Energy for generations

# CMA electric vehicle charging market study invitation to comment -

## ESB/EcarNI

## January 2021

## Introduction

ESB is a leading Irish utility focused on providing excellent customer service and maintaining our financial strength. It has a regulated asset base of approximately €9 billion with 43% of electricity generation capacity in the all-island market. It currently supply electricity to approximately 1.4 million customers throughout the island of Ireland. ESB Group employs approximately 8,000 people.

ESB currently operates an electric vehicle charge point network in Northern Ireland using the brand name EcarNI. The network consists of approximately 150 - 22kW Fast Chargers and 17 Rapid Chargers.

In Britain, ESB currently operates an electric vehicle charge point network using the brand ESB EV Solution. ESB EV Solutions offers all electric vehicle drivers' access to our growing network of 102 Rapid Charging Points in London and 39 in Coventry City.

## Context of response:

Given ESB mainly operates in the area of public Rapid and Fast charging in the UK most responses below are related to these market segments. The focus will also be on the market in Northern Ireland with additional insights from our experience in England to date.

## Theme one: developing competition while incentivising investment

**1. How is the EV charging sector developing and how will technological or other developments (for example smart technologies) impact sector development and competition?**

The EV sector is generally developing quickly. Two inter-related factors are influencing this:

1. **Current and projected growth in EV numbers.** Electric vehicle numbers are growing significantly, and the UK government is providing certainty for those investing that there will be sufficient electric vehicles on the road in future to warrant investment in charging infrastructure now. However, there is still a long road ahead until there is enough vehicles in circulation to support charging infrastructure in all parts of the UK. There are still many locations which have relatively few EVs compared to other parts of the UK and also less charging infrastructure as a consequence, this includes Northern Ireland.

   For instance, part of London and key interurban routes may be able to fully support public charging now or in the near future however many parts of the UK such as Northern Ireland still lack the critical mass of EVs. Those investing in these areas must be willing to take a long-term view on any payback given high capital and operational costs to enter the market and likely payback period.

2. **Policy:** The UK has set a clear policy direction towards low emission vehicles and in particular electric vehicles. This recent announcement to bring forward the ban on the sale of new petrol and diesel cars to 2030 is a clear sign of the UK's intent of being a leader in this area. This is further supported by local measures such as Low Emissions Zones (LEZs) which will ensure the transition to electric vehicles in those areas over time. However, the Northern Ireland market still lags behind most of the UK. Specific Northern Ireland targets and policy for EV adoption are required for Northern Ireland to grow EV numbers while also providing certainty for charge point operators that the intention is to transition to electric vehicles over the same timeframe..

While smart charging will be valuable for home charging we believe it will have limited value to the network that ESB is rolling out given it is mainly public charging of between 22kW and 50kW. The value in this case is created through utilisation, i.e. more kWh delivered in the shortest period of time and quick turn-over of customers. We believe that in this instance any grid services or smart charging benefits will be limited.

The on-going reduction in costs of batteries and vehicle design through technology development and scale will have the greatest impact on the industry as they will increase the choice, cost and adoption of EVs. There should also be improvements in costs of charging infrastructure but of lesser scale and effect on EV adoption.

**2. How well is competition between EV charging providers working at present in the different sector segments and what are the key risks to effective competition (including any emerging competition concerns)?**

**Rapid Charging:** Given the number of charge point operators competing to deploy Rapid charging infrastructure we believe this area is highly competitive in GB. However, there are locations that are less attractive and therefore where competition hasn't emerged, and this is generally due to the lack of registered EVs and a pessimistic outlook for EV uptake in the medium term. Key to the roll out of

Rapid charging infrastructure in areas where there is less competition will be more EVs and/or government support. To date, government support has generally been through funding to Local Authorities or bodies who have then subsidised charging infrastructure in their areas through a competitive selection process. This has been quite successful to date in getting infrastructure deployed in areas of low EV uptake or support policy plans to electrify particular segments such as taxis. However, there is a risk that Local Authorities with less resources are unable to partake in such processes and then lose out. Also, it is essential that local authority initiatives are supported by policy measures to grow EV adoption and the utilisation of these charging networks – "build it and they will come" is not sufficient as a policy ambition.

**Fast Charging**: Given that many vehicles are limited in the power they can draw from Fast Chargers (22kW) the business case for these chargers is difficult. The capital and operational costs can be expensive while the potential revenue is limited given the length of time it takes vehicles to charge and quantity of electricity consumed. Research indicates that the visibility of "on-street" infrastructure has a signalling role in terms of public confidence in availability of charging options. We therefore believe that there may still be an important role for Local Authorities to provide these chargers in particular for EV drivers without off-street charging. The UK Government's "On-street Residential Charger Scheme" supports this through capital grants of up to a maximum of £7,500 per charge point.

**High Power Charging:** The Recent announcement from the UK Prime Minister in relation to EV charging infrastructure funding of up to £1.3bn. This funding spans home, public and motorway charging. It is imperative that this money is funnelled to the locations and market segments where it is most needed to ensure both the development of charging infrastructure across all of the UK and is done in a competitive and transparent manner which protects taxpayers and emergence of the market.

For instance, the intention is that the Rapid Charge Fund will enable Rapid and Ultra-Rapid charging hubs at key motorway locations. How can this be done in a fair and transparent way that encourages competition, does not forestall competition on strategically important sites and does not interfere with private investment in this area? It may be that the connections are funded by Government and kept in public or DNO Ownership and then access to those connections are put out to public tender every number of years. In this instance any process would need to balance providing sufficient time to recover the high capital costs with the risk of effectively locking out competition from sites that have benefitted from public support.3. **How can competition in the different sector segments be strengthened as the sector develops, either by building on current policies and/or through other approaches?**

Competition is already strong in the Rapid charging sector. We would advocate leaving that segment alone and let it develop itself in Britain. As mentioned above where there is a market failure or a need for specific delivery of chargers for a market segment such as taxis that will not be delivered by the market then Government or Local Authorities need to step in to subsidise or facilitate charging in their areas. Any subsidies should be provided through a competitive tender process. This will help bring about EV uptake and in time the entry of more market participants.

Northern Ireland is an example of this. There needs to be Government support to ensure that there is sufficient funding provided specifically for infrastructure in Northern Ireland. This could be through a competitive process by a government body or through local authorities. We understand that there are also circumstances where DNOs may temporarily invest in the market absent others being willing to do so. By providing the initial investment it will help facilitate the uptake of electric vehicles and so instigate the necessary market growth allowing other participants to enter when the commercial conditions in terms of EV uptake to do so improve.

4. **What are the main existing and potential barriers to entry and expansion for EV charging providers and how can these be addressed?**

Barriers to entry are low in areas where the commercial case makes sense. Almost anybody can install and operate charging infrastructure if they wish and see a business case to do so. There is evidence of this in the number of hotels and supermarkets which have charging facilities for customers and members of the public. There are many firms who will provide one-off charging solutions including payments mechanisms to single site hosts who wish to provide charging facilities in their areas.

As outlined above where barriers emerge is when there isn't a business case for the installation of chargers even in the medium term. For instance, there is nothing stopping a service station in Northern Ireland installing a Rapid charger on their site. They already have the advantage of a site with high traffic volumes and they will usually have the space to install a charger. They can apply for a new grid connection or increase the electric capacity at their site. They can then contract a provider to install the charger for them and provide a payment mechanism including contactless - which is mandatory on Rapid chargers. The next step would be to add that charger to sites such as Zapmap or use their own channels to promote it. Where a barrier may emerge is whether they believe that they can recover the costs over-time because the charger will have sufficient usage. As outlined above, we believe that the number of EVs is critical to more charging infrastructure being built. This is already happening in Britain as EV numbers are increasing quickly, it will happen in more areas as EV numbers increase.

5. **How can charge points be effectively deployed to ensure there is sufficient supply to meet future demand? What factors need to be taken into account?**

It is important that where Local Authorities are provided with funding to install charging infrastructure that they are firstly guided by government policy on how best to cater for future demand and secondly they are clearly designed to deliver customer/ EV driver demand for a reliable service – not simply the installation of a chargepoint. This should include the requirement for Local Authorities to develop strategic blueprints for their catchment areas. Northern Ireland is an ideal size to allow for a strategic blueprint which analyses the likely charging requirement in different areas due to housing stock types, traffic flows and journey types. This would help ensure that the right kind of charging infrastructure is deployed in the right areas.

**6. What incentives are there for private investment in EV charging infrastructure including within the different sector segments? How might incentives need to change for the future growth of the sector and development of competition?**

There are several ways that private companies can access incentives to invest in charging infrastructure. Many public bodies or local authorities access funding from the UK Government to deliver specific projects which they believe won't be delivered by the market. They then run a tender process for the project to be delivered by the private sector. The additional subsidy makes the delivery of the project more enticing for the private sector to then invest their money alongside it.

Charging Infrastructure Investment Fund: This is a fund which was established by the UK Government to provide public and private funding for electric vehicle infrastructure deployment. The fund is managed by Zouk Capital.

Workplace Charging Scheme: This provides funding for eligible businesses to install work place chargers.

7**. What impact does public subsidy have on private investment incentives; are there any areas/gaps where public support is most likely to be needed?**

As mentioned above the business case for Fast Charging is difficult and a subsidy will be required to deploy those chargers for the foreseeable future. Rapid charging has more potential to be commercially attractive provided there are enough vehicles to support the chargers, if not immediately then at least in the medium term. Similarly, Ultra-Rapid charging has the potential in the long term to be able to support itself however in the near-term it involves significant capital investment and on-going operational costs that would likely defer deployment until such time as there will be higher utilisation. A mechanism such as Project Rapid will be very beneficial for the roll-out of these chargers in England, however something similar should be put in place for Northern Ireland, Scotland and Wales also.

As outlined above it is essential that Project Rapid is done in a way that doesn't use public funds (and/or strategically important public sites) to give preference to a particular type of retailer such as Motorway or Service Station Operators; ideally the grid connections would be publicly owned and access to it would be put out to tender on a regular basis..

**8. What is required in order to ensure that rural / remote communities and those without off-street parking are well served by charging infrastructure?**

Given that most people in rural areas tend to have access to off-street parking where they can charge their vehicle overnight, coupled with modern electric vehicles which can travel over 250 miles means that public charging requirements will be less in this instance. However, where it is required it is unlikely to be commercially viable for some time and it may be necessary for local authorities to step in and provide charging facilities with central government funding support. There are already good examples of where the local authority has accessed central funding for a project and then put that project out for tender. This then help introduce competition to ensure the customer is getting the best possible service.

In order to ensure charging infrastructure is located where it needs to be and does not become stranded it is essential that the council understands where the demand is likely to be. This could be done by providing the public with a portal to request a charger and by analysing housing stock to understand where access to off-street parking is limited and charging may be required.

9. **What role should local authorities play to help deliver EV charging in a way that promotes competition? What support would they need?**

Please see the answer to number 8 above. Local authorities can help to deliver charging infrastructure where they don't believe it will be delivered by the market. For this to happen it is essential that they have access to central government funding. Funding for the delivery of charging infrastructure can then be dispersed to the private sector through a competitive tender process for the build and operation of charging infrastructure.

It is also essential that local authority processes as well as policies facilitate the speedy deployment of charging infrastructure. There may be opportunities for peer-learning amongst local authorities as to practical and policy supports they have provided. A common if understandable pitfall in the past has been an exclusive emphasis on charger installation – drivers require a reliable service and network – the installation is only the first step in providing this service.

**10. What can be learned from the different policy approaches taken in the devolved administrations for the EV charging market's development?**

**N/A**

## *Theme two: effective consumer interaction with the sector*

**1. What challenges or difficulties related to chargepoints might act as a barrier to consumers switching from a conventionally fuelled passenger vehicle to an EV and how might these be overcome?**

For the majority of people who purchase an EV they will do almost all of their charging at home where it will be cheapest and most convenient to do so. If an EV driver has access to off-street parking then it is usually a simple process to install a home charger. When this convenient method of charging is coupled with the driving range of the latest electric vehicles there will be little or no need to use public charging. The exception will be for long distance travel where charging will be required at your destination or from a quick top up via an Ultra-Rapid Charger on-route.

Where an EV driver does not have access to off-street parking it becomes more complex and there are a range of solutions. The local authority installs a charger near-by through the On-street Residential Charge Point Scheme, there are locally available chargers or charging hubs where they top up once or twice a week or the person has a charger installed in their workplace.

The key is that there is sufficient charging options available for a person whether they have access to off-street parking or not, and to meet the type of journey that they undertake.

There are many public misperceptions and inaccuracies around EV usage – from range, battery-life, climate and other environmental benefits which regularly recur. A general public awareness campaign which would dispel many of these myths, provide factual information and challenge mis-information (whether unintentional or deliberate) we think would be useful to drivers.

**2. What are the key challenges for consumers already interacting with the sector and how might these change over time as the sector grows?**

The key challenges for consumers who already own an EV are ensuring they have access to a charger when they need it. This will change in time as more charge points are installed across the UK. However, for most people they will use their EV for similar trips each week and will also use the same chargers regularly. The challenge then is to ensure that when they take longer journeys that they can easily find and access a charger. Websites like Zapmap are already making it easier to find chargers across different suppliers and the requirement to have contactless payment for new and replaced Rapid chargers is making it easier for consumers to access chargers. Similarly the requirement through the Alternative Fuels Infrastructure Directive for Charge Point Operators to have ad-hoc access is making it easier for consumers to access chargers.

**3. How do consumers decide which chargepoint services and providers to use? What information do consumers need to make this decision and at what stage in the decision-making process?**

As outlined above drivers generally follow similar driving patterns each week and so will tend to use similar chargers on their route or nearby should they require a charge. To decide on what charge point they need in the first place they are likely to either look to apps or the car navigation system to tell

them where the nearest charger is. Apps like Zapmap and Plugshare already pull together information from different charge point providers such as location, status and cost.

4. **Can consumers easily understand and compare charging tariffs in this sector and what barriers, if any, do they face?**

Again apps such as Zapmap allow consumers to easily find chargers near their required location and compare their costs. Where there may be some difficulty is understanding the price comparison if one provider chargers by time or a set fee and another charges by kWh. This is currently being looked at by OZEV and there are plans to consult on this soon. We would note that tariff design is a form of competition and offers choice to customers albeit such options may make choices more complex.

**5. Do particular groups of consumers face additional challenges to interacting with the sector and if so, who and why? How might these be overcome?**

Given the market is at an early stage and many standards have only been recently decided it will take time for it to move to a more streamlined and simple form. For instance, those buying a Nissan LEAF will need to understand that they have a CHAdeMO DC Rapid connection on their car and so must find chargers which are suitable for their vehicle. The market is moving towards the CCS standard rather than CHAdeMO but cars with the CHAdeMO standard will be in circulation for quite some time. It is essential that when purchasing an EV that the consumer is well informed of the capability of the car including how it charges. All of this new terminology can be dauting for consumers and is not particularly consumer friendly.

It is important that accessibility of chargers is considered at design stage to ensure they can be easily accessible by all users. This may include ensuring that the parking spaces are sufficient size and there is low kerbing.

Hybrid vs electric – see below.

**6. Are there any technological developments or tools that could support consumers to navigate the sector, for example by helping to make more informed choices?**

Clear information on vehicles performance how it charges and where it can charge is essential. Making this information easily available through a central reliable source is very important for consumer confidence.

**7. Are existing protections offered by consumer law and other measures (such as sector regulations) sufficient?**

We are not aware of any issues with consumer protection in the EV space however it might be worthwhile understanding this better as part of your study.

There does seem to be some risk in promoting customer understanding that since terms such as ‘electric’ or ‘hybrid’ are used in a general way they are open to broad and thereby confusing usage.

8. **What, if any, open data measures are needed to support consumer interaction, such as through the growth of comparison sites and apps?**

Most websites such as Zapmap already collate information from various providers such as real-time availability of chargers. It is likely that others will follow in time.

9. **What else is required to help ensure that the EV charging sector develops in a way that is responsive to consumer needs?**

This has been covered by the questions above.