

Written evidence submitted by Shell UK (EVP0027)

Shell UK Limited¹ (Shell UK) welcomes the opportunity to submit written contributions on the implications of accelerating the shift to zero emissions vehicles and the potential for introducing road pricing.

For more than 50 years, Shell UK has explored for and produced oil and gas in the North Sea. Today, we are one of the region's biggest producers, supplying around 10% of the UK's total oil and gas needs. Shell UK now owns, or part owns, more than 50 North Sea fields, 25 platforms and one Floating Production, Storage and Offloading unit (FPSO) operated on our behalf. Perhaps the most recognizable face of Shell UK is the network of over 1,000 Shell-branded service stations. Here, we welcome around five million customers every week.

Shell UK supports the UK's net zero goal and recognises the requirement to reduce oil and gas consumption to meet it. Different fuel and vehicle technologies will be needed to meet demand for transport, while reducing air pollutant and CO₂ emissions. This includes more efficient fuels and lubricants, paraffinic fuels as well as lower-carbon alternative fuels, such as biofuels, battery electric vehicles and hydrogen. Shell is active in the development of all these fuels and technologies for the transport sector.

Shell UK supports the Government's increased ambition in the deployment of electric vehicles (EVs) in the UK, and the announcement to phase out the sales of new petrol and diesel vehicles in the light duty segment by 2030. We are delivering electric vehicle charging at home and workplaces (New Motion), and on the move (through the Shell Recharge network at Shell service stations and New Motion's network). In January this year, we have further announced the acquisition of ubitricity, a leading European EV on-street charging provider.

For the purpose of this written submission, Shell UK's response will first address the policy measures needed to deliver a 2030 phase out of petrol and diesel vehicles, including the development of a fiscal system, e.g. vehicle and road tax, that drives road transport decarbonisation, and secondly the approach to decarbonise those segments of the transport that are harder to decarbonise, such as heavy-duty transport.

1. Accelerating the shift to zero emission vehicles

Setting a date for phase out of new ICE sales in this segment provides the market with policy certainty and allows it to increase the current pace of EV growth which must rapidly accelerate to ensure enough progress is made in transport decarbonisation to meet the UK's 2050 net zero goal.

Setting a 2030 phase out date for these vehicles must also be supported with a robust and comprehensive package of enabling policy measures to ensure industry and businesses can prepare to deliver the required power and infrastructure needed to support fully electrification of light duty vehicles. Strong incentives are equally needed to help consumers to choose EVs.

While setting a date for the switch to EVs is an important first step and a strong signal, only through a robust plan to make the transition fair and deliverable will the transition be delivered.

As the UK starts to consider the potential longer-term impact to the economy from the COVID-19 pandemic, the development of a solid and comprehensive package to support an effective and steady increasing rate of adoption of EVs represents an opportunity to direct resources, public and private, to support both economic recovery and energy transition. In the absence of a focused effort, consumer behaviours may be slow to change, potentially losing years in an already challenging time frame for meeting the UK's net zero target and increase the economic and social cost of delayed action on climate change.

Wide access to a reliable charging network will be critical to have more drivers choose an EV. Bringing forward investments in EV infrastructure could create demand and jobs while also enabling the faster take-up of EVs. Simultaneously, public incentives are still needed so EVs can become a more attractive and affordable vehicle option for consumers.

Measures by government and others to achieve the earlier phase out date

Phasing out the sales of new, light duty ICEs by 2030 requires the development of a comprehensive policy framework. Consistent and consistent support from Government across the different sectors could help to create optimal business environments for car manufacturers, power sector participants, and EV charging providers. Simultaneously, consumers are expected to need stronger incentives that drive longer term confidence and encourage the use of EVs.

Progress in EV technology and infrastructure is crucial to continued growth in EV use. Shell believes that policy support should focus on the system (vehicles, power and infrastructure) and on meeting consumer needs.

Support for EVs

In order to meet a light-duty ICE sales phase out in 2030, the CO₂ emissions standards for these vehicles should be progressively tightened over the coming decade and set to zero in 2030. This would provide an appropriate trajectory to ensure the UK is on track to a full phase out date, and to ensure car manufacturers produce sufficient quantities of EVs for the UK market. These standards need to align with the UK's net zero trajectory and be achievable with multi-year targets and realistic implementation.

From a demand side perspective, the Plug-in Car Grant has been one of the most important incentive measures for consumer uptake of EVs. It was encouraging to see its extension until 2022. To build the longer-term confidence and predictability needed to 2030, the Government should further extend these grants, and set a clear timetable for a gradual reduction in grant levels. This grant should be replaced over the longer-term with an incentive scheme to strengthen the appeal of EVs, through better coordinated taxation and road use charges.

Fuel duty and vehicle excise duty (VED) are also important policy levers to deliver decarbonisation of transport and could be adjusted to effectively support consumers in

switching to EVs. Linking the duty rates to the carbon content of the fuel would help incentivise the switching to lower carbon fuels. Changing the fuel duty to a carbon basis could be combined with a change to the VED, currently paid on an annual basis. By linking the level of taxation to the weight and number of miles driven per year, the Government would create a further mechanism to switch road transport to cleaner forms of travel.

The Government has further opportunity to incentivise low-carbon transport by revisiting the impact of the current VAT rates applied to users of charging stations for EVs. Currently the classification of EV charging station use is not clear in the UK. There is the option for the UK Government to make it clear that firstly the EV charging can fall under the *de minimis* thresholds for the supply of electricity and therefore subject to VAT at the reduced rate of 5% and secondly that climate change levy (CCL) is not applicable under the same *de minimis* test. This will provide a clear VAT benefit as compared to fuels for ICE car users where standard rated VAT of 20% would be applicable.

Driving consumer's confidence in charging infrastructure

As already mentioned, driving consumers' confidence is one of the most important elements to building demand for EVs. Consumers need to feel confident they can travel to their destination in an EV and be informed of their options. The EV Energy Taskforce report² published earlier this year demonstrated how EVs can be effectively integrated with the energy system and how this can be done in a way that ensures the needs of the consumer are met.

Having confident and informed drivers will require clear information about the publicly accessible charging network. Consumers need access to a wide and reliable EV charging network, but they also need easily accessible and updated information about where to charge, local charging points capacity and whether those chargers are functioning.

Charging an EV has to be simple, straightforward and convenient, wherever drivers are. They need to easily be able to find, access and pay for charging at home, at work and while travelling, with minimal extra effort. Drivers should be able to charge their car at any publicly available charge point, and charged for the electricity they use in a transparent and fair way.

Interoperability and roaming should be supported as it will improve EV drivers charging convenience by allowing them to use their preferred Mobility Service Provider (MSP) to access and pay for charging independent of the owner/operator of charge posts. However, roaming access between networks should be based on commercial agreements, rather than being mandated, to allow the commercial value of the installed assets based on location, extensiveness of network to be properly accounted between parties.

Government funding for rapid charging, as well as on-street charging should only be allocated to fund infrastructure that is available to any consumer on a non-discriminatory basis. In addition, funding should be contingent on allowing all consumers to charge their vehicle, regardless of the equipment used or charge point owner.

Finally, the adoption of smart charging technologies for certain charging options, such as home, offices and longer duration destination charging options, will also ensure that energy can be provided at the lowest cost to the consumer.

Support for EV charging infrastructure

The development of an appropriate and reliable, publicly accessible EV charging infrastructure network is critical to ensure consumer's confidence in EVs. As noted, it is expected that most EV charging will happen when the vehicle is parked, at home overnight or during office hours. However, public EV charging will need to continue to grow to meet charging needs while on the go, during longer journeys, and for drivers who don't have access to private charging.

Government support for EV charging infrastructure should consider the need to rapidly grow the network and provide the scale needed for a mass adoption of EVs. To this end, funding should be allocated to projects that can deliver multiple charge posts and develop infrastructure at scale.

Government support for the EV charging sector should focus on locations where commercial provision is not currently viable. This includes primarily rapid chargers. Shell is already supporting the development of a nationwide rapid charging infrastructure. In order for this charging option to benefit as many consumers as possible, funding allocated as part of the Rapid Charging Fund should be made available for charging at locations adjacent to the strategic road network, and not only to Motorway Service Areas (MSAs). It is also critical that government funding is allocated to multiple EV charge post operators at MSAs, supporting the development of a fair and competitive market that ensures the best experience and pricing to consumers.

Going forward, Shell would also encourage Government to expand funding for rapid charging to other locations, beyond the strategic road network. This can include service stations in different locations which could also become an important rapid charging destination, as well other charging destinations such as supermarkets. Funding support for grid connection upgrades could be key to derisk investment when installing charge points in these locations too.

Finally, we urge Government to take action to address the administrative barriers EV charging installers face regarding power upgrade connection processes. Funding support and a simplified standardised connection process across DNOs would facilitate and accelerate the infrastructure development.

Flexible power markets and smart charging

Balancing supply and demand and ensuring the power networks are able to cope with mass EV adoption requires a smart, flexible energy system. Energy UK's paper, 'Delivering on the Potential for Flexibility'³ outlines an industry consensus on what needs to happen to create flexible markets, which is expected to be essential in meeting any phase out target. This includes:

- Appropriate, clear, and stable market mechanisms;

- Regulated monopolies, such as DNOs, being barred from participating in ancillary service markets, just as they are from power markets. This should include an exclusion from managing EV charging services;
- A renewed plan on how to deliver a smart, flexible energy system.

As previously noted, the deployment of smart charging technologies is a key factor for the sustainable growth of EV uptake. It is therefore essential that Government commits to a consumer-centric, market-based approach to smart charging to ensure that providers are given the freedom to innovate and come up with compelling, easy to use options for their customers. Mandating a single solution for smart charging is not optimal. Instead, setting outcome-based requirements are expected to help balance cyber security and grid protection risks, while meeting innovation and consumer uptake objectives.

2. Embed a sectoral approach to deliver net zero emissions in hard to abate sectors, such as heavy duty transport

Reaching net zero in the UK will need unprecedented co-operation and action throughout all sectors of the economy, especially in the hard to decarbonise sectors, such as heavy-duty transport, but also aviation, maritime, and energy-intensive industries. Success in delivering the 2050 net zero goal will rest on progress made on an enabling policy framework which includes a sectoral approach as a guiding principle to achieve progress particularly in the hard to abate sectors in transport.

The lack of technology readiness for low carbon options for long-haul heavy-duty vehicles (HDVs) is one of the main challenges for the sector to deliver net zero emissions.

Currently neither battery nor hydrogen technologies are suitable or available at acceptable costs for long-haul HDV usage. Battery technologies need to increase energy density and recharge rates – for HDVs large batteries (typically 500 kWh or more) and fast recharging (350 – 1,000 kW) are needed to minimise down time in operation. Without hydrogen or BEV powered HDVs on the road today, there is as yet no incentive to build the needed fuel supply infrastructure or, in the case of hydrogen, scale up production as needed to drive down costs.

The UK Government's approach to decarbonise the transport sector should include policies that can foster this cooperation through measures that create sectoral demand for low carbon energies, such as renewable power, hydrogen and biofuels; in synchronisation with support for investment in supply and infrastructure.

Below we offer some examples of this sectoral approach for heavy-duty transport

Shell UK believes that the pathway for net zero in commercial road transport in the UK could include:

- HDV and high distance usage parts of MDV sector transition to hydrogen. Hydrogen is not only a zero-CO₂ tailpipe emissions fuel; it can be refilled in vehicles at a similar speed as today's liquid fuels and provide similar range. Based on today's

available technology this is a clear advantage over battery electric powertrain for which energy density, battery price, recharging time and vehicle range are seen as constraints by hauliers. Furthermore, hydrogen can be produced from renewable electricity in fully scalable/decentralized production units and integrated into other hard-to-electrify sectors.

- Low mileage parts of the MDV sector to transition to Battery Electric Vehicles (BEVs). For vehicles on routes of less than 200-300km a day, and especially those on fixed routes like buses, BEV offers are already starting to offer workable solutions. Here the range and haulage demand and lower grid loads make EV a suitable solution.
- Diesel is likely to continue to anchor the system up to 2050. Reaching net zero by 2050 in the UK needs both a switch to zero emission vehicles (ZEVs) for all new vehicle sales as early as possible, combined with an extensive use of lower-carbon liquid fuels for the legacy fleet. If all new HDV sales in Europe were to be non-ICE from 2040 onwards, then 25% of the HDV on European roads in 2050 would still require diesel, as their average age is 12.4 years. As a result, liquid biofuel mandates will still be needed for this segment of road transport along with considerable offset volumes to address remaining CO₂ emissions in the legacy fleet.

A sectoral approach for heavy duty transport will need to set out a clear pathway on how to achieve net zero emissions. This would include a trajectory for tightening vehicle CO₂ standards so that vehicle manufacturers can design towards them, infrastructure build can commence, and fuel suppliers can invest to match growing demand for the volumes of clean energies likely to be required. The following policy options could be considered:

- **Setting a heavy-duty vehicle CO₂ emission performance standard to be zero by 2040**, and, for the period prior to 2040, provide incentives for customers to buy low and zero carbon vehicle.
- Ensuring that the **Road Transport Fuels Obligation (RTFO) supports all fuels which can reduce CO₂ emissions**, such as renewable electricity, advanced biofuels (liquid and gas), synthetic fuels made from recycled wastes, and clean hydrogen. Fuels legislation should be consistent and support CO₂ emission performance standards for vehicles.
- **Aligning the taxation of energy products and electricity with CO₂ emission standards** so that it supports net zero objectives and the use of lower carbon energies; and develop a user-based charge based on CO₂ emissions and km driven across fuel duty and VED.
- For hydrogen applications in heavy duty transport, **incentives for hydrogen fuel cell vehicle technology and fuelling infrastructure should be closely coordinated**. The UK government could support this by forming a UK Hydrogen Partnership involving infrastructure providers, investors, vehicle manufacturers, fuel suppliers and government. Such a partnership could include a clear funding commitment from government, backed with firm targets from business to deliver site and vehicle numbers. It is likely, nevertheless, that infrastructure investment will need to run

slightly in advance of fleet transition – hauliers, etc. cannot risk being unable to make deliveries, so fleets will only be switched over when reliable infrastructure is in place.

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Endnotes

¹ The companies in which Royal Dutch Shell plc directly and indirectly owns investments are separate legal entities. In this submission “Shell” and “Shell Group” are sometimes used for convenience where references are made to Royal Dutch Shell plc and its subsidiaries in general.

² <https://www.lowcvp.org.uk/projects/electric-vehicle-energy-taskforce.htm>

³ <https://www.energy-uk.org.uk/publication.html?task=file.download&id=7421>