HM Government

Electric Vehicle Smart Charging

Government Response to the 2019 Consultation on Electric Vehicle Smart Charging

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Department for Transport
Great Minster House
33 Horseferry Road
London
SW1P 4DR

This publication is also available on our website at www.gov.uk/government/organisations/department-for-transport

Any enquiries regarding this publication should be sent to us at www.gov.uk/government/organisations/department-for-transport

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Executive Summary

Context

1. The time of day at which Electric Vehicle (EV) charging occurs could have significant implications for the electricity system. We expect that many consumers will charge their EVs at home in the future. Without smart charging, EV charging is likely to happen during existing electricity system peak times (such as between 5pm and 7pm) when many people arrive home from work. This would require significant levels of additional investment both in the networks that transport the electricity, with the costs borne ultimately by consumers, and in electricity generation capacity to meet increased demand.
2. EV smart charging involves shifting charging to a different time of day, such as overnight when there is lower demand on the electricity system, or to times of high renewable energy generation. This can help reduce the need for costly electricity network reinforcement to meet increased demand from EVs, and offers benefits to consumers too, including savings on their energy bills.
3. The Automated and Electric Vehicles (AEV) Act 2018 gives Government powers through secondary legislation to mandate that all EV chargepoints sold and installed in the UK have smart functionality and meet minimum device-level requirements. Government consulted businesses and individuals on implementing smart charging requirements. The 'Electric vehicle smart charging consultation' opened on 15 July 2019 and closed on 7 October 2019.
4. In May 2020 Government published a summary of responses to the consultation, which restated the Government's overall aim to maximise the use of smart charging and mandate that all new private chargepoints must be smart. This publication contains Government's policy response to all chapters of the 2019 consultation.

Overview of Government Response

Chapter 1

5. In the consultation, Government stated that its overarching aim was to maximise the use of smart charging technologies, and it proposed four objectives to underpin smart charging policy: consumer uptake, innovation, grid protection and consumer protection. We stated that the proposed aims and objectives for smart charging are unlikely to be met without regulatory intervention and outlined a phased approach to legislation.
6. Government will be continuing with this phased approach. In the first phase, we will mandate that new private chargepoints must be smart, and that smart chargepoints must meet device-level requirements. Building on feedback received during and following the consultation, this first phase of legislation will contain some changes to the approach outlined in the consultation. Since

Government consulted in 2019 the smart charging market has developed significantly, yet it is still in a nascent stage. Government's intention is therefore to mandate a minimum set of requirements in 2021 that supports the early smart charging market.

7. However, we recognise that this market is expected to evolve and grow quickly in the coming years as more people purchase EVs. Government remains committed to delivering the four objectives that underpin smart charging policy, and these will be fully implemented in a second phase of legislation. Phase One legislation will not address chargepoint operator interoperability (the ability to switch the operator of one's chargepoint), nor fully mitigate energy system risks like cyber security and grid stability. This is because these objectives cannot be mitigated by device level regulation alone. It is therefore essential that Government takes further action to mitigate the potential risks posed by smart charging. Notably, since the publication of the Phase Two call for evidence, Government has outlined its intention to take a more holistic approach and develop a system-wide approach to regulation across a broad range of smart devices and systems, beyond EV smart chargepoints alone.

Chapter 2

8. In the consultation, Government proposed that the regulations would ordinarily require compliance with BSI (British Standards Institution) Standards for Energy Smart Appliances (ESAs), named as Publicly Available Specification (PAS) 1878 in the summary of responses. A range of further device requirements were also outlined in Chapter 2 to meet Government's objectives on issues such as cyber security and grid stability.

9. Government will be setting smart chargepoint device requirements as part of Phase One legislation. However, Government will not be requiring full compliance with PAS 1878 in phase one legislation. This standard was under development via an industry-led process at the time of consulting, alongside PAS 1879 which provides a framework for Demand Side Response operation. Mandating both PAS 1878 and 1879 will be considered as an option for Phase 2 legislation, and the requirements in our Phase 1 regulations are compatible with the standards established in PAS 1878 and 1879.

10. The key Phase One policy positions by requirement are summarised in the table below.

Requirement	Policy position
Smart chargepoint functionality	Government will mandate that all private chargepoints must be smart.
Cyber and data security	Government will mandate requirements in line with an existing cyber security standard, ETSI EN 303 645.
Interoperability	Government will require that chargepoints must not be designed so as to prevent compatibility with any energy supplier.
Default smart charging	Government will mandate that, during set-up, chargepoints must require EV drivers to set charging preferences and schedules. In addition, these schedules must be pre-set to not charge at peak times.

Grid stability	Government will mandate a randomised delay function, to help address grid stability concerns arising from smart charging.
Safety	Government will mandate that chargepoints should operate in a way that prioritises chargepoint safety.
Monitoring and metering of energy consumption	Government will mandate that the chargepoint must measure or calculate the electricity consumed and/or exported, the time the charging event lasts, and provide a method for the consumer to view this information.

Chapter 3

11. As described in the 2019 smart charging consultation, requirements beyond smart chargepoint devices themselves will be needed to meet Government's policy objectives for smart charging. These future requirements would be placed on entities and systems that can control chargepoints. The consultation referred to this future regulation as 'Phase Two' and asked a series of questions in the format of a call for evidence. Government stated that using the smart metering system was the current lead option for delivering smart charging in Phase Two. We also outlined potential alternative solutions for delivering Government's smart charging objectives, including one using the BSI Standards.

12. Since the publication of the Phase Two call for evidence, Government has increased the scope of policy development in this area to take a more holistic approach across a broad range of smart devices and systems, beyond EV smart chargepoints alone. Future policy development will consider all organisations performing a "load controlling" role, including electricity aggregators and chargepoint operators. The smart metering system remains the lead option for delivering smart charging, but Government is continuing to explore alternative or complementary solutions to smart metering that would still meet Government's policy objectives. Using BSI PAS 1878 and 1879, alongside a supporting regulatory framework, is one such option.

Chapter 4

13. Under Section 14 of the Automated and Electric Vehicles Act, the Government has powers to introduce regulations requiring that prescribed information relating to a chargepoint be transmitted to specific parties. As part of the smart charging consultation, Government issued a call for evidence on the potential benefits, disadvantages and practicalities of introducing regulations to this effect. The call for evidence noted that these powers could be used to ensure that relevant parties, including the Electricity System Operator, Transmission Owners or Distribution Network Operators, were able to access useful information on chargepoint installations and the impact of chargepoints on the network.

14. There are significant benefits to be derived from the opening up and sharing of energy data. EVs represent a new and increasing demand on the energy system, and network operators could benefit from increased access to public EV chargepoint data in order to help them plan for this demand. Since publishing the call for evidence in 2019, we have published a consultation on opening up public EV chargepoint data and intend to continue exploring options for private chargepoint data.

Next Steps

Chapters 1 and 2 - Phase One legislation

- Government will notify the World Trade Organisation of the Phase One smart charging legislation in Summer 2021, ahead of laying the legislation in Autumn 2021.
- Most requirements within the legislation will be enforceable 6 months after the laying date, from Spring 2022. As they may require more extensive hardware and software changes, the cyber security requirements will be enforced from Autumn 2022.

Chapter 3 – Phase Two

- Government will aim to consult in 2022 on an appropriate regulatory approach for flexibility service providers and other organisations controlling load.
- Government will continue to work with industry to explore potential solutions to the cyber security and interoperability challenges ahead of this formal consultation, including via the ongoing work of the EV Energy Taskforce and other industry forums.

Chapter 4 – EV Chargepoint data

- Government intends to take forward further work on exploring whether private chargepoint location and energy data should be shared with specified parties.
- The Government intends to work closely with Ofgem and stakeholders, including the Electric Vehicle Energy Taskforce, to consider appropriate options for the sharing of this data.

Chapter 1 – Introduction, objectives and approach

Introduction

In November 2020 the UK Government announced that the phase-out date for the sale of new petrol and diesel cars and vans will be brought forward to 2030, with all new cars and vans to be fully zero emission at the tailpipe from 2035. To enable this transition and support the UK Government's target to achieve net zero greenhouse gas emissions by 2050, electric vehicles (EVs) need to be effectively integrated into and actively support the energy system.

EV smart charging involves shifting charging to a different time of day, such as overnight when there is lower demand on the electricity system, or to times of high renewable energy generation. This can help reduce the need for costly electricity network reinforcement and increased generation capacity, and offers benefits to consumers too, including savings on their energy bills. Smart charging of EVs plays an important role in driving the transition to a smarter and more flexible energy system. Government and Ofgem are already taking action to drive this transition, as we will set out in the upcoming 2021 Smart Systems and Flexibility Plan.

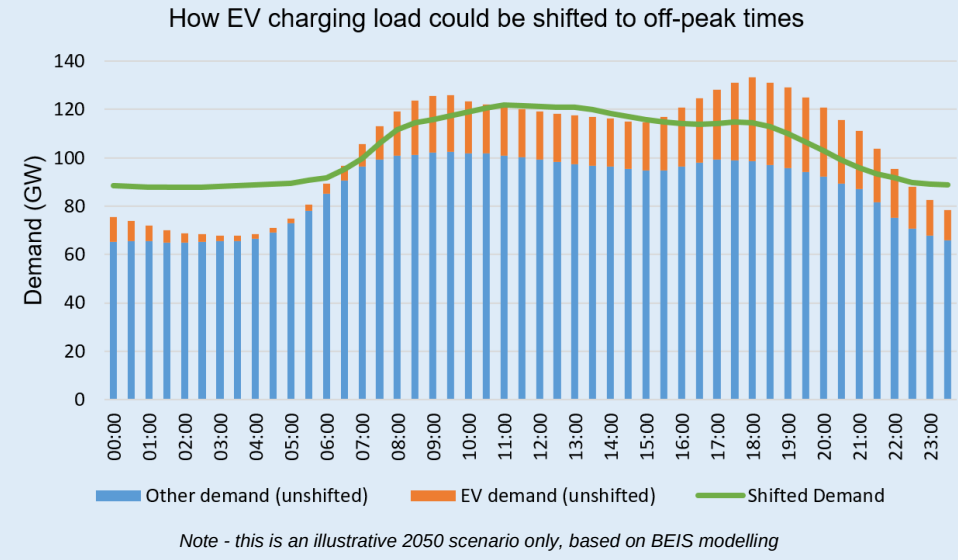
The Automated and Electric Vehicles Act 2018 (AEV Act) gives Government powers through secondary legislation to mandate that all EV chargepoints sold and installed in the UK have smart functionality and meet minimum device-level requirements. Following the passage of the AEV Act, Government consulted businesses and individuals on implementing smart charging requirements under the AEV Act. The 'Electric vehicle smart charging consultation' opened on 15 July 2019 and closed on 7 October 2019.

The aim of the public consultation was to outline the government's approach and objectives for smart charging of EVs (chapter 1); seek views on initial, device-level regulations ("Phase One") (chapter 2); gather evidence on a second phase of legislation for a long-term smart charging solution ("Phase Two") (chapter 3); and gather evidence on whether to use the AEV Act power regarding the transmission of chargepoint data (chapter 4). In May 2020 Government published a summary of responses to the consultation, which restated the Government's overall aim to maximise the use of smart charging and mandate that all new private chargepoints must be smart. This publication contains Government's policy response to all chapters of the 2019 consultation.

Why is smart charging important?

The time at which EV charging occurs could have significant implications for the electricity system. We expect that charging at home and workplaces will be central to the charging ecosystem. In these locations, EV charging is likely to happen during periods of existing high demand on the electricity system – for instance, when many people arrive at work in the morning, or at home in the evenings. To meet these high peaks of demand, significant levels of additional investment in both the networks that transport the electricity and in electrical generation capacity will be needed, with the costs borne ultimately by consumers.

A key feature of a smarter energy system is the ability to minimise peak demand and maximise the use of low-carbon renewable electricity, which is generated intermittently. EVs can support the transition to a smarter energy system by, for example, charging overnight (during the off-peak period), thereby reducing the need for investment in the electricity network. This value can be passed through to consumers via cheaper electricity bills or other rewards. This makes it cheaper for people to charge and integrates EVs into the electricity system in a more affordable way.



Government's aims and objectives for smart charging

In the consultation, Government stated that its overarching aim was to maximise the use of smart charging technologies. It proposed four objectives to underpin smart charging policy: consumer uptake, innovation, grid protection and consumer protection. The majority of respondents agreed with the proposed aim and objectives.

In 2021 Government will legislate to mandate that new private chargepoints must be smart, to help drive the uptake of smart charging and realise the important benefits that it can bring. The four proposed policy objectives also remain the principles underpinning smart charging policy development within Government (consumer uptake, innovation, grid protection and consumer protection). Government remains

committed to maximising the uptake of smart charging, in order to benefit the energy system and help reduce the need for new generation capacity and network reinforcement in light of increased demand from EVs. Smart charging will benefit all energy consumers, since reinforcement costs would otherwise be socialised through energy bills. Therefore, making sure that smart charging solutions are simple, good value, and convenient continues to be central to policy design in this area.

More broadly, we intend to outline in the upcoming 2021 Smart Systems and Flexibility Plan the range of actions Government is taking to drive consumer uptake of smart charging and encourage innovation.

Government's proposed approach to legislation

In the consultation, Government stated that the proposed aims and objectives for smart charging are unlikely to be met without regulatory intervention. To ensure that these objectives are met, a phased approach to legislation was proposed, as outlined below. The majority of respondents agreed with this phased approach.

- **Phase One** – using the AEV Act powers, mandate that new private chargepoints must be smart, and that smart chargepoints must meet device-level requirements, including for cyber security, interoperability and grid stability.
- **Phase Two** – mandate requirements beyond smart chargepoint devices themselves, which instead apply to the entities that can control chargepoints, such as chargepoint operators and electricity aggregators, as well as updating device-level requirements. The requirements on entities go beyond the device only powers of the AEV Act.

Government will follow the phased approach to legislation as described in the consultation. Phase One legislation will be finalised and laid in parliament in Autumn 2021 (“the legislation”). This first phase will mandate that new private chargepoints must be smart, and that smart chargepoints must meet minimum device-level requirements, including for cyber security and grid stability. The Government’s Phase One policy positions and requirements are described in detail in Chapter 2 of this response.

Building on feedback received during and following the consultation, this first phase of legislation will contain some changes to the approach initially outlined. Since Government consulted in 2019 the smart charging market has developed significantly, yet it is still in a nascent stage. Government’s intention is to mandate a minimum set of requirements in 2021 that supports the early smart charging market. We have reassessed the evidence for mandating specific solutions to address Government’s smart charging policy objectives and will not be mandating requirements for all objectives in 2021. The key change from the consultation approach is that, while requirements on supplier interoperability will be introduced, no action on chargepoint operator interoperability will be taken in Phase One. We intend to instead address the interoperability policy objective more comprehensively as part of Phase Two. This revised approach will help ensure that Phase Two builds on and complements the first phase. It will help mitigate the risk described in the consultation, that industry invests in developing products to meet Phase One requirements, only for those requirements to be changed to align with the future framework developed under Phase Two.

The Government remains committed to delivering the four objectives that underpin smart charging policy (consumer uptake, innovation, grid protection and consumer protection). Phase One legislation will not fully address interoperability, nor fully mitigate energy system risks like cyber security and grid stability. Whilst Government considers the Phase One proposals a good first step, these issues and risks cannot be appropriately mitigated using device-level legislation alone. It is therefore essential that Government takes further action, beyond the device level and in a second phase of legislation, to mitigate the potential risks posed by smart charging. Further or updated device-level legislation, either within or outside the AEVA 2018, may also be required alongside any potential Phase Two regulation.

The Government's approach to Phase Two legislation is described in more detail in Chapter 3 of this response. Notably, since the publication of the Phase Two call for evidence, Government has increased the scope of policy development in this area to take a more holistic approach across a broad range of smart devices, services and systems, beyond EV smart chargepoints alone.

Chapter 2 – Phase One: using AEV Act powers to develop device-level requirements

Scope and application of legislation

The consultation proposed that private chargepoints (domestic and some workplace chargepoints), should be smart and meet certain device-level requirements. This would exclude public chargepoints, including on-street chargepoints and destination chargepoints. Respondents had mixed views on this proposal. Those who agreed said that private charging had more potential for smart due to long plug-in times. Some noted that public chargepoints for destination and on-street residential parking could also have high smart potential for the same reason. There was strong support for mandating that smart public chargepoints should meet device-level requirements, however some noted that the requirements may need to be different than those for private chargepoints. The consultation also proposed that cables containing a smart charging enabling device should be subject to the same requirements as smart chargepoints, many respondents agreed with this approach.

Government intends to implement the Phase One legislation broadly in line with its proposed approach. The legislation will apply to private (domestic and workplace) chargepoints for electric cars and vans and will exclude all (both private and public) rapid chargepoints (50 kW or above). Smart cables will also be required to meet the same device requirements as chargepoints. Public chargepoints that are smart will not be required to meet these device requirements. The AEV Act allows Government to place requirements on both the sale and installation of chargepoints in the UK, however Government will only place requirements on the sale of chargepoints. Given that these regulations are focused on products, it is more appropriate to place requirements on the supply of chargepoints, rather than placing obligations on installers.

Government considers this the most appropriate course of action because domestic charging accounts for a high proportion of EV charging[1], and smart charging offers greatest benefit in domestic and workplace settings due to long plug-in times. Smart cables are technically similar to private smart chargepoints and hence the same device requirements can be applied to them, whereas some requirements would need to be adapted or changed were they to apply to public chargepoints. However, we do think there could be the opportunity for increased smart charging in public charging settings in the future, particularly where vehicles are parked on-street overnight. Ongoing work within Government will include consideration of public smart charging potential and any appropriate mitigations for the risks posed by smart

[1] https://theicct.org/publications/charging-gap-UK-2020

charging in these settings. Rapid chargepoints have been excluded due their users typically requiring short plug-in times.

Although the AEVA applies to smart chargepoints only, Chapter 3 of the consultation on long-term solutions for smart charging asked respondents for views on smart charging where the smart functionality is within the vehicle, rather than the chargepoint. Respondents had mixed views citing some barriers to smart charging via the EV but noted that it could be a simpler where EVs already contain the technology required. Government will continue to explore the potential of smart charging delivered by the vehicle, to understand whether further measures may be necessary, in line with the principles outlined in our 2019 consultation.

Territorial Extent

The territorial extent of Part 2 of the AEVA is UK-wide and therefore Government consulted on applying this legislation to all private chargepoints sold into the UK. However, this legislation will initially apply to Great Britain (GB) only. This reflects the fact that the GB energy system is separate from that operating in Northern Ireland (where energy policy is devolved). It recognises that smart metering is being rolled out in GB (a key enabler of the benefits of this legislation), which is not the case in Northern Ireland. We will continue working closely with our colleagues in the Northern Ireland Executive as they consider whether they would wish to extend this legislation to Northern Ireland at a later date.

BSI Standards

In the consultation, Government proposed that the regulations would ordinarily require compliance with BSI Standards for Energy Smart Appliances (ESAs), named as Publicly Available Specification (PAS) 1878 in the summary of responses. This standard was under development via an industry-led process at the time of consulting, alongside PAS 1879 which provides a framework for Demand Side Response (DSR) operation. A final version of both standards was published in May 2021.[2]

BSI's Energy Smart Appliances Programme has addressed current standardisation gaps, while at the same time following the nascent international efforts to standardise DSR internationally. These standards will encourage the manufacture and use of energy smart appliances that enable domestic consumers to participate in a smart energy system.

Government did not specifically seek views on mandating PAS 1878 as a whole within the consultation but did seek views on mandating the standard to meet certain policy objectives. Many respondents agreed with the proposal to require compliance with the standard to meet Government objectives on cyber security and interoperability. Some respondents suggested that a finalised version of the BSI standard was needed before they could provide a detailed response.

Since consulting, Government has further considered how PAS 1878 could be used to inform our approach to smart chargepoint legislation. As described in an earlier section, the smart charging market has grown and developed since our consultation

[2] https://www.bsigroup.com/en-GB/about-bsi/uk-national-standards-body/about-standards/Innovation/energy-smart-appliances-programme/

in Summer 2019, yet is still in a nascent stage. Government's intention is therefore to mandate a minimum set of requirements in 2021 that support the early smart charging market and mitigate some potential risks where we have sufficient evidence to intervene. Given this change in approach, Government will not be requiring compliance with PAS 1878 in our 2021 smart charging legislation. However, we have ensured that our legislation is compatible with PAS 1878.

As described in a later section of the consultation response (Chapter 3), mandating both PAS 1878 and 1879 will be considered as an option for Phase 2 legislation. The BSI ESA programme work remains an important piece of work for Government, including for smart charging policy. The PAS standards are compatible with international smart grid standards and were developed to address gaps in the current standardisation landscape.

Definition of a smart chargepoint

The consultation proposed to define a smart chargepoint as one which is communications enabled and able to respond automatically to remote signals by adjusting the electricity consumption flowing through the chargepoint. Many respondents agreed with this definition, though some respondents proposed amendments to give greater clarity.

Government will define smart functionality within the legislation and require private chargepoints sold to include this functionality. Smart functionality will be described as the ability to:

(a) send and receive information; and

(b) respond to this information by;

- increasing or decreasing the rate of electricity flowing through the chargepoint; and
- changing the time at which electricity flows through the chargepoint.

The above definition is in line with that included within the consultation but has been expanded to reflect feedback within consultation responses, and to more closely align with the definition of an Energy Smart Appliance in PAS 1878.

Government considers it important that all smart chargepoints are capable of supporting demand side response (DSR) services. We will therefore mandate a high-level outcome within the legislation, which states that smart chargepoints must be capable of supporting DSR. This is an initial step to help address the concern that a chargepoint could meet the above definition of smart functionality but be unable to support DSR services in practice.

Cyber security and data privacy

In the consultation, Government proposed that smart chargepoints should meet outcome-based security requirements as well as technical security characteristics set out in the BSI standard (PAS 1878). We proposed that the cyber security standards should also address the protection of any data held by the devices and proposed a mandatory testing and assurance regime for these requirements. Many respondents agreed with this approach.

As noted above, we will not require compliance with PAS 1878 in Phase One legislation, and as such chargepoints will not need to meet the cyber security characteristics set out in PAS 1878. However, the legislation will introduce requirements based on ETSI EN 303 645, a European cyber security standard, with which compliance was required in PAS 1878. EN 303 645 will not be mandated in full, but all key cyber and data requirements from the standard will be mandated where implementable within the limits of this legislation. Requirements will be enforced in line with the approach set out later in this response.

EN 303 645 outlines an outcome-based set of requirements for consumer Internet of Things (IoT) devices, with the UK government contributing significantly to its development. This EN sets an appropriate level of basic cyber security and data privacy requirements for smart chargepoints. While the Department for Culture, Media and Sport (DCMS) has consulted on mandating that IoT devices comply with security requirements aligned with three of the provisions in EN 303 645[3], smart chargepoints pose additional cyber security risks which warrant more extensive mitigation than other IoT devices. Government will therefore mandate requirements that go further than the current intended scope of the DCMS legislation, in line with EN 303 645.

As noted in the smart charging consultation, cyber-attacks on smart chargepoints, such as the hacking of devices, their control systems or the communications between them, have the potential to threaten the stability of the electricity system. Additional requirements on the entities and systems involved in EV smart charging will therefore be vital to deliver the level of cyber security needed to appropriately mitigate these risks. A long-term, comprehensive approach to cyber security will be brought forward as part of Phase Two legislation (see chapter 3).

Interoperability

In the consultation, Government proposed that smart chargepoints should be capable of retaining smart functionality if the chargepoint operator were to be changed, without requiring a visit to the premises, termed smart interoperability. The consultation also noted Government's concern that consumers could face barriers to switching energy supplier due to a lack of interoperability of their smart chargepoint, for example as a result of the bundling of chargepoints with supply contracts. Many respondents agreed with the proposed requirement of chargepoint operator interoperability, with many suggesting it is important to ensure a positive consumer experience. Some respondents suggested caution in implementing the proposal, warning that, though interoperability was desirable, it would be hard to implement, and would add costs to the chargepoint in the short term. Supplier interoperability generally received more support than chargepoint operator interoperability.

In 2021 legislation, the Government will not include a requirement for chargepoints to be capable of retaining smart functionality in the event that the chargepoint operator were to be changed. Smart service offerings remain nascent, and Government intends to gather more evidence on this issue before proceeding with any intervention.

[3] An initial consultation was published in May 2019, and was followed by a call for views in July 2020. The Government's response was published in April 2021. The three requirements proposed were:

- Banning universal default passwords
- Implementing a means to manage reports of vulnerabilities
- Providing transparency on for how long, at a minimum, the product will receive security updates

However, we will act to ensure that consumers are able to switch their energy supplier without their smart chargepoint losing smart functionality. Consumers' interests are best protected when the chargepoint they install can be used with any supplier. Consumers should be able to switch supplier and retain the full smart functionality of their device. Government is concerned that chargepoints could be designed such that they are unable to work with a full range of energy suppliers. The legislation will require that chargepoints retain their smart functionality following a change of energy supplier.

Government is still exploring the options for achieving smart charging interoperability, including GB smart metering, BSI PASs 1878 and 1879, international standards and market-led approaches amongst others. The type of interoperability proposed in our consultation is just one way of delivering interoperable outcomes for consumers, and Government intends to gather further evidence on the most effective and proportionate approach to doing so as part of Phase Two.

We think that addressing interoperability in Phase Two is the most appropriate approach, to ensure any interoperability decision is in line with wider policy development underway for smart systems and load controllers (see chapter 3 for further detail). As set out above, we intend to consider additional, more detailed requirements on cyber security in Phase Two, and addressing interoperability at the same time will allow us to define these requirements in tandem.

Interoperability remains a fundamental policy principle for Government's approach to smart charging. Our intention remains to require smart interoperability as part of our Phase Two approach, and we will continue to work with stakeholders – including through the Electric Vehicle and Energy Taskforce – to find an appropriate means of doing so.

Grid stability: randomised delay function

In the consultation, Government proposed that smart chargepoints must have a function that randomly delays the start time of any load control action. This randomised delay function will help reduce the risk of potential grid stability issues where large numbers of chargepoints switch on or off at the same time. Many respondents were supportive of this approach as a way of helping maintain grid stability, particularly when recovering from power outages. However, many noted concerns around potential negative impacts on user experience and urged Government to consider a consumer override and a short maximum delay time.

Government will be requiring chargepoints to implement this function, following the precedent set by smart metering and the SMETS2, and the approach outlined in PAS 1878. To address concerns about consumer experience, chargepoints will need to have the capability of applying a remotely configurable randomised delay of up to 30 minutes, though by default they will only need to apply a delay of up to 10 minutes. In addition, the chargepoint must be configured in a way that allows the user to override this delay function. This function will not be required when a chargepoint is responding to a response DSR flexibility service (for example, grid balancing services requiring fast response times), or when a randomised delay has already been applied to the intended operation (for example, via a price signal received over the smart meter Home Area Network).

This functionality has already been successfully employed by the GB smart metering system to help mitigate grid stability risks and was also included within PAS 1878. As

the number of smart chargepoints increases, it will be essential to stagger the response of chargepoints in order to maintain grid stability, including when recovering from power outages.

As EV uptake increases, the default randomised delay time may need to be extended to longer than 10 minutes, so as to increase the period of time over which chargepoints come back on to the system and therefore further mitigate grid stability risks. Government will keep this requirement under review, and Phase Two as described in Chapter 3 will consider additional requirements to ensure grid stability.

Minimum charging current or power

In the consultation, Government proposed a requirement that chargepoints should not reduce the rate of charge below a minimum amount of current or power when connected to the vehicle. This was to address reported issues that some EVs switch off before the vehicle has finished charging if the charging rate is slow.

Respondents had mixed views on this proposal, although it should be noted that those who agreed with the proposal provided minimal evidence to support this being a common issue amongst EV chargepoints. Some respondents thought that this issue was caused by a communication issue between the EV and chargepoint.

While limited evidence of this issue was provided in response to the consultation, Government is aware of some potential issues related to vehicle-to-chargepoint communication. Given this issue potentially relates to both EVs and chargepoints, we propose not to introduce this functionality as part of these smart chargepoint regulations. Government will continue to monitor this issue and assess whether a future intervention is required.

Default off-peak charging mode

In the consultation, Government proposed mandating a default setting for smart charging. The default off-peak mode would delay charging until a specified off-peak time. The consultation also proposed an alternative approach, where the default mode would instead reduce the rate of charging during peak times. Many respondents supported the inclusion of a default setting, with the default off-peak mode being the preferred approach. Many respondents also raised concerns about defining a specific off-peak time period in legislation, suggesting it could result in a secondary peak in demand.

Based on feedback, we will adopt a more nuanced approach. The Government will mandate that smart chargepoints must prompt users to input a charging schedule during first use. In addition, smart chargepoints must be pre-set to offer users a charging schedule that by default prevents EVs from charging at peak times. During first use, the user must be given the opportunity to edit or remove this setting. The user must also be able to remove or edit this default setting at a later date. Peak times will be defined in legislation as 8am to 11am and 4pm to 10pm on weekdays. This time window is consistent both with our internal projections of expected EV demand, and with various external studies of EV charging patterns. It has been chosen as a peak time window common to both workplace and domestic charging settings, both of which are within the scope of this legislation. The legislation will allow chargepoint sellers to adopt an alternative approach if a chargepoint is sold

with a demand side response service and if the chargepoint is configured to meet the technical requirements of this service. In this scenario, the default requirement need not be implemented, since the user will be charging their EV in a smart way in line with a DSR service.

Government will not mandate that consumers use the smart functionality of chargepoints. Therefore, mandating the setting of a default charging mode will help mitigate the risk that some users do not engage with smart charging offers, and instead charge during peak times. Importantly, mandating that users must be informed of and prompted to edit the pre-set charging schedule during first use of the chargepoint will help mitigate the risk that any default setting causes confusion and negatively impacts the user experience. The consumer override and edit functions will ensure that users can turn off or edit their charging schedule, for example where they wish to sign-up to a DSR service such as a smart tariff. Defining a peak time period in legislation instead of an off-peak period could encourage greater variation in approach amongst chargepoint sellers, thereby helping to mitigate the risk of a default mode requirement causing secondary peaks in demand.

Given that the extent to which consumers modify their behaviour is key to delivering the benefits of these regulations, we will monitor the effectiveness of this approach closely as part of our post-legislation evaluation. The upcoming 2021 Smart Systems and Flexibility Plan will outline the steps that Government is taking to help drive the uptake of smart charging offers, including work to help ensure that consumers have confidence in the smart charging market.

Safety

In the consultation, Government proposed that smart chargepoints should be required to be safe, with due regard to the existing safety framework. In general, respondents agreed with the approach, although many suggested additional safety requirements or factors that Government could consider.

The Government will be including one new safety requirement in the 2021 legislation. We will mandate that smart chargepoints must be configured in a way that prioritises safety over smart charging related behaviour and user inputs. The legislation will not restate the need for chargepoints to comply with the existing legislative safety framework.

There are many safety standards already mandated by other legislation. Repeating these in our 2021 regulations would create regulatory complexity without providing any additional legal safeguards for consumers. Whilst some respondents did identify additional standards that are not currently legislative obligations, many related to chargepoint installation, which as outlined in the earlier “Scope and application” section is out of scope for this legislation. Consultation responses provided limited evidence of smart-specific safety risks. However, PAS 1878 included a high-level outcome on safety, whereby safety must be prioritised over energy flexibility related behaviour. Government will mandate requirements in line with this outcome for smart chargepoints, as a first step towards mitigating any potential smart related safety risks that may occur.

Chargepoint safety and the quality of chargepoint installations remains a high priority for Government. The Office for Zero Emission Vehicles (OZEV) will continue to work

with its partners across government to ensure installations are of the highest quality. Health and safety is central to the smart energy consumer journey, from the installation, maintenance, and use of such appliances in manual and automated modes. Work is underway in Government to identify any risks that should be mitigated.

Vehicle-to-Grid/Vehicle-to-Everything

In the consultation, Government recognised that enabling smart charging would help facilitate the deployment of technologies such as vehicle-to-grid (V2G), but noted that legislation would be needed to allow the space for these technologies to further develop. Many respondents agreed with this approach, though there were mixed views as to whether the legislation should include specific requirements for V2G, with some concern that doing so could potentially impede the development of this nascent technology.

Government will be including bidirectional vehicle-to-everything (V2X) chargers within the scope of the smart charging legislation. V2X is the umbrella term for technologies that export EV electricity to the grid (V2G) and those that export only to behind-the-meter systems (e.g. vehicle-to-home). Government has expanded the definition from V2G to capture all forms of bidirectional charging.

V2X chargepoints, when installed in private charging settings, will be required to meet the device requirements described in legislation. There are no additional requirements for a chargepoint with V2X functionality when compared to one that only allows unidirectional charging. The legislation will ensure that all smart chargepoints conform to set minimum requirements as described earlier in this chapter, for example on cyber security. We consider that the impact of these requirements on V2G innovation will be negligible. In addition, any impact is outweighed by the benefit of ensuring V2G chargepoints meet the same minimum standards as unidirectional smart chargepoints, avoiding creating a potential loophole in the legislation.

Furthermore, the second phase of the smart charging regulations offers opportunities to address any unintended issues resulting from this legislation before the mass deployment of V2G technologies, expected after 2025[4]. Government is also seeking to develop a future policy strategy for V2X/V2G, and intends to launch a Call for Evidence on V2X later this year.

Monitoring and recording electricity consumption

In the consultation, Government proposed that a chargepoint must monitor and record the electricity imported and/or exported during a charging event, the time the charging event lasts, and provide a method for the consumer to view this information. Many respondents agreed with this proposal, suggesting that it will help EV drivers track energy consumption and encourage greater engagement in smart charging. Some respondents thought that regulation shouldn't specify the types or format of information provided to the consumer.

[4] As shown in National Grid's Future Energy Scenarios and Advance Propulsion Centre Roadmap.

The Government will be mandating specific monitoring and reporting requirements within the legislation. We will mandate that a chargepoint must measure or calculate the electricity imported/exported and amount of time for each charging event and enable the user of the chargepoint to view this information. This requirement will help consumers to engage with their energy bills and usage, and allow either the measurement or calculation of this consumption information (in line with PAS 1878). Government will not specify the format or method for providing this information to users, but deems it appropriate that as a minimum, consumption information should be provided per charging event, to a 10% accuracy level and aggregated over the period of a month and year.

In addition, we will mandate that a chargepoint must as a minimum be capable of measuring or calculating power import/export values every second with an accuracy upper limit of 10% and providing these values over an interface to any DSR service provider, such as an aggregator. These minimum requirements were included within PAS 1878 and are necessary to ensure a chargepoint is operationally capable of supporting DSR services.

It should be noted that existing legal requirements already apply to the metering of electricity supply for settlement and trade purposes as stipulated in the Metering Instruments Regulations, and these should be complied with where relevant.

Enforcement authority and penalties

In the consultation, Government proposed to appoint the Office for Product Safety and Standards (OPSS) as the enforcement authority for these regulations and proposed that a civil penalty would apply for each non-compliant chargepoint sold or installed.

Many respondents agreed with both proposals, stating that the OPSS is well placed to enforce these regulations and that a monetary fine is a suitable deterrent for non-compliance.

Government is likely to appoint the Office of Product Safety and Standards (OPSS) as the Enforcement Authority for EV smart chargepoints, subject to final agreement. OPSS is an established regulator of products and has a breadth of enforcement experience and technical expertise, including in relation to public charging infrastructure for EVs.

Government will legislate for a maximum penalty which will apply to sale of chargepoints only, as “installation” will not be in scope of the legislation. The maximum penalty will be £10,000 per chargepoint for non-compliance, and £250,000 for obstruction of officers and false statements. Government deems this an appropriate maximum to deter non-compliance and obstruction, whilst allowing the regulator flexibility to take a proportionate approach when determining and issuing penalties.

The Enforcement Authority will be transparent about its approach to enforcement, including its approach to dealing with non-compliance and calculating penalties within the maximum range.

Time for compliance

The consultation proposed that there should be a 12-month period between laying the legislation in Parliament and enforcing it. Most respondents supported this approach but some caveated that it would be dependent on the finalised requirements included in the legislation.

Government has reassessed this proposal on a requirement-by-requirement basis to determine an appropriate lead-in time for compliance. The final legislation is less extensive than the consultation proposed, and many of the legislative requirements are already being met by UK industry. In addition, Government considers it important that the smart functionality elements of the legislation come into force ahead of the announced[5] change in scope of the EV Home Charge Scheme (EVHS), particularly the desire to focus this scheme solely on flats (leasehold properties) and rental properties from 31st March 2022. The inclusion of smart functionality requirements within EVHS has helped drive the number of smart chargepoints on the market. We may be unable to rely on this holding when the scope of EVHS is reduced without further measures. Most requirements will therefore be subject to a 6-month lead-in time (see the table below for further detail).

Time for Compliance (i.e. the time between the regulations are laid in parliament and enforced)	**Legislative requirement**	**Rationale**
6 months	Smart functionality Monitoring and reporting of energy consumption Default Smart Charging Randomised Delay Function Supplier Interoperability	Requirements are either already met by the UK market or require minimal hardware/software development
12 months	Cyber and data requirements	Compliance with cyber requirements may require a longer timeframe, to ensure that the supporting changes can be implemented by industry

Demonstrating compliance

The consultation made two proposals with regards to demonstrating compliance: (i) an independent security testing and assurance scheme for cyber security, and (ii) a

[5] Support for small businesses, landlords and leaseholders: government charges up the electric vehicle revolution with £50 million boost - GOV.UK (www.gov.uk)

certification and assurance scheme for interoperability. Both proposals were based on the use of PAS 1878 for these requirements.

Many respondents agreed with these proposals, noting that testing, assurance and certification for these requirements would help to ensure that Government's aims for cyber security and interoperability were met. However, some raised concerns over the burden this approach would place on industry, and thought that further detail on the legislative requirements would be needed before making a final decision.

Government will require that compliance with these regulations is demonstrated with an accompanying statement of compliance and technical file, which should give detailed evidence of how the requirements in these regulations are met. This file will need to be made available to the enforcement authority upon request.

Government considers this a proportionate approach to assurance for these regulations, given the nascent nature of the smart charging market. Government will monitor compliance closely and will consider increasing assurance requirements over time.

Other

Equalities Act 2010

The consultation asked respondents whether any of the proposed requirements would disadvantage people with protected characteristics, as defined in the Equality Act 2010, or could otherwise cause equality issues. Although some of the responses did discuss equality issues, the risks were generally in relation to fair access to smart charging, not specifically about discrimination in relation to the Equality Act resulting from this specific smart chargepoint legislation. Taken in the context of a policy to increase the provision of domestic and workplace chargepoints, the overall conclusion is that the policy does not disadvantage people with a particular protected characteristic.

The Government has since reviewed the legislation in relation to its public sector equality duty. The main finding of the review was that the legislation may increase the purchase price of a chargepoint which could create a barrier for households that are less financially secure. Poverty is higher among all black and ethnic minority groups than among the majority white group and among families where at least one member is disabled.[6] However, the chargepoint is only a small proportion of the cost of an electric vehicle itself and smart charging will help offset costs and reduce overall systems costs in the long run. The Government therefore concluded that the increased purchase price of a chargepoint will not cause discrimination.

Furthermore, as smart charging becomes more common it is expected that there will be increasing choice in the variety and bundling of services. The complexity of the market might make it more challenging to understand smart charging tariff options. This might disproportionately affect older people, or those with a mental impairment. But because of the opt-out function in the legislation, consumers will still have the option to charge their vehicle in a non-smart way, therefore government concluded that it would not cause discrimination due to age or disability.

[6] Poverty in the UK: statistics Briefing paper Number 7096, 18 June 2020, by Brigid Francis-Devine, House of Commons Library

We considered the impact of other device requirements such as default and grid stability, but given they have opt-out functions we concluded that they will not cause equality issues. The overall conclusion is that the policy does not disadvantage people with a particular protected characteristic.

However, the Government is taking a range of steps to ensure fair access to smart charging for EV drivers. Government and Ofgem will outline in the 2021 Smart Systems and Flexibility Plan the steps being taken to ensure that consumers are informed and have trust and confidence in the smart charging market. Furthermore, Government has committed to working with the EV Energy Taskforce and industry to improve the provision of information and advice on EV energy issues such as smart charging.

More broadly, Government and Ofgem will continue to work together to ensure that consumers who participate in a smart energy system are appropriately protected, and to help those who may otherwise struggle to participate, such as low income and vulnerable consumers.

In addition, in the recent consultation to improve the consumer experience at public chargepoints[7] we asked stakeholders how all consumer needs should be met when using the public charging network for consumers with visible and non-visible disabilities. It is essential that all EV consumers can easily find, charge and pay at public chargepoints.

Energy efficiency

The consultation asked respondents for a view on whether there should be a specific energy efficiency requirement on chargepoints. The Government did not express a view on including such a requirement within the legislation. Some respondents thought a requirement should be included, making suggestions such as a minimum acceptable standby power draw. Those who disagreed recommended that efforts should be focused on improving the energy efficiency of vehicles, rather than on placing requirements on chargepoints, since these are largely efficient products already.

Considering the evidence provided in consultation responses, Government does not consider the energy efficiency of smart chargepoints an issue that requires intervention at this stage, particularly given the energy consumption of smart chargepoints themselves is low. We will not place an energy efficiency requirement on chargepoints via these regulations.

Impact of proposed measures on different Parties

To assist with internal evaluation of the above proposed measures, the consultation asked for evidence and views on the impact of these regulations on the following parties: consumers, chargepoint manufacturers, DNOs, energy suppliers, chargepoint operators, Government (local/national) and other relevant parties.

Responses covered a range of the above groups, citing both the cost and benefit to consumers and manufacturers where chargepoints may need to be upgraded in line with regulations, and the benefits to DNOs and chargepoint operators from increased flexibility. A full read out of these views is published in the summary of responses.

[7] https://www.gov.uk/government/consultations/the-consumer-experience-at-public-electric-vehicle-chargepoints

An impact assessment for this legislation is being published alongside this response. The monetised benefits are estimated at £300 - £1100m up to 2050 with a central estimate of £700m, primarily derived from reduced electricity system costs.

The impact on industry of the legislation is estimated between a £10m benefit and £260m cost up to 2050, with a central estimate of a £130m cost, primarily related to product development costs to meet the requirements. The impact assessment assumes the regulation costs every manufacturer an additional one-off £550k to £870k and an additional £60k to £110k each year (i.e. all CP manufacturers incur the full cost of compliance.) We believe that this is a very conservative approach, since the total cost to the manufacturer will depend on the extent to which it already meets the requirements set out in our regulations, and a large proportion of manufacturers already produce smart chargepoints.

The potential costs to industry are significantly outweighed by the benefits to the energy system and consumers, and the legislation has a Net Present Value of up to £1100m by 2050, with a central estimate of £500m.[8]

[8] All monetary figures are in 2012 values and discounted at 3.5%.

Chapter 3 - Phase two: Smart charging long-term approach, call for evidence

Context

As described in the 2019 smart charging consultation, additional requirements beyond smart chargepoint devices themselves will be needed to meet Government's policy objectives for smart charging. These future requirements go beyond the device-only powers of the AEV Act, and would be placed on entities that can control chargepoints, such as chargepoint operators, electricity aggregators, and electricity suppliers. This could subject these entities to a form of regulation on their wider operations, including the systems being used to remotely control chargepoints. The consultation referred to this potential future regulation as Phase Two and asked a series of questions in the format of a call for evidence (referred to as the "call for evidence" below).

Decision on a long-term approach

The call for evidence proposed to use the Phase One policy principles of grid protection, consumer protection, consumer uptake and innovation as criteria to determine the best solution for Phase Two. Government suggested that a Phase Two solution needed to be in place by 2025, and that a decision on a solution was therefore required between 2020 and 2022. Several factors were proposed to help determine an appropriate decision point. Most respondents agreed that Government should make a decision on Phase Two regulation between 2020 and 2022, with 2020 being the most popular response. Most respondents also agreed with the factors proposed to help determine an appropriate decision point.

Government will be continuing with the phased approach for smart charging legislation, as outlined in the 2019 smart charging consultation. The Phase One legislation, as described in the chapters 1 and 2 of this response, will not deliver interoperability, nor mitigate energy system risks including cyber security and grid stability. Whilst Government considers the Phase One proposals a good first step towards addressing some of these risks, they cannot be appropriately mitigated using device-level legislation alone. It is therefore essential that Government takes further action to mitigate the potential risks posed by smart charging.

Since the publication of the Phase Two call for evidence, Government has increased the scope of policy development in this area to take a more holistic approach across a broad range of smart devices and systems, beyond EV smart chargepoints alone. Future policy development will consider wider organisations performing a "load

controlling" role[9], including flexibility providers such as electricity aggregators and chargepoint operators. Load controllers will become an increasingly important group of organisations as we transition to a smarter, more flexible energy system, yet they also present new and growing risks to the energy system and consumers. These risks will be catalysed by the electrification of heating and transport and align with those described in the 2019 Phase Two Call for evidence, such as cyber security, grid stability, and interoperability.

Further details regarding Government's work on load controllers will be set out in the upcoming 2021 Smart Systems and Flexibility Plan, and a Call for Evidence on regulating third party intermediaries in the retail energy market, due to be published shortly. Government will aim to consult in 2022 on an appropriate regulatory approach for flexibility service providers and other organisations controlling load. Similar to the approach described in the call for evidence, we will need to balance support for the development of flexibility with robust protection for consumers and the electricity system. The factors proposed to help determine an appropriate decision point in the call for evidence continue to inform Government's approach.

Using smart meters for EV charging and alternative options

The call for evidence outlined how the smart metering system could deliver a solution for EV smart charging. Government stated that the smart metering system has already demonstrated that it can achieve two of the four proposed smart charging policy objectives – consumer protection and grid protection, including cyber security. The smart metering solution was therefore proposed as the current lead option for delivering smart charging in Phase Two. The call for evidence highlighted that there would however be some challenges to overcome if the smart metering system is to meet all smart charging policy objectives in a comprehensive way. A majority of respondents agreed that the smart metering system could be a good solution. Other respondents highlighted potential risks, such as isolating the UK market, or proposed suggestions for how the smart metering system could be improved to help it better deliver smart charging.

The call for evidence also outlined potential alternative solutions for delivering smart charging in Phase Two. The proposed alternatives included BSI standards for energy smart appliances, NIS (Network and Information Systems) regulations, ADE (Association of Decentralised Energy) Code of Conduct and work related to the Future Energy Retail Market Review. In response, some thought that an alternative solution could deliver on one or more of the Government's smart charging policy objectives, although a high proportion didn't provide a view. When asked to provide alternative options, some thought that market forces would deliver the best solution for smart charging, or suggested imposing specific minimum standards, such as OCPP (Open Charge Point Protocol).

Since publishing the call for evidence, Government has undertaken work to further develop the smart metering option. In 2020, Government introduced enhanced proportional load control APC[10] functionality into the smart metering system, which allows greater granularity and precision in controlling loads such as electric vehicles.

[9] Load controllers are organisations who provide products and services to control electricity usage using communication networks.

[10] Auxiliary Proportional Controller - see consultation at https://smartenergycodecompany.co.uk/latest-news/beis-response-to-consultation-on-proportional-load-control-and-associated-smets-drafting-new-consultation-on-gbcs-and-chts-drafting/

Proportional load control was designed to enable more innovation than was previously possible, including potential compatibility with V2G technologies. Government also commissioned the Beyond Off-Street trial, an initiative to demonstrate how smart meters can deliver smart EV charging in an on-street and destination charging setting. Government recognises there are outstanding issues to be worked through for the smart metering solution to meet all our objectives for smart charging in a comprehensive way. We are undertaking further work to consider these issues, and welcome further engagement with industry in this area.

Government is also continuing to explore alternative options to the smart metering solution. One such option, as described in the call for evidence, is using BSI (British Standards Institution) Publicly Available Specifications (PAS) 1878 and 1879 for Energy Smart Appliances as a basis for a long-term approach, alongside a supporting regulatory framework. BSI PAS 1878 and 1879 were published in May 2021, after being developed via a Government sponsored, industry-led process. They provide both a standard for device-level requirements and a framework for Demand Side Response operation and are compatible with international smart grid standards being developed.

It should be noted that call for evidence responses provided limited details on alternative options for delivering smart charging that meet Government's policy objectives. While government will continue to explore a variety of approaches, the smart metering system remains the lead option for ensuring cyber secure and interoperable smart charging in the long term. We encourage stakeholders who favour alternative options to share their views with us.

As referenced in the previous section, further work is underway within Government to determine an appropriate regulatory response to load controlling entities.

Next steps

Government continues to be mindful that the smart charging industry remains at an early, albeit rapidly developing stage. We are committed to finding a solution which safeguards consumers and the energy system, while also providing space and freedom for innovation as the market to continue to grow and evolve.

As described above, Government aims to consult on an appropriate regulatory approach for organisations performing a 'load controlling' role in 2022. Responses to the upcoming Call for Evidence on regulating third party intermediaries in the retail energy market, in which further evidence will be sought on load controlling entities, will help to inform ongoing work in this area. In addition, we will continue to work with industry to explore potential solutions to the cyber security and interoperability challenges ahead of formal consultation, including via the ongoing work of the EV Energy Taskforce and other industry forums throughout 2021 and 2022.

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

Context

Under Section 14 of the Automated and Electric Vehicles Act, the Government has powers to introduce regulations to require that prescribed information relating to a chargepoint be transmitted to specific parties. As part of the smart charging consultation, Government issued a call for evidence on the potential benefits, disadvantages, and practicalities of introducing regulations to require that operators of private chargepoints share information with network operators.

The call for evidence noted that these powers could be used to ensure that relevant parties, including the Electricity System Operator, Transmission Owners or Distribution Network Operators, are able to access useful information with regards to chargepoint installations and the impact of chargepoints on the network. We suggested that chargepoint data could help network operators to prepare and ensure that their networks will be capable of coping with the additional demand that EVs are expected to bring. With additional data, network operators could more strategically target any necessary reinforcement of their networks, ultimately offering savings for the taxpayer.

Call for evidence responses

Many respondents agreed that network planning and reinforcement by network operators – particularly DNOs – could benefit from regulations under Section 14 of the AEV Act. However, several respondents cited potential data privacy risks and suggested that any data should be appropriately aggregated and anonymised. Some respondents were concerned about the detriment to chargepoint operators, noting that a requirement to share data with other parties could cause competition concerns and/or pose undue administrative burdens - for example, in setting up and maintaining data sharing arrangements. Many respondents cautioned against mandating the sharing of live consumption data from private chargepoints, as this would pose an administrative burden, as well as having particularly significant implications for data privacy.

Next steps

There are significant benefits to be derived from the opening up and sharing of energy data. With our future energy system likely to be highly decentralised and

comprise millions of low-carbon assets, the sharing of data will be essential to ensuring that we can take a coordinated, whole systems approach to the net-zero transition and deliver a positive consumer proposition. Understanding where smart assets are located and when they might provide opportunities to offer flexibility will be a critical task for Government and market actors.

EVs represent a new and increasing demand on the energy system, but will also generate data that could facilitate the transition to net zero. Network operators could benefit from increased access to chargepoint data to help them plan investments in the network and to anticipate changes in demand. Other market actors may also benefit from greater visibility of chargepoint data – for example, by using data to help develop innovative flexibility services. Finally, consumers can benefit from the sharing of both private and public chargepoint data, for example through access to third party services that help them find a nearby public chargepoint or to help them better understand their domestic EV energy consumption. While some chargepoint data is already available to consumers and network operators in those premises where a smart meter is installed, it may be necessary for Government to intervene where this data is not available – for example, in the public network and in those premises without a smart meter.

Therefore, across Government, we are progressing work to improve both public and private EV chargepoint data visibility. In February 2021 Government published a consultation on the consumer experience at public chargepoints, including proposals to improve the provision of public electric vehicle chargepoint data. A response is due to be published in Autumn 2021 and legislation laid later in 2021.

In addition, Government intends to take forward further work on exploring how best to ensure that network operators can obtain and use private chargepoint data to support reinforcement planning. The Government intends to work closely with Ofgem and stakeholders including the Electric Vehicle Energy Taskforce to consider appropriate options for the sharing of this data.

Annex

The below table summarises each theme within this consultation response, and the 2019 consultation questions each theme covers.

Section within Government response	2019 consultation questions covered
Chapter one	
Government's aims and objectives	Q1, Q2, Q3, Q4, Q5, Q6
Government's proposed approach for legislation	Q7, Q8
Chapter two	
Scope and application of legislation	Q9, Q10, Q11, Q12, Q13, Q14, Q74
BSI Standards	Not applicable
Definition of a smart chargepoint	Q15, Q16
Cyber security	Q17, Q18, Q19, Q20, Q21, Q22, Q23, Q24
Interoperability	Q25, Q26, Q27, Q28
Grid stability: Randomised delay function	Q29, Q30, Q31, Q32
Minimum charging current or power	Q33, Q34, Q35
Default off-peak charging mode	Q36, Q37, Q38, Q39
Safety	Q40, Q41, Q42, Q43, Q44
V2G	Q45, Q46, Q47
Monitoring and recording electricity consumption	Q48, Q49
Enforcement authority and penalties	Q50, Q51, Q52, Q53
Time of compliance	Q54, Q55
Demonstrating compliance	Not applicable
Other	Q56, Q57, Q58, Q59, Q60, Q61
Chapter three	
Decision of a long-term approach	Q62, Q63, Q64, Q65, Q66
Using smart meters for EV charging and alternative options	Q67, Q68, Q69, Q70, Q71, Q72, Q73, Q75, Q76
Chapter four (all sections)	Q77, Q78, Q79, Q80, Q81, Q82, Q83, Q84