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Dear BEIS EV smart energy team,

## **Citizens Advice response to BEIS' 'Role of Vehicle-to-X Energy Technologies in a Net Zero Energy System' call for evidence**

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We welcome the opportunity to respond to this consultation. As the statutory consumer advocate for GB energy consumers, Citizens Advice has unique insight about consumers' emerging problems with and barriers to getting their homes ready for net zero.

As the consultation notes, flexibility will be a key way of meeting Britains net-zero targets, in a cost-effective way. The potential for electric vehicles (EVs) to contribute to a flexible energy system goes beyond charging them when renewable energy is both plentiful and cheap. The next step is to store and export energy from an EV back to a system to be used elsewhere - whether that's a home (V2H) or a building (V2B) such as a business or back to the electricity grid (V2G). This is called V2X, where "X" stands for everything, and is the umbrella for all forms of this technology. V2X technologies, alongside other demand-side response technologies, have the potential to make a significant contribution to achieving net zero.

In 2022, the government plans to set out a regulatory approach towards flexibility service providers and other load controlling companies.<sup>1</sup> It's important that the regulation protects consumers and creates a market that enables innovation and incentivises people to engage with confidence. Citizens Advice research shows that consumers understand in principle the positive impact of V2X services, both for the energy system as a whole and its ability to save them money on their energy bills.<sup>2</sup> However, it is clear that much more work is needed to ensure people feel confident engaging with these services. Concerns include the complexity of offers, unclear costs and financial risk, being left without charge, and being locked in to unfavourable

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<sup>1</sup>[Transitioning to a net zero energy system - Smart Systems and Flexibility Plan](#), 2021, BEIS, 2021

<sup>2</sup>[Smart electric vehicle charging: what do drivers and businesses find acceptable?](#), Report produced by TRL on behalf of Citizens Advice, 2019

arrangements. It is vital that these and other risks are addressed proactively, to ensure that positive customer outcomes encourage others to adopt these technologies.<sup>3</sup>

Equally, poor consumer experiences early on will damage public perceptions of these products before they are off the ground. At the time of writing, an unprecedented number of energy suppliers have exited the market as a result of rising gas prices, with more likely to follow. We can expect this to have a significant impact on consumer confidence in the energy market. Incentivising people to engage with and take up new products and services, often from new companies they are not familiar with, will require excellent communication. Underpinning the market with clear information, protection and support is also going to be crucial.<sup>4</sup>

The Government must carefully consider how regulation and consumer protections in this market can act to promote fairness, opening up access to V2X products and services for different groups of consumers. We know that in today's energy market some consumers are more likely to miss out or find it harder to engage.<sup>5</sup> Financial situations and life circumstances will inevitably have an impact on whether people can access new technologies and be flexible with the way they use energy. Making the necessary changes to homes also varies according to physical realities (for example, living in a flat or a house) and tenure (it is likely to be harder for people who live in social or private rented homes to engage). Some of these barriers can be addressed through regulatory and market interventions, but it is reasonable to assume that some people will remain unable to engage with V2X services. It is essential that the government gives careful consideration to these consumers and they are not expected to cross-subsidise V2X services by paying for investments that do not benefit them.<sup>6</sup>

**Our views are particularly relevant in response to the following consultation questions: question 5 on enablers and incentives, question 6 on identifying barriers and question 7 on prioritisation.**

Citizens Advice has conducted research looking at how consumers engage with EV smart charging, domestic demand-side response, and smart energy products and services more generally. Our response draws on the following research:

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<sup>3</sup>[Demanding attention Managing risks with demand-side response, to improve consumer experience tomorrow](#), Citizens Advice, 2021

<sup>4</sup> [Home truths - The challenge and experience of making home energy improvements](#), Citizens Advice, 2021

<sup>5</sup> [Future for all](#), Citizens Advice, 2019

<sup>6</sup> [Rough trade? Balancing the winners and losers in energy policy](#), Citizens Advice, 2021

- **‘Smart electric vehicle charging: what do drivers and businesses find acceptable?’<sup>7</sup>** - Research conducted by TRL on behalf of Citizens Advice. TRL conducted over 90 interviews with consumers and businesses, to gain their views on smart charging. They discussed six smart charging options, including V2G services and mandatory managed charging.
- **‘Demanding Attention - Managing risks with demand-side response, to improve consumer experience tomorrow’<sup>8</sup>** - A risk register developed in collaboration with EUK and ADE. In the risk register we examined: potential consumer risks, where this is covered by legislation, work underway to address these risks, and where there are likely to be gaps in the future.
- **‘Innovation in the tariff market’<sup>9</sup>** - A discussion paper in which we analysed publicly available innovative tariffs, alongside looking at consumer cases and conducting semi-structured interviews with a wide range of energy stakeholders.
- **Forthcoming research into user-centred consumer protections for smart home products** - this includes consumer polling, a literature review looking at other markets and countries, qualitative interviews with smart energy companies, and social media analysis.

Alongside this research we have insight about people’s emerging problems, from analysis of cases received by our consumer service, and we track complaints about EVs and smart energy products on Twitter, using a natural language processing programme called Method52.<sup>10</sup> We have also drawn on our previous consultation responses.

We would be happy to discuss any of the information in this response in more detail.

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## Basic consumer protections

The government's main priority should be ensuring that basic consumer protections are in place early on, to give people confidence to engage with these new technologies. In ‘Demanding Attention’, we looked at the potential consumer risks. At the moment, demand side response and companies involved in activities like V2X often sit outside the regulated energy market and people have very limited levels of protection.<sup>11</sup>

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<sup>7</sup>[Smart electric vehicle charging: what do drivers and businesses find acceptable?](#), Report produced by TRL on behalf of Citizens Advice, 2019

<sup>8</sup>[Demanding attention Managing risks with demand-side response, to improve consumer experience tomorrow](#), Citizens Advice, 2021

<sup>9</sup>[Innovation in the tariff market](#), Citizens Advice, 2021

<sup>10</sup> More information about method52 can be found [here](#).

<sup>11</sup>[Demanding attention Managing risks with demand-side response, to improve consumer experience tomorrow](#), Citizens Advice, 2021

As the quantity, variety and complexity of V2X offers increases, so will the risk of mis-advertising and mis-information about expected revenue, savings and costs. Cases of mis-advertising and mis-information have significant potential to damage consumer confidence in this market. While some of this might be covered under general consumer law, it might not be specific enough or as easily enforceable as sectoral regulation.

A related and more general problem is opaque and complicated terms and conditions. V2X products are likely to be complicated, with asymmetric information between companies and consumers. If people are led into contracts that are unsuitable this could cause significant consumer harm, and damage public perceptions of the technology going forward. Again, while there may be some protection under consumer law, this may not be specific enough or as easily enforceable as sectoral regulation.

People should have options that will reassure them about whether they can switch to different deals and have confidence that they won't face unreasonable barriers if they choose to do so. Consumers could face technological barriers, because the hardware or software involved in their V2X services are not interoperable with other companies. There is also the possibility for consumers to be locked into long-term contracts. This could be the case where investment in high-capex V2X equipment has been made by the flexibility provider, which is paid off over the course of the contract. This is likely to be a problem if a customer's circumstances change and the product is no longer suitable.

### **People's concerns and barriers**

Our research has found that people are generally positive about the concept of V2G services, viewing them as an efficient and sustainable way to balance the grid and. People like the idea of being paid for allowing the grid access to their stored energy.<sup>12</sup>

At the same time, people also express significant concerns about it. Research participants were concerned that allowing the grid to retrieve energy from EV batteries could leave them without enough charge the next time they needed to use their vehicle. Many were also worried that planning and managing charges on this service could be prohibitively time-consuming. This was a particular concern for participants with irregular schedules.

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<sup>12</sup>[Smart electric vehicle charging: what do drivers and businesses find acceptable?](#), Report produced by TRL on behalf of Citizens Advice, 2019

Furthermore, people were concerned that if they could not adjust their charging behaviour to avoid peak times they could end up paying more. For example, people without fixed routines, such as shift workers, or people who may need to use their cars at short notice, such as families with young children. This could also be a problem in families where several people use the same car.

Other concerns related to the technology required to enable V2G services. Some participants pointed to a lack of V2G-enabled EVs on the market and expressed general concerns that current technology couldn't support this type of service. Some people also disliked the fact that engaging with these services would require specifically-enabled chargepoints, as these are generally less available and more expensive.

The majority of participants we spoke to were concerned that V2G-type services would increase the number of cycles on an EV battery, leading it to degrade more rapidly than usual. Further general concerns related to V2G services and providers of those services. Some participants pointed out that as V2G services and many providers of those services are not yet established, they feel doubtful about whether these services would work smoothly and whether they'd receive the full compensation promised for providing energy back to the grid.

### **Enablers and incentives**

Participants outlined a number of measures which could address these concerns and incentivise them to engage with V2G technologies. Most told us that they would be more likely to choose such a service if they had a good level of flexibility when setting charging preferences or requirements.

One particularly popular idea was to ensure that the EV was charged to a certain level before allowing the grid to retrieve energy stored in the battery. Others suggested that EV users should be able to request that the grid never takes more than a certain percentage of the energy in their battery, leaving them enough for an unexpected car journey. Some proposed that they should be able to switch these services on or off, or to allow the grid to draw energy only at specific times of the day.

In general there was a preference towards smart charging technologies which could minimise the need for user interaction, by enabling automatic scheduling of charging. There was also a preference for automatic systems that could set specific times when an EV was available to provide energy to the grid. It was emphasised that setting

preferences for when and how much energy could be retrieved from an EV battery should be as easy as possible if consumers are to be incentivised to use this service.

Consumers outlined several incentives which would help convince them to engage with V2G services. Many said that they would be more likely to opt for this service if they were offered a discount on a V2G-enabled EV. They also mentioned that the cost of replacing an EV battery in the event of damage or degradation shouldn't be too high. Several said they would be more likely to consider these services if there were more V2G-enabled EV models on the market.

Notably, some participants thought they would be more likely to use V2G if they had an energy storage system (ie a battery) or alternative supply (eg solar panels) in their homes. They felt that this would help them to take advantage of greater flexibility, for example they could charge their EV for free using solar energy and then sell this energy back to the grid.

### **Different people will have different needs**

Without intervention, not all people will be able to engage with V2X services to the same extent. People's ability to realise the value of V2X technologies will depend on:

- **Access to flexibility technology** - Without financial support, not all people will be able to afford the technology to engage with V2G services. People will require access to a V2G enabled electric vehicle and charger. People with additional energy technologies (batteries, solar panels, smart home platforms) will also have more ability to engage with flexibility services.
- **The ability to make changes in their homes** - For example, people without off-street parking are likely to be unable to install an EV charger, let alone one that is V2X-enabled. People living in the private rental sector will depend on their landlord to install V2X enabling technologies and landlord incentives are currently very low.
- **Households shifting their energy usage** - Some people, such as shift workers or families with young children, may need to access their EV at short notice. Some consumers in vulnerable circumstances, including people with certain physical and mental health conditions, may be unable to shift their usage to take advantage of V2X services.
- **Being confident using digital products** - Consumers without internet access, or lower confidence using digital tools, could find it more difficult to engage with V2X services. They could also be at a greater risk of mis-selling, or choosing products that are unsuitable for them. Forthcoming Citizens Advice research has

found that digitally excluded consumers are less likely to switch energy supplier, and feel less confident to do so.<sup>13</sup>

It is vital that measures are taken to ensure that as many consumers as possible are able to engage with V2X services. That said, it is likely that some people will still be unable to engage with these services. Public charging infrastructure is critical for people who are unable to charge their EV at home.<sup>14</sup> Therefore, it is crucial that the government's public charging proposals lay out the correct measures to improve this infrastructure. It's vital that people who can't charge their EV at home do not pay a premium, either financially or in the quality of their experience and access to rights, due to no fault of their own.

### **The role of tariffs in V2X services**

Unlocking the value of V2X services, is likely to depend on smart tariffs, including TOU and dynamic tariffs. In a recent discussion paper, Citizens Advice analysed publicly available innovative tariffs, alongside looking at consumer cases and conducting semi-structured interviews with a wide range of energy stakeholders.<sup>15</sup>

We found that the consumer journey can be complicated and confusing. For example, many price comparison sites do not compare EV tariffs, while those that do are not always clear about their data or what assumptions they make in their comparison. Assumptions about what consumers could save by shifting their load, or on bundled offers such as "EV free miles" add to this confusion.

In interviews with stakeholders we discussed a number of potential protection mechanisms that could be introduced to improve the consumer journey. These included:

- A standardised methodology for outcomes, like EVs.
- A standardised methodology for price comparison websites for EV and smart tariffs.
- The right to exit unsuitable tariffs.
- Complaints handling standards.
- Protections for microbusinesses.
- Protections for vulnerable consumers.

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<sup>13</sup> Forthcoming Citizens Advice research.

<sup>14</sup> [The consumer experience at public chargepoints - Citizens Advice response to DfT and OZEV consultation](#), Citizens Advice, 2021

<sup>15</sup> [Innovation in the tariff market](#), Citizens Advice, 2021

These are some areas that BEIS should consider when developing policy to incentivise consumers to adopt V2X enabling tariffs.

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