September 2020

Consulting on ending the sale of new petrol, diesel and hybrid cars and vans

Connected Places Catapult response

Introduction

Given the government's intention to advance the ban on new petrol and diesel car sales, the Office for Low Emission Vehicles (OLEV) is seeking opinions on how this can best be managed to ensure contribution to net zero targets. The following is the Connected Places Catapult's view, combined with the responses to a survey we conducted, on this matter.

Scope of CPC response

The acceleration of the Internal Combustion Engine (ICE) vehicle ban is of course a very complex proposal. Complexity comes from the technology involved, the ecosystem of stakeholders and the policy pressures to name just a few. In some of these areas there will be many organisations better placed than us to respond e.g. OEMs, national grid, infrastructure providers etc. In order to add our own value to the conversation we have opted to focus on the impacts on companies involved in service provision beyond OEMs, ensuring the market can grow in sync with the increased supply of EVs on UK roads.

Contributors to response

In order to build the views laid out in this document we conducted a survey of a number of relevant organisations from across the UK. These included companies from a range of industries and points within the supply chain so as to build a balanced view. Throughout this document there are a number of text boxes showing direct quotes from those organisations surveyed. Our thanks go to the following companies who supported us through this survey *(this is a small section of the total participants, some of whom preferred not to be named)*:

- Eloy
- Cyclopic Ltd.
- Milton Keynes Council
- Ember
- Aha Retail Partners Ltd.
- Vellity

1 Phase-out date

We know that climate change is the most pressing environmental challenge of our time, and that transport has a large role to play in meeting our net zero targets. We also know that air pollution is causing many health problems, and generally making our towns and cities unpleasant.
One of the few positive impacts of COVID-19 has been the reduction in pollution, which has been appreciated by many, but as lockdown ends and cars return it seems it will be a momentary respite. Anecdotal evidence of the real impact of air pollution is highlighted by school children from Tower Hamlets, who discuss difficulty they have breathing when walking to school, as featured on the Clean Van Commitment website:

https://www.globalactionplan.org.uk/clean-air/clean-van-commitment

"In London it is our ambition for every one of our drivers to use a full electric vehicle by 2025"

Some respondents have put forward their own plans with ambitious timelines, while being clear that collaboration with government and other partners is still essential.

We also believe that the UK is well placed to lead the world into a greener future. With our world leading universities and technology companies, innovation is at the heart of what we do. There could be significant export opportunities associated with developing innovative solutions in the domain of 'creating an excellent EV user experience'. More detail is provided in the Connected Places Catapult / Digital Catapult report on this subject, which can be downloaded here:

https://cp.catapult.org.uk/2019/07/21/fleet-operators-key-to-electric-vehicle-tipping-point-in-the-uk/

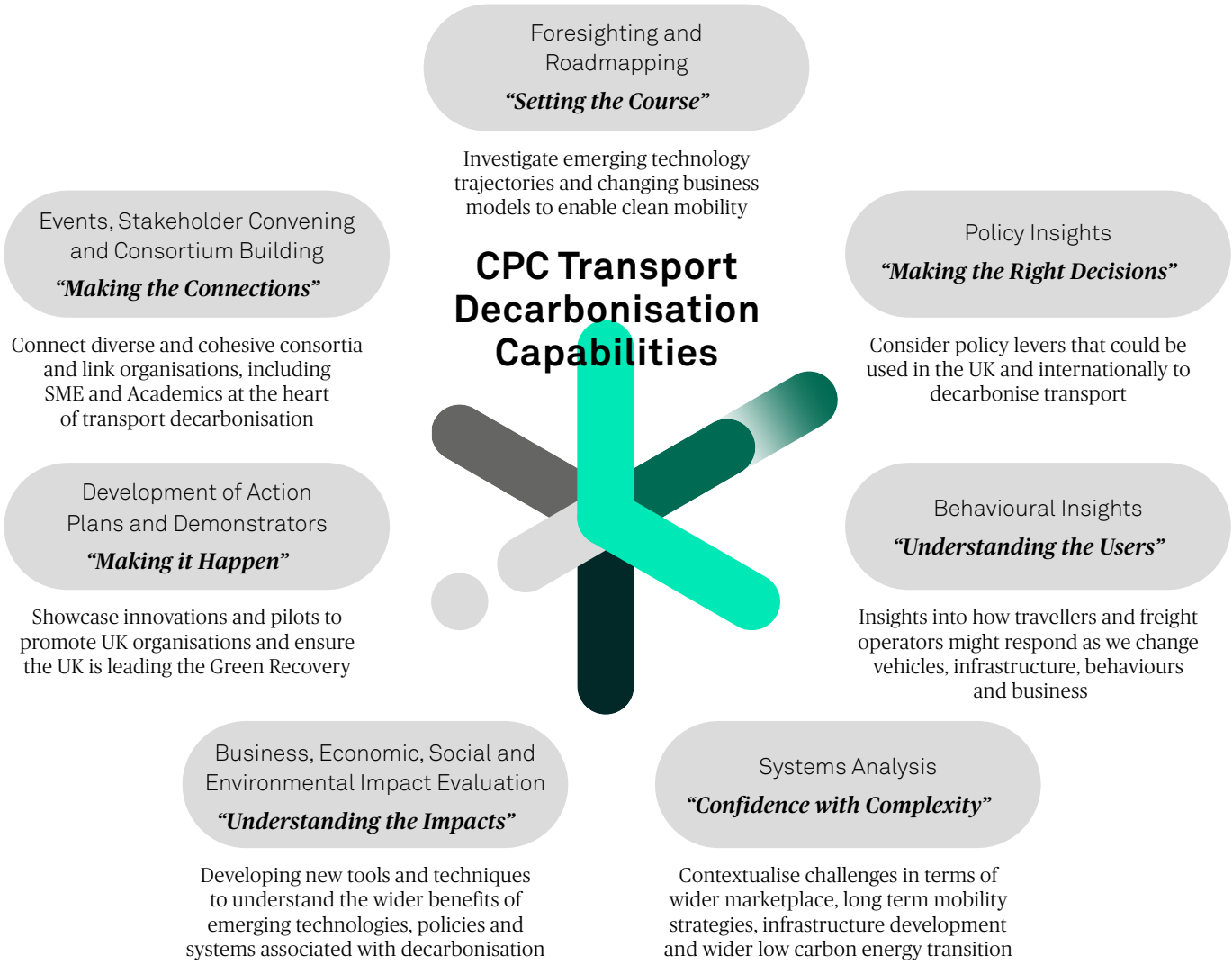
Phasing out ICE vehicles sooner rather than later is positive for both of the above issues. It forces the vehicle manufacturing industry to adjust quicker than it might do otherwise and sends a clear message that change is on the way, which provides organisations with confidence to invest in new technologies.

Reducing emissions from vehicles is just one part of the solution. This needs to be coupled with a much wider set of measures designed to reduce the number of vehicle miles travelled. This might include promotion of alternatives to private car use, such as major investment in walking and cycling infrastructure and initiatives, enabling people to work from home. There are also measures that could reduce the environmental impact of freight movements.

At least one respondent has already begun to take action towards electrification:

"We have developed a mobility strategy which places electric mobility at the forefront and invested in significant charging network"

The Connected Places Catapult are well placed to assist with these challenges. We offer the following capabilities, which can help '**Connect,** Spark, and Accelerate' within Transport Decarbonisation:



However, the sooner the phase-out date, the more disruptive the impact will be on the economy, businesses, private households etc. Survey responses suggest that the proposed 2035 date is about as early as the majority of our respondents believe the ecosystem can be prepared for.

One company surveyed has already been operating a fully electrified fleet of 22 vehicles in another country for three years. They are researching the positive and negative impacts to learn what will work here in the UK.

2 Definition of what should be phased out

The CPC believes that the ban should include both heavier vehicles and hybrids.

There are of course additional challenges surrounding electrification of larger vehicles. Whilst this is true, in seeking to achieve net zero targets, we cannot shy away from the greatest challenges. The Advanced Propulsion Centre roadmaps are proposing to treat light commercial vehicles and passenger vehicles the same owing to their similar duty cycles. The Connected Places Catapult, would agree with this approach, and seek to include vans up to a certain weight limit in the ban, although care must be taken not to create perverse incentives for freight companies to invest in heavier vehicles that are not zero-emission where they would normally only require smaller vehicles.

Hybrid vehicles are not zero emission vehicles and are at best, a transitional powertrain to full battery electric vehicles. Sales of fully battery electric passenger cars are increasing faster than those of plug-in hybrids, suggesting the 'transition' is not required, and the ban should apply to all non-zero emission vehicles. However, for heavier vehicles in particular and for certain use cases for which pure battery electric may still not be suitable, there may be benefits in using hybrids to increase the number of zero-emission vehicle miles.

3 Barriers to achieving the above proposals

Barriers to unlocking opportunities

Whilst few explicit threats were identified, there was concern regarding a number of barriers that could prevent exploitation of the opportunity including:

- A large number relating to charging infrastructure.
    - **Investment/availability** - a lack of charging infrastructure is seen as by far the biggest barrier to realising the full value of this change.
    - **Complexity of installation** - those companies actively trying to install charge points found that issues around planning, communication with the grid and finding suitable locations were significant blockers. The implication of combining these first two points is concerning, it would suggest that there is a lack of investment in charging infrastructure, and where companies are willing to invest, they are struggling to overcome other hurdles.
    - Regulation for charging infrastructure was commonly cited as an issue.
- Others cite a lack of incentivisation for large business to make the switch, corporates will be resistant to change unless given reason to adapt.
    - There is a clear perception that large corporates may be able to create artificial barriers or lobby in order to undermine the 2035 target. The implication is clearly that we need to win support from large corporates in order to avoid this resistance.

The Connected Places Catapult consider that infrastructure is a key barrier. It is all too easy to suggest that we simply 'need more infrastructure' without clarifying what exactly we need or where we need it. We are unlikely, certainly in the near future, to install publicly accessibly charge points in every parking space in the UK, and even if we could there would be no demand to justify the investment. There are modelling tools available that will take some of the guess work out of these decisions and enable more efficient development of infrastructure. Working with industry and government to support the development of these new tools is an area where CPC can provide leadership to support the work required to bring products of this type to market.

One respondent pointed to the importance of managing the shift in an inclusive manner.

"We are working in various areas to ensure that EVs are designed with disabled motorists' requirements in mind and their needs are not forgotten".

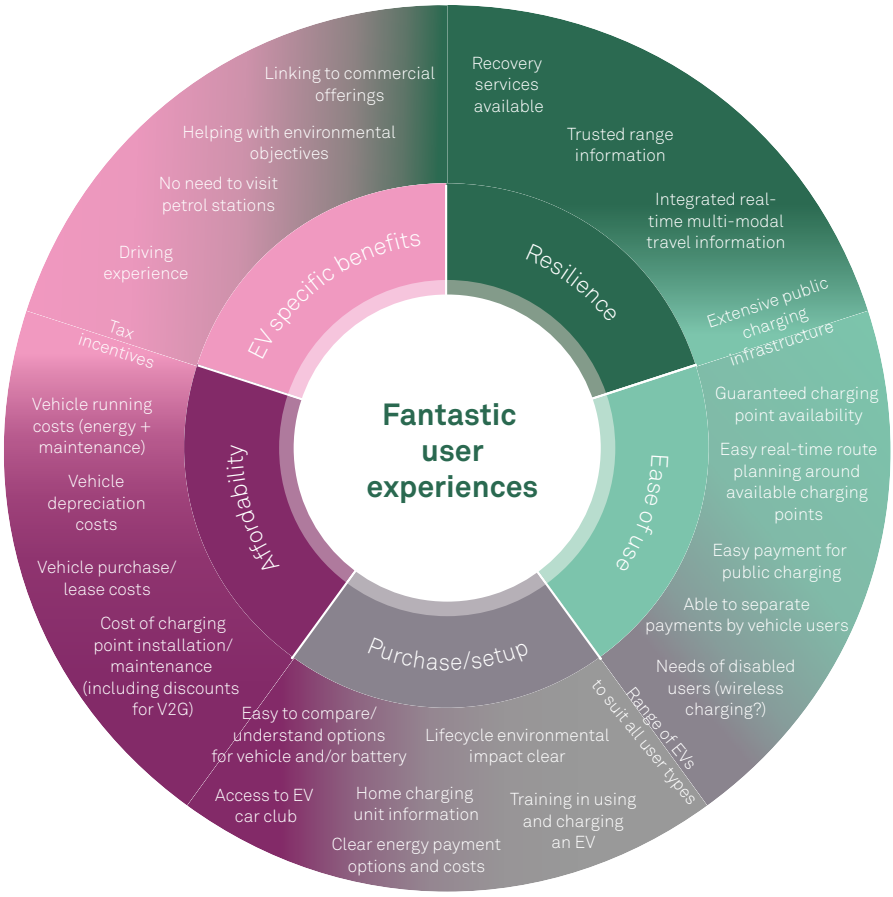
Ultimately, we believe the crux of the issues is user adoption of a new technology. There is no getting around that changes of this magnitude can cause disruption and negative impacts on people's working and personal lives. The transition will be accepted far more smoothly if we take a human-centred approach throughout. This means high levels of charging infrastructure coupled with easy access to information regarding availability. It means clear messaging around phase out plans to avoid confusion and anxiety for the public when making purchasing decisions. It means incentivising a transition to EV with the carrot instead of the stick to get as large a proportion of the country to choose to switch to EV in the early 2020s because of the benefits it can offer as opposed to waiting until they are forced into a decision in 2035.

As set out in our report issued last year with Digital Catapult which can be downloaded here:

https://cp.catapult.org.uk/2019/07/21/fleet-operators-key-to-electric-vehicle-tipping-point-in-the-uk/

There are five key areas to address in terms of barriers relating to user experience that, if overcome, will encourage transition to EVs. These include:

- Ensuring EVs are resilient for a high proportion of journeys,
- Making them easy to use,
- Creating a seamless purchase / set up experience,
- Ensuring they are affordable,
- Promoting EV specific benefits.



4 The impact of these ambitions on different sectors of industry and society

Threats and opportunities

Almost 90%* of surveyed companies saw this as an opportunity with the remaining organisations seeing it as both a threat and an opportunity. Importantly, none of the surveyed companies saw the proposed acceleration exclusively as a threat.

*

90%

Broadly speaking, the opportunities that respondents identified fall into two main areas, those specific to EV and those related simply to fleet renewal.

Those related specifically to EV include:

- Lack of knowledge/experience amongst customers presenting an opportunity to sell expert consultancy services or offer greater value as service providers (e.g. fleet managers) by bringing their knowledge to the table.
- Lower running costs and simplicity of operations. This will of course benefit end users, but fleet operators will also benefit when offering solutions such as 'full-service packages' including maintenance, replacement etc.
- A range of increased demand for specific products/services related to the companies e.g. high-power wireless charging or specific software packages.

The impending ICE ban will lead to a greater number of new vehicle purchases than usual in the coming years, for those companies whose business models depend on fleet renewal this is clearly a significant opportunity. Even companies completely agnostic to drivetrain being ICE, electric hydrogen etc. stand to benefit from the type of increased fleet turnover that our respondents suggest.

"How will the drop in fuel taxes impact infrastructure that is currently (partially) funded through such taxes?"

Respondents, largely positive above the proposed change, identified only a small number of threats including:

- Lack of early ambition and forethought leads to a period of slow action followed by a dramatic acceleration as we approach the proposed cut-off date. This will make it difficult for companies to operate and grow during the early stages of this process and threaten to overwhelm them in the latter phase.

- Concerns over how the government will replace the lost fuel tax revenues and what a temporary shortfall will mean for investment in infrastructure.

We need to work hard to help vehicle manufacturers adapt to the challenges of ramping up supply of electric vehicles, across a range of models, which can help bring the price down and stimulate the second hand EV market, making the transition accessible to far more people. Investment in key supply chain bottlenecks is paramount, as is continued investment in EV charging infrastructure.

We must also be careful to not exclude or disproportionately impact lower income groups in society. While ICE vehicles can be significantly cheaper to operate and maintain, for the near future at least, their initial purchase cost is far greater than for a similar ICE vehicle. This can partly be overcome through a variety of grants to incentivise EV purchases and to reduce the upfront cost of making the switch. Additionally, there may be potential to drive this change through customer education. If consumers are aware of the long-term savings, they may be more willing to accept the initial premium.

Understanding the impact of the proposed changes on jobs and the broader supply and demand of skills is no small task. The CPC is currently working with DfT on a report aimed at exploring these future drivers of change in the skills market and the implications for the UK. The aim of the Future of Transport Skills project is to identify skills needs in the UK that are arising due to emerging trends in the transition to zero emission vehicles (also including connected and autonomous vehicles, emerging aviation). The outcome of the study will be evidence to enable the funding of skills interventions to be aligned with the medium term needs.

“Cheaper, simpler operations, less maintenance, better planning, better for the environment, happier staff”

One company listed the industrial and societal benefits that they have already demonstrated.

5 What measures are required by government and others to achieve the earlier phase out date

We asked what the single most important thing government could do was, the below is a selection of responses:

"Incentivise industry to innovate and solve some of the challenges"

"Funding continuity – Proof of concept to pilot to scale needs to be a continuous process and not independent stages"

"More positive and stringent policy and rules to help the electrification options"

"Provide clear, explicit and succinct legislation"

"Set strict goals for heavy duty vehicles electrification"

"Provide clear guidance as early as possible"

"Make R&D funding more accessible"

"Maintain and/or improve existing subsidies for EV and charging"

"Target EV charging infrastructure where it will have the biggest impact on emissions and therefore generate the best return for the public purse e.g. professional drivers"

"Policies and regulations should also recognise the embedded carbon associated with vehicle manufacture"

"Rethink the concept of car ownership and support it with legislation"

Interventions

The CPC support the themes of DfT's emerging Transport Decarbonisation Plan. Alongside reducing emissions by switching to zero-emission vehicles, we should consider measures for encouraging mode shift and reducing travel demand and vehicle miles travelled. For example, a step-change in cycling infrastructure provision could be a cost-effective way of helping to provide transport options for many people.

The CPC's view is that, in addition to that set out previously in this response, Government needs to take steps to tackle issues particularly at the heavier end of the vehicle market where there remains uncertainty as to which way technology will develop. As part of the TranZET project, CPC are developing business cases for investment in large scale technology demonstrations, involving both vehicles and infrastructure, to help prove the reliability and operational suitability of zero-emission long-haul heavy goods vehicles.

Industry needs confidence to invest in technologies which will be supported by Government. Part of that support involves investment in infrastructure provision. Central Government and Local Authorities need to work collaboratively with the private sector to ensure the role out of cost effective EV charging infrastructure can happen quickly and intelligently, prioritising strategic sites, and providing charging options particular where there is no business case for private sector investment alone. Equitable charging access should be provided for all. To help address this need, Connected Places Catapult submitted a proposal to Innovate UK in May 2020 to address the concerns of Local Authorities and help meet Innovate UK's ambitions in this area.

It may be possible to support multiple approaches, for example where different technologies suit slightly different use cases. This ultimately provides the end user with choice.

Regional differences

It is important that the approach taken by the government considers regional differentiation. In terms of vehicle provision, charging, energy requirements etc. it is inevitable that the centres of major urban areas such as London or Manchester will differ significantly from those of small rural villages. In recent years we have simply looked at these differences in terms of where EV adoption is and isn't feasible, a blanket ban however means we can no longer do so. We will need to find a way to enable electrification across all regions, doing so requires this differentiated approach. It is unreasonable to except a single central government authority to be able to understand and provide for subtle differences and nuances between specific regions. As such, government and industry alike should strive to empower decision making at a local level.

Despite this need to empower local decision making, we also need to ensure interoperability at a national level. Data must be accessible across companies and authorities and standards must be employed to ensure consistency. It is imperative that from an end customer point of view, there is no significant difference noted between regions and providers (beyond the obvious areas of competition such as pricing).

6 Conclusions

Overall, the view that we take from our own engagements with industry is that:

- Companies already have ambition to move to EVs;
- Some companies are already trialling EVs; and
- Some companies are developing their business strategies around EV use.

However, there is a need for the government to support this transition with investment, incentives, guidance and changes to policy and regulation to make this transition both smoother and quicker than would otherwise be the case.

CPC recognise the challenges with this transition. Our own strategy to support decarbonisation is closely aligned with the governments aims in phasing out ICEs. For OLEV, our capabilities and experience in this area also mean that we are an excellent position to support both OLEV and industry make this transition. Following the completion of this consultation exercise CPC would be happy to discuss ways in which we can support OLEV drive the transition to achieve the required outcomes and timescale.

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