



Introduction

bp's purpose is to reimagine energy for people and our planet. Our ambition is to become a net-zero company by 2050; and to help the world get there, too. We are committed to playing our part by delivering progressively more low carbon solutions and providing cleaner, more affordable, and reliable energy. We aim to actively advocate for policies that advance net zero.

As such, bp welcomes an opportunity to provide feedback on EECA's green paper on improving the performance of electric vehicle chargers.

We're on the move in Australia and New Zealand (ANZ)

We have big ambitions to provide the most convenient fast-charging network in ANZ and are beginning by deploying 200 fast charge points split evenly across both countries over the next year, all powered by 100% renewable electricity.

bp has a multi-year contract with Tritium for the supply of EV chargers, including an initial order of almost 1,000 chargers for the UK and ANZ markets. This enables bp's entry to EV fast-charging in ANZ and supports bp's pursuit of 100,000 charge points globally by 2030.

Our initial focus is to provide fast charging where it is most needed, and that's on-the-go, at our bp forecourts. We have more than 1,600 bp sites owned by bp or dealers across Australia and New Zealand.

We intend to install 200 charge points, or 100 fast chargers, by 2023 at locations that best meet the demand from our customers, fleet drivers and businesses. Of course, these sites will have all the usual amenities - lighting, bathrooms, seats, food, and coffee plus we'll offer payment through an app and later our BP Plus (AU)/BP Fuelcard (NZ) card which will cater for fuel and EV charging on one account.

These locations will feature DC chargers potentially providing speeds up to 150kW. Fast charging will allow bp customers to charge their vehicle quickly, adding 100km range in approximately half an hour.

For fleet customers, we are working with transport and fleet operators to understand their needs. We are developing a charging solution for fleet depots to include the provision and installation of charging hardware. Supporting software will help manage charging and optimise costs to support back-to-base charging at depots and at workplaces.

This is only the beginning. We intend to deliver solutions across all locations. We are now developing our strategy across at-home and destination charging, two areas that our colleagues in the UK and Europe have been delivering for some time.

bp's global experience

bp's global Electric Vehicle charging infrastructure brand is bp pulse - operating in the UK, China, Germany and the USA. We are a Charge Point Operator (CPO) in these markets.

We have more than a decade of experience in delivering charging infrastructure. We have published an ambition to install 100,000 charge points worldwide by 2030 and at the time of writing have 16,000. Our strategy is built on a belief that high-speed charging will be the key enabler of any country's electrification of mobility. In Germany, 100% of our network is made up of charge points that can charge at 50kwh or faster, and we are already installing 350kwh chargers in multiple markets. Our China business recently began operating a 'megahub' in Shenzhen with 480 charge points and 30,000 kilowatts of charging capacity.

We are installing charging infrastructure on existing bp operated forecourts, but also building dedicated EV only hubs in strategic, safe, high-demand locations with the value-add services (food & drink, toilets and other amenities) which drivers will demand.

In addition to our 'on the go' charging infrastructure, we are also installing home chargers in the UK and Germany. Most importantly, we are also working with fleets, including the UK's national postal service (Royal Mail) and Uber in multiple countries, installing charging infrastructure in their key locations.

1. Current market position and likely trends

Any commentary on EV charging policy and regulation must be set in the context of the market and likely trends that we have experienced in our global markets. While charging infrastructure – both in terms of location and different rates of charging - will always remain a mixed landscape (with drivers looking for 'different speeds for different needs'), it is highly likely that acceleration of the EV transition will be tightly correlated with the roll-out of fast charging.

- a. For those who have access to off-street parking at home, a home charger will undoubtedly be the most convenient option for most of their charging. But those who lack access to driveway home charging will not necessarily be willing or able to charge primarily on slower on-street charge points.
- b. While on-street charging has its place and may be the best option for some drivers, it has severe limitations – from low charging speeds and concerns about trailing cables where there is no dedicated charging bay – leading, to the inevitable consequence of parking-challenges and charging-challenges merging. The ability to scale up fast charging is likely to be significantly more important in supporting the EV transition. In the UK we are seeing a strong trend away from slow on-street charging, and in China - one of our more mature global markets there are already questions about whether low-speed street charging points remain viable.
- c. The trend in a number of global markets and across multiple operators appears to be for higher speed chargers in hubs, with increasing numbers of chargers per site. We expect this trend to continue.

- d. In terms of delivering the energy that electric vehicles need, rapid and ultra-fast chargers already appear to be delivering the majority of all public charging in the UK. On the bp pulse network, rapid and ultra-fast chargers make up around 30% of charge points, but account for around 80% of the energy supplied.
- e. Convenient and local ultra-fast charging will be vital for giving people the confidence to switch to electric vehicles, even if they rarely need it. There are too many 'what if' scenarios where access to slower charge points alone would not be a good enough solution for customers – for example, fleet drivers in need of a charge in order to optimise their working day, finding an EV not sufficiently charged in the morning or having had a power outage overnight.
- f. While private motorists were the earliest adopters of electric vehicles, one of the most significant sectors driving EV adoption over the 2020s will be fleets and businesses as they transition large numbers of predominantly diesel vehicles to electric. Fleet managers in multiple markets tell us that they will likely want to de-risk their charging strategy, which for on-the-go charging is likely to mean getting vehicles charged with certainty as quickly as possible, rather than facing the uncertainty of their EVs 'doing battle' with the existing fleet of ICE vehicles for on-street parking (and charging) spaces. We believe that ride-hailing and taxi companies will rely especially on this model.

2. Electric vehicle smart charging challenges

- a. bp believes electric vehicles transform mobility and contribute significantly to decarbonization goals. However, this will not happen without significant planning to support emission reductions. This must not be delayed any further.
- b. bp considers a best practice policy and regulatory framework would include the following:
 - Be market led, responding to demand and need from consumers and fleets who will want to make the transition in the right way for them.
 - Have an appropriate policy environment that stimulates the investment, ensures competition required while ensuring appropriately high standards at the right time.
 - A recognition that grid connectivity is the number one determiner of the ability of a country to roll-out electric vehicle charging infrastructure.
 - Adaptability, enabling all members of the ecosystem (from CPOs and OEMs to regulators and governments) are able to respond quickly to change and demand.
- c. At this time, bp believes based on our international experience to date that while technical standards are needed to set the foundation for planning, they must be implemented in step with the market. The more notice the market has of new standards, the more likely it is to hit those deadlines, and phased implementation periods will ensure that existing technology isn't rendered obsolete before value can be extracted from it. Despite the fast-paced nature of the market and increasing demand, supply chains are still constrained however product development can work on long-life cycle patterns.
- d. For New Zealand, and in line with what bp Australia has submitted in response to the Energy Security Board's (ESB) Electric Vehicles Smart Charging Issues Paper (August 2022), we recommend aligning with the minimum internationally proven and

demonstrated standards OCPP1.6(J), and allow enough flexibility for technology to evolve with changing customer needs. We believe that ISO15118 is still too new and mandating it today would be premature – as the industry is not ready. We anticipate it will be several years before industry is ready for this by mandate – refer to Appendix A – UK Smart Charging Implementation.

- e. Supporting customer choice and enabling interoperability is key. We caution on restricting or controlling customer behaviour too early on the adoption curve as this may discourage EV uptake. Consumers and businesses will willingly go on the electrification journey, but the scale of the transition in behaviour should not be underestimated. Policy makers should be cautious about making the transition period too onerous too soon before customers are ready to engage.
- f. Smart charging systems must allow for manual overrides as too many strict controls aimed at efficient charging behaviour will complicate the customer experience, and may have unintended policy outcomes. For example, smart charging is only as good as the internet connectivity available, something out of the CPOs control. In the event of a broadband or mobile internet failure, or areas of weak connectivity in general, customers could in some scenarios be blocked from charging due only to a mandatory 'smart' required. We expect many customers to have a 'plug in, walk away' attitude to charging, and this should be respected as a choice to encourage the EV roll-out.
- g. With grid connectivity being the number one determiner of charging infrastructure roll-out, and timely planning, coordination and connection to the networks critical we recommend that the EECA or relevant body place equal (at least) emphasis on this key enabler alongside smart charging. We would be very happy to contribute to a process identifying and anticipating demand hubs for public charging including whether or not there is adequate installed capacity at these locations and if not, what policy, regulatory or other investment incentives may be valuable.
- h. CPOs play an important role in the markets we compete in and bp would support a formal CPO role for the New Zealand market and appropriately outlining roles and responsibilities. We believe in a hierarchy of responsibilities for EV charging infrastructure and would recommend consideration to the following:
 - Charge Point Operators (such as bp) are responsible for predicting and then meeting market demand for charging opportunities;
 - Distribution network providers are responsible for delivering the connections that Charge Point Operators therefore require; and
 - the Regulator to be responsible for ensuring that distribution network providers are able to deliver the connections, in a timely, reliable and cost-effective way.
- i. We support having roaming bi-lateral agreements between CPO providers instead of mandating roaming to all parties as this increases complexity and costs to business.

bp welcomes well-designed, stable, and long-term policy frameworks to incentivize and support the decarbonization of the transport sector. Now is the time to get the regulatory framework right to support the rapid deployment of electric vehicles including the interface with the electricity system. bp looks forward to working with EECA, officials and the Government as the policy is developed and we roll out EV charging infrastructure across New Zealand and Australia.

Appendix A – UK Smart Charging Implementation

Legislation was passed in December 2021 that required private chargers (home and business below 50kw) to enable additional smart charging features with enhanced security features. The aim of the legislation is to support improved grid demand management by introducing the option for further smart functions with improved security. The regulations are commonly referred to as “smart regs”.

The new regulations have two key dates when they come into force:

- June 30, 2022: Enhanced smart features, including:
 - Randomised delay to avoid grid shocks
 - Automatic off peak charging
 - Improved data supply (to encourage demand side response)
- December 31, 2022: Enhanced security features including:
 - Cyber security software enhancements
 - Physical features such as tamper protection barriers and secured boot

For the short period that the smart regs have been available (from December 2021 up until the first enforcement date of 30 June 2022), the business has been working hard to develop technical solutions to the regulation requirements, but the demanding timelines has meant it has not been possible to achieve this in the time available.

bp’s experience has been duplicated in large swathes of suppliers, with industry intelligence suggesting that a significant number of companies were not able to meet the deadlines. Following the passage of the first date, we have not been able to identify for certain any company that has managed to comply.

The Government was forced to develop an undertakings process. This means that companies have applied to be able to continue to sell products to the market that are not compliant, but will not face fine or sanction as a result leading to sub-optimal outcomes for both industry and government.

The ability to achieve such undertakings has required a clear pathway to becoming compliant – any product that does not have a pathway to compliance cannot be supplied to the market.

The overarching challenge in the UK has been:

- Technical requirements were not published or shared with industry to give sufficient time to ensure that they were understood, could be clarified, or for unachievable technical challenges to be raised (there may be some requirements still that are not achievable).
- The implementation time frames were a political decision and did not provide sufficient time for businesses to implement necessary technical updates before they came into force. This was despite over 80% of industry making clear that proposed time frames were undeliverable (From receiving technical specifications to delivering a new product, this takes roughly 18 months, we were given under 6).
- Other areas to be wary of are around existing stock and warranty replacements. Guidance here is murky – but UK regulations required any charger replaced would have

to be with a smart charger. This has left us with a lot of useable stock and components. Compounded by the short time scales for implementation meant stock management has been a challenge.

Key learnings:

- Government should engage much more frequently with charge point operators throughout the policy development process. Relying solely on formal stakeholder consultations as the main source of input risks the development of policy which makes sense at a high level, but which lacks the necessary technical input to ensure that it is workable on the ground. Operators have a significant amount of expertise to share which can ensure policy is as strong as it can be, but currently lack opportunities to do so outside of formal “set piece” events. Policymakers should feel empowered to test their policy proposals bilaterally with operators from across the sector, even when policy may be at the ideation stage. This can be informal and need not be time-consuming.
- Government should publish draft regulations as early as possible. The procedure for passing legislation in the UK creates risks for both industry and policymakers. Industry rarely sees draft legislation before it is laid in Parliament, making it very challenging to begin preparations for compliance in advance, whereas policymakers cannot always be confident that their draft text has been rigorously tested. The circulation of draft regulations well in advance of their introduction to Parliament would give industry the opportunity to begin any necessary product development work, and allow policymakers to plug any gaps in their drafting before it is too late.
- Lead times should always be developed in conjunction with industry and strenuously tested. While it is common for stakeholder consultations to ask respondents to provide input on lead times, Government should also continue to test its assumptions throughout the policy development process - particularly when policy positions change and begin to be finalised. The time taken to deliver compliance with legislative requirements can vary significantly depending on the nature of the requirement, and depending on other regulatory obligations which companies may be facing in the UK or elsewhere. Making sure that the lead time(s) in the final legal text reflects these variables is essential for ensuring the Government’s vision is delivered.

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