Charles Wood
Energy UK
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London
SW1Y 4LR
20 April 2018

Dear Charles,

Energy UK Consultation on Acceptable Smart Charging Standards

Thank you for the opportunity to comment on your 2018 consultation on Acceptable Smart Charging Standards.

As you are aware, ELEXON is the code administrator for the Balancing and Settlement Code (BSC) We are responsible for managing and delivering the end-to-end services set out in the BSC. This includes responsibility for the delivery of balancing and imbalance settlement. We are also the Electricity Market Reform (EMR) Settlement Services Provider. We deliver settlement for the Contract for Difference (CFD) and the Capacity Market (CM).

We have responded to those specific consultation questions on which we have views. In addition, we would highlight the following general points for consideration.

Not all electric vehicle (EV) charge points will be metered

As part of the Department for Transport's (DfT's) On-Street Residential Charge Point Scheme, the Office for Low Emission Vehicles (OLEV) is expecting large numbers of 'slow' charge points to be installed in unmetered lamp posts.

We have been heavily involved in developing Settlement requirements for these products that will use the unmetered supplies arrangements. We have discussed these in detail with the BSC's committees (Supplier Volume Allocation Group (SVG) and Unmetered Supplies User Group (UMSUG)), as well as with OLEV, the DfT, Ofgem and Regulatory Delivery at the Department for Business, Energy & Industrial Strategy (BEIS). You can find full details of the discussions so far in SVG paper 206/04, public. We have also been talking to many manufacturers of EV charging products looking to sell charge points and services in the near future.

During these discussions, it became clear that Distribution Businesses will not grant metered connection agreements to this particular type of EV charging product, even if the product contains a Meter. This is because the product will be fed by an existing unmetered connection point (the lamp post). This therefore led to consideration of an unmetered approach. Since the Electricity Act (and the BSC) envisage either a metered or unmetered supply (and have no concept of a metered product using the unmetered arrangements), the outcome of the discussions is that the products can only be considered for an unmetered supply if manufacturers use non-Meter 'measuring devices'. We have developed arrangements that use feedback from these measuring devices with BSC-approved back-end software (the 'measured Central Management System' or mCMS) to ensure accurate Settlement data.

We have received multiple applications from manufacturers to use mCMS with EV charge points in lamp posts. The SVG has already approved two mCMS for use in Settlement. It is worth noting that the SVG only approves the Settlement software. Manufacturers must still obtain the relevant Distribution Business's agreement to an unmetered supply before the charge points can be installed.

There is confusion among manufacturers over the regulatory requirements

The regulatory requirements for EV charge points are complex, and span multiple pieces of legislation and industry codes. They also span different government departments (the DfT and BEIS, and OLEV which sits between them). To our knowledge, there is no single guide for manufacturers on navigating these requirements which you may wish to consider.

Many charge point manufacturers are technology start-ups looking to bring innovative solutions to a competitive market. They are unlikely to have existing experience of the energy industry. While we support the development of charging standards, there is a risk that these could add further regulatory hurdles or complexity for manufacturers, and consideration will need to be given to those charge points already installed or planned to be installed. We would support any efforts to ensure that the various regulatory requirements are 'joined up', clear and transparent to all potential participants in the EV charging market.

To give one example of the complexity, manufacturers are continuing to approach us with lamp post charge points that contain Meters – not realising that they need to use non-Meter measuring devices. We are usually unaware of these manufacturers' existence before they approach us. Even where manufacturers have successfully applied for a mCMS under the BSC, different Distribution Businesses will have different engineering standards. These may result in a single manufacturer having multiple unmetered connection agreements that differ in scope according to the individual Distributor's requirements.

As well as the specific issues around metering, EV charge points are also subject to the requirements set out in the Alternative Fuels Infrastructure Regulations 2017 (AFIR). We understand that BEIS will be responsible for enforcement of the AFIR; however it is unclear what form this enforcement will take.

There are no standardised definitions of different charging rates

The above discussions required the SVG and UMSUG to distinguish 'slow' charging (suitable for an unmetered supply) from 'fast' or 'rapid' charging (which should be metered, due the rate/amount of energy that flows/used). However, there are no existing legal definitions of these terms.

We agreed a BSC definition of 'slow' charging as being charge points which have an individual power output that is typically not greater than 7.2kW.[1] Development of consistently-used definitions would be useful when considering charging standards.

Some types of charge points will be operated by multiple third-party providers

We understand that, for lamp post charge points, local authorities are tendering for third parties to both provide and operate the change points. If there is a future desire for Distribution Businesses to control these charge points, this would therefore mean interacting with multiple third-party operators (in addition to the energy supplier).

Not all charge points will necessarily have smart-charging capability

The lamp post charge points we have seen to date, have no smart-charging or Demand Side Response (DSR) capability. Therefore a simple ON/OFF control may remain appropriate for these products.

We suggest that the standards may need to distinguish between products by location (e.g. on-street, at-home) and/or by their capability.

[1] Acknowledging that, due to Distribution Businesses' different engineering standards, not all Distributors may be able to support this rate of charging.

The extent of interoperability among existing charge points is unclear

Various types of charge points have already been installed or are planned for installation. The extent of interoperability between these products is unclear.

Lack of interoperability, and the existence of multiple charge point providers, could create a risk of stranded assets for local authorities and Distribution Businesses if some providers later cease to operate. The SVG has noted this concern, although it sits outside the BSC and may be mitigated by the individual commercial arrangements between local authorities and charge point providers.

We are working hard to ensure the BSC enables EV uptake

As well as removing any potential BSC barriers to lamp post charge points, we have been talking to other innovators in the Smart Charging arena. These include Vehicle to Grid (V2G) offerings and parties looking at options for domestic, or in-car, metering.

As you may be aware, we are currently developing an ELEXON Sandbox for the electricity market to test innovative ideas. We are also investigating options for consumers to have multiple Suppliers. These arrangements would be required where customers wish to use a different Supplier for their EV.

We have also published a white paper which offers an ELEXON view of how BSC central services could be adapted to offer Settlement solutions in support of individual customers buying electricity from more than one Supplier. This includes consideration of EV charging.

We are also designing the arrangements and Target Operating Model for Market-wide Half Hourly Settlement for Ofgem, which will also consider how arrangements are flexible to accommodate new technologies.

We would welcome a face-to-face meeting to discuss any of the above. Our response to the specific consultation questions is set out below.

Yours sincerely,

Kevin Spencer
Market Architect
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Respondent Information		
Name of Respondent	Kevin Spencer	
Name of Company	ELEXON Limited	
Type of Company	Code Body	
Contact Details	kevin.spencer@elexon.co.uk	Tel. 020 7380 4115
Do you agree to the publication of your response by Energy UK?	Yes, we will also publish our response on the BSC Website	

Q1: Do you agree that Smart Charging Equipment Standards should be technology neutral and performance based? If not, what technical specifications do you believe need to be laid out by Government?
We believe Smart Charging Equipment Standards should be technology neutral and performance based. Considerations are likely to be different depending on where such infrastructure is installed. For example, on-street requirements are likely to be very different than in-home or commercial requirements.

Q2: Do you agree with the overarching requirements for smart charging standards as defined in the section of the paper entitled Smart Charging Equipment Standards? Is there anything you believe should be added or removed?
Again, we believe different types of installation need to be accounted for. We note that the section identifies that different requirements and emerging business models for public, private and domestic charging may result in a need for charging standards to be segmented to reflect this. For example, ON/OFF only may be appropriate for unmetered connections. Monitoring of frequency/voltage may be required across multiple infrastructure providers and consideration of parties reacting to conflicting signals will need consideration.

Q3: Is there a need for segmentation of smart charging standards to reflect variation between public, private, and domestic charging? If so, what are the key variations which should be addressed?
As per previous responses, each variant requires separate consideration. In particular, public smart charging infrastructure is likely to be backed by multiple service providers' bespoke back-end systems. Coordination of control across such systems may need to be considered where multiple parties are in operation within a Distribution Network. Domestic EV customers may not opt for smart Meters, and so control of such charge points would need consideration. Likewise, there is no requirement for Meter data to be on a Half Hourly basis since they are <100 kW Maximum Demand.

The existing Non Half Hourly profiling arrangements do not cover EVs either, so Meter data available through Settlement may not provide an accurate view of EV load on the system. Smart Meter controls will need to be developed if control of charge is required to be more than ON/OFF.

Q11: What are the broader systems and workstreams across government and industry with which the development of charge point standards should be integrated or aligned with?
Further to previous comments, the smart Meter arrangements and systems (Data and Communications Company Infrastructure) will need to be considered. BSC Central Systems or new market services developed for Market-wide Half Hourly Settlement may also be able to provide information and data relating to the timing and usage of EVs on the networks. Outside of the energy industry, any interaction with DfT or OLEV policy and initiatives (such as the Alternative Fuels Infrastructure Regulations (AFIR) 2017 and On-Street Residential Charge Point Scheme) should be considered. For example, OLEV's guidance for local authorities on the On-Street Residential Charge Point Scheme already includes technical specifications for charge points.

Q15: What are the most significant barriers and risks to the development of robust, competitive markets for smart charging solutions?
Currently, there are issues and risk with charge point manufacturers' lack of understanding of the Parties, Codes and arrangements for electricity in the UK. There is also a risk that, in a competitive market with multiple providers, some charge point providers cease operating. This could potentially leave stranded or inoperable assets, either on the streets or within consumer premises.

Q17: Do you have any other comments you wish to raise, which you feel were not covered by other questions?
ELEXON is keen to be involved in any ongoing discussion in relation to smart charging, smart grids, smart cities and development of the Distribution System Operator role. We want the BSC to enable development of flexibility and new technology offerings. We consider that we are ideally placed to deliver changes required in these areas.