?

It is likely industry will be best placed to assess how the smart meter system can be improved in accordance with what they know about their customers and the offers they believe suitable.

68. In your opinion what would be the implications of the UK not considering relevant international standards by requiring the GB smart meter system for smart EV charging?

As far as we are aware, the smart meter system is the only system which meets the established objectives. However, if a bespoke solution is created for British consumers only, this may result in fewer options to choose from and potentially higher prices as businesses cater to these specific needs.

It is important that where possible, government aligns the standards they create internationally. Government should also give industry the opportunity to meet the objectives by alternative means.

Call for evidence: alternative options

72. What are your views on smart charging via the vehicle rather than the chargepoint and how do you think government should approach regulating this area?

Smart charging via the vehicle should adhere to the same objectives as laid out for smart chargers in this consultation. We would argue smart charging in the vehicle should be considered within the wider BSI Energy Smart Appliances work, especially if device classifications are completed by functionality as opposed to product type.

Call for evidence: smart meters the current lead option for a long-term solution

73. Do you agree that the use of the smart meter system for smart charging should be the preferred option for Phase Two?

Agree Neither agree nor disagree Disagree Don't know

x

Why?

Yes, this is the only option we are aware of that will meet all of the stated objectives in this consultation. However, there are limitations to this approach that will need to be mitigated should the government choose this as the enduring solution. Over the coming years, government should seek further evidence of how this option can be improved and what other options are available that may satisfy the objectives and align with international standards.

Call for evidence: using the powers in section 14 of the AEV act for transmission of data relating to chargepoints

74. What do you think could be the:

- benefits of introducing regulations under section 14 of the AEV act?

We foresee some benefits in introducing regulation around the transmission of data relating to charge points. We understand the current process to alert distribution network operators (DNOs) of chargepoint installations is not working as smoothly as it should. This data would help networks plan better and anticipate where demand may be.

However, we would argue that the detail is vitally important in this conversation. It would need to be established which data points can be shared with network operators, and for what purpose. Data should only be shared where there is clear and demonstrable need and where it does not affect individual privacy, without consent.

- disadvantages of introducing regulations under section 14 of the AEV act?

We do not see any immediate disadvantages of sharing this data but firm rules, checks and balances need to be placed around this.

75. Do you agree with our views of the minimum data to be made available?

- Yes
- No
- Don't know?

What do you think should be added or removed?

We agree that most of the minimum data points listed in the consultation would be useful for energy network companies to have access to. For example, data related to charger location would be useful and would be similar to asset registers that currently exist for solar panels.

However, we have significant concerns around the sharing of live consumption data; government should seek advice about and whether it falls under the remit of GDPR. These privacy concerns are likely to pertain to private domestic chargers rather than public chargers. Many years of consumer research around data privacy tells us that it is not acceptable for consumers to be identified as individuals based on their energy consumption data, or that conclusions can be drawn about their location or habits. Please see our response to question 78 for our consumer research evidence.

Therefore a nuanced debate is needed around what additional benefits energy networks would deliver for energy consumers if they had access to live consumption data, what granularity of data would be needed to deliver those benefits (e.g. live, half-hourly, daily consumption; data for each charger or aggregated for each street), what the privacy risks are around those levels of granularity, and how the use of charger consumption data is communicated to consumers.

Data minimisation is a general principle of privacy by design, which should also apply to energy networks. No more data should be shared than is necessary for a clear user need and this need should be evidenced.

78. What, in your opinion, data privacy considerations will be affected and how do you think they could be resolved?

Sharing live charger consumption data from domestic chargers with energy network companies could compromise EV owners' privacy and anonymity. The sharing of device-level energy consumption data for network planning or monitoring purposes is uncharted territory in privacy terms and therefore needs careful consideration.

Our concerns are founded on almost a decade of consumer research into data privacy and energy consumption. Below we have summarised our most recent studies into this. They show that views on data sharing vary a lot. Overall though, consumers appreciate transparency and the opportunity to opt out of data sharing.

Forthcoming research into consumer attitudes to data sharing based on online and face to face interviews with 3,000 energy consumers

- 49% of participants feel comfortable sharing data with their energy network company, some are indifferent but still 27% feel uncomfortable.
- 68% worried that data is used by companies in a way that they don't approve of or is not in their best interest. 64% worried that smart data tells companies too much about their household.
- Suppliers using their smart meter data to know when they are home (to e.g. adjust the heating) is comfortable for around 38% of participants but also many, 44% are uncomfortable with this (out of which 22% were "very uncomfortable").
- More 36 - 40% are comfortable with anything from daily to near real-time data sharing of smart meter data. But that means roughly two thirds are on the fence or uncomfortable.
- For 89% of participants feel that having the option to opt out of providing access to their data was fairly or very important.

Smart charging study (2019)⁸ with drivers and businesses.

The results mentioned here only reflect comments from (EV and non-EV) drivers during face to face workshops. We did not prompt for comments around data or privacy but still participants said that:

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<https://www.citizensadvice.org.uk/about-us/policy/policy-research-topics/energy-policy-research-and-consultation-responses/energy-policy-research/smart-ev-charging-what-do-drivers-and-businesses-find-acceptable/>

- when using smart technology to help them charge their car, drivers are concerned about potential technical faults and data privacy or security violations;
- if they contracted with a third party to help them manage their charging, they are concerned that they would collect data about EV drivers and monitor their location or behaviours.

Consumer attitudes to smart homes technology (2018)⁹ based on deliberative events with 51 participants.

- Consumers are generally happy to share “lifestyle” data but not data that is linked to their physical safety and security¹⁰. Data that felt “too sensitive” to share included things like physical location, habits and routines.
- Having clear visibility of what data smart products/services want to collect from the moment they sign up and start using them, and having the choice to select and also go back and change their preferences if needed was important.

Any decision on the extent to which network companies can access live charger consumption data should be guided by the Data Access and Privacy Framework¹¹ (DAPF) that DECC developed in 2012 for the smart meter rollout. Smart meter data of course, even at the most granular, half-hourly level, only provides energy consumption at the household level. Consumption data about a particular device, in this case a charger, could potentially reveal further personal details about habits or routines. We understand BEIS has recently reviewed the DAPF and we encourage greater communication between government departments to ensure that the approach taken is joined up.

The DAPF determined that DNOs “could access energy consumption data, including half-hourly energy consumption data, for regulated purposes without consent if they have had plans approved to address potential privacy concerns.”

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<https://www.citizensadvice.org.uk/about-us/policy/policy-research-topics/energy-policy-research-and-consultation-responses/energy-policy-research/current-consumer-attitudes-to-smart-home-technology/>

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<https://www.citizensadvice.org.uk/about-us/policy/policy-research-topics/energy-policy-research-and-consultation-responses/energy-policy-research/current-consumer-attitudes-to-smart-home-technology/>

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https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/43046/7225-gov-resp-sm-data-access-privacy.pdf

These plans are then interrogated by BEIS, Ofgem and other stakeholders including Citizens Advice. The only DNO that had their plans signed off so far has not received access to individual half-hourly smart meter data but anonymises the data, and aggregates several smart meters together to prevent the possibility of individual households being identifiable. Similar approaches may be necessary for charger consumption data.

In their plans, network companies have to meet the following criteria, which we believe are also relevant if they wanted to access domestic EV charger live consumption data:

- a) Explain clearly what energy consumption **data** will be accessed, in what format, over what period of time, from which consumers, and for which specific **purposes**. Those purposes must be relevant to the regulatory requirement to develop and maintain an efficient, co-ordinated and economical systems for the distribution of electricity and gas;
- b) Identify and quantify the **benefits** that could be delivered for different groups through access to this data (e.g. network benefits, consumer benefits, future development of smart grids etc.);
- c) Demonstrate that practices, procedures and systems can be implemented to aggregate or otherwise treat the data to ensure as far as is reasonably practicable that it can **no longer be associated with an individual premises**;
- d) Explain clearly how, where, when and by whom **collation, maintenance, usage and deletion** of the data would take place securely and cost-effectively;
- e) Show that consideration has been given to best available techniques for **minimisation, aggregation, anonymisation and/or other treatment of data**;
- f) Be accompanied by a **Privacy Impact Assessment**, as recommended by the Information Commissioner's Office.

The DAPF also notes that this framework “does not prevent network operators from accessing more detailed energy consumption data from individual households where the consumer has given their explicit consent to this. This would allow network operators to have more visibility of loads in particular cases such as where electrical vehicle charging is involved.”

In summary, we would like to engage in a dialogue with DfT, OLEV and network companies around the extent to which the minimum data outlined in the consultation could pose privacy risks to consumers. We think producing a plan according to the DAPF would be a necessary and fruitful exercise to respond to consumer concerns around data privacy.

79. Who, in your opinion, should have access to this data?

We understand the rationale for DNOs having access to this data as they are the ones planning for future demand and managing the capacity of their wires on a daily basis. However, the DfT should be mindful of the live debate between Ofgem and the industry as to whether certain functions that are currently fulfilled by DNOs should move into internally separate or completely separate entities called DSOs (Distribution System Operators). Since their activities and possibly financial incentives would be different to the DNOs, Ofgem and the DfT need to be mindful of which data can be shared at which level with which entity.

For the Transmission Operators (TO) and Electricity System Operators (ESO) we do not see a case for them needing the same level of granularity of data. We would assume that aggregated number of chargers and the demand profiles of multiple chargers in an area should suffice for their operational purposes. Again, this should be reviewed if they are able to make the case that they can deliver more benefits with access to more granular data.

This is in line with the DAPF of 2012 which stated that government assumed that the ESO and TO would only need high-level aggregated data and could attain this from the DNOs.

80. What processes should be in place to safeguard data access?

Yes, there should be processes in place to safeguard data access. These include but may not be limited to:

- appropriate consent check mechanisms, where consumer consent is required before accessing data
- proportionate data security processes, when transmitting and storing data
- back up systems, when data needs to be received but the system is down

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