



FULL THROTTLE

DRIVING UK AUTOMOTIVE
COMPETITIVENESS

EXECUTIVE SUMMARY



"I can walk along the street, walk past people's houses and see our cars on the drive. And when I'm there [at my job], sometimes I look at what's going on and the people I work with, and some of the things we do, without a doubt I'm proud to be working there, I honestly am."

Section manager, late 40s, Derby

"It's great for the local economy. Logistics, suppliers, you name it – it's a knock on effect for thousands and thousands of people. It would be devastating if anything happened to it."

Engineer, early 40s, Birmingham

The Government has set ambitious goals to achieve Net Zero, while simultaneously levelling up the country through spreading skills, wealth and opportunity. The automotive industry is at the centre of both goals. Moving away from the Internal Combustion Engine (ICE) is an important next step in the UK's path to Net Zero, and the UK has set one of the most ambitious targets for the phasing out of ICE vehicles, with an end of sale date for passenger cars from 2030. Within the automotive industry, firms employ skilled workers of all kinds – from PhDs in design to apprenticeships and BTECs in engineering – in places where genuinely skilled jobs are few and far between.

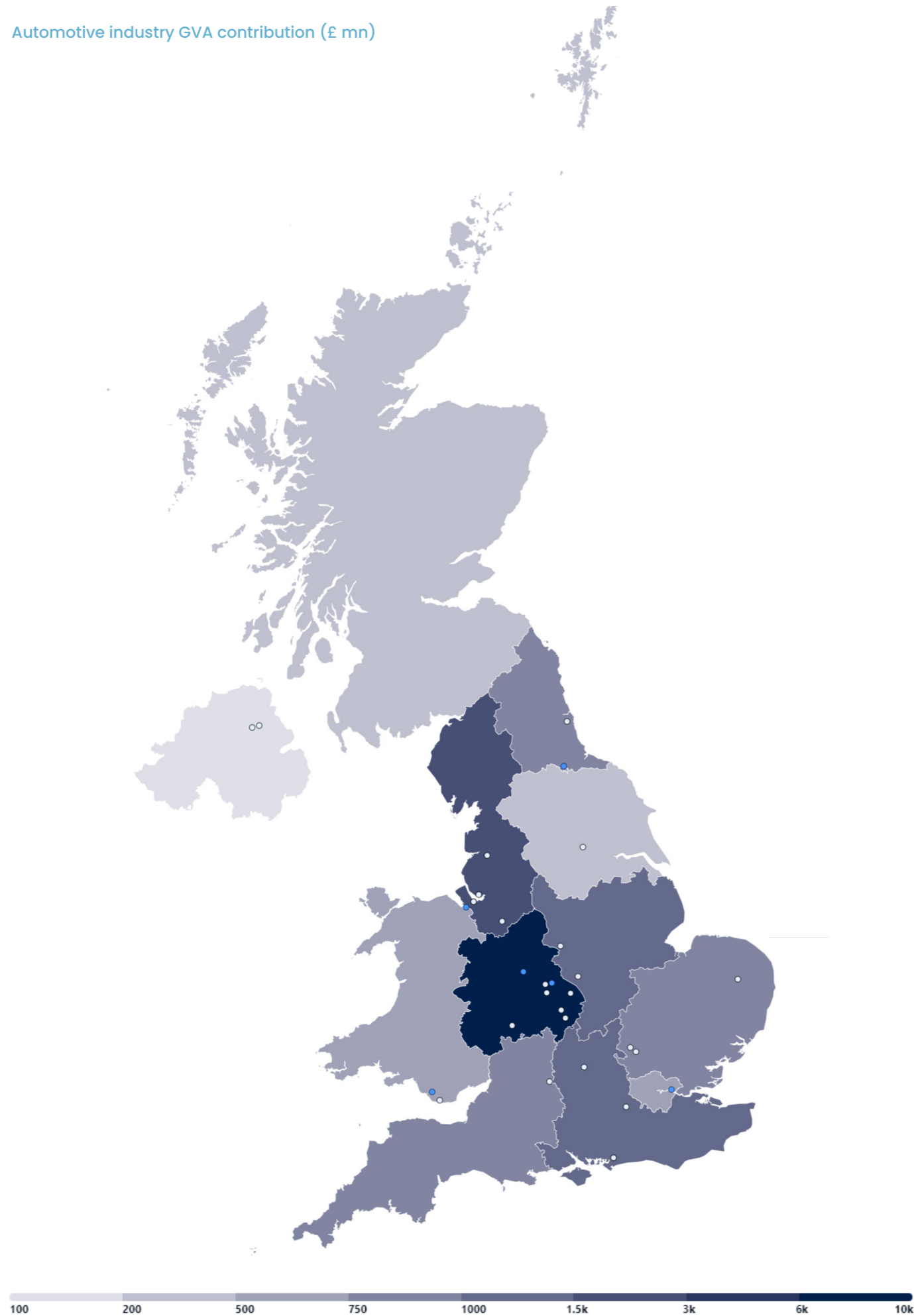
While the costs for building zero emission vehicles are falling, this is not happening quickly enough for the industry to hit the 2030 target whilst retaining its global market share and volume of production. Unlike other major governments, the UK has yet to back its ambition with a matching level of investment in battery production incentives, charging networks and affordable clean energy. Independent analysts predict that by 2025, the UK will have just 12 GWh of lithium-ion battery capacity, compared to 164 GWh in Germany, 91 GWh in the US or 32 GWh in France.¹

The next ten years will be crucial to the long-term future of the industry. With the right support, the industry could continue to provide good jobs and boost growth for decades to come. Without that support however, there is a real risk that the industry's economic footprint could substantially decline. Given the long leads for investment, many key policy decisions will need to be made in the next 24 months.



¹ <https://www.spglobal.com/marketintelligence/en/news-insights/blog/top-electric-vehicle-markets-dominate-lithium-ion-battery-capacity-growth>

Automotive industry GVA contribution (£ mn)



The automotive industry provides good jobs, levels up the UK and is our largest exporter of goods

For most families, the car is one of the most important technologies in their lives. 95% of car owners agree that their car gives them significantly greater freedom and mobility². Whether it is the car that drives them to work, the light van that delivers a new parcel, or the bus that takes you to the nearest shops, the automotive industry plays a crucial role in keeping the economy going.

From MINI to Aston Martin, Jaguar Land Rover to Bentley, British brands are famous worldwide. Besides passenger cars, the UK automotive sector is also a significant producer of buses, vans and a wide range of commercial vehicles from construction vehicles to Formula 1 cars, ambulances to taxis, as well as remanufactured products and a vast supply chain. The UK automotive industry has many important advantages: enough scale and affluence to serve across the full range of the market and support a diverse supply-chain; strong global connections; world-leading engineering; a highly skilled workforce; and healthy consumer demand.

The industry creates many significant spillover benefits:

- **Levelling up the UK.** In total, the automotive industry directly contributes £15 bn in GVA for the UK economy, with the majority of the value created by the automotive industry located outside the South East of England.³ If the automotive industry didn't exist, we estimate that this would be enough to increase the economic gap between London and the North East by a further 9% and in the West Midlands by 3%.
- **Providing good jobs.** Across the UK, over 180,000 employees are directly employed in automotive manufacturing, and a total of 860,000 in the wider automotive industry, including retail, leasing and fuel supply.⁴ The automotive sector is also a significant keystone for creating and sustaining jobs in other sectors, such as chemicals, steel, aftermarket, logistics, finance and advertising. Every job in the sector creates another 1.7 jobs in the wider economy. The average wage in the automotive manufacturing industry is around 35% higher than the UK average, and in a region like the North East over 60% higher than the local wage.
- **A globally competitive industry.** Over 80% of cars and some 60% of commercial vehicles produced in the UK are built for export, with the UK selling into 150 markets worldwide. The automotive industry is the UK's largest source of exports for goods.

2 Public First/Findoutnow survey of 589 UK car owners
 3 ONS
 4 Public First estimate from ONS data

Over the next decade, the automotive industry will go through the most fundamental transformation since its creation – and the UK risks falling behind

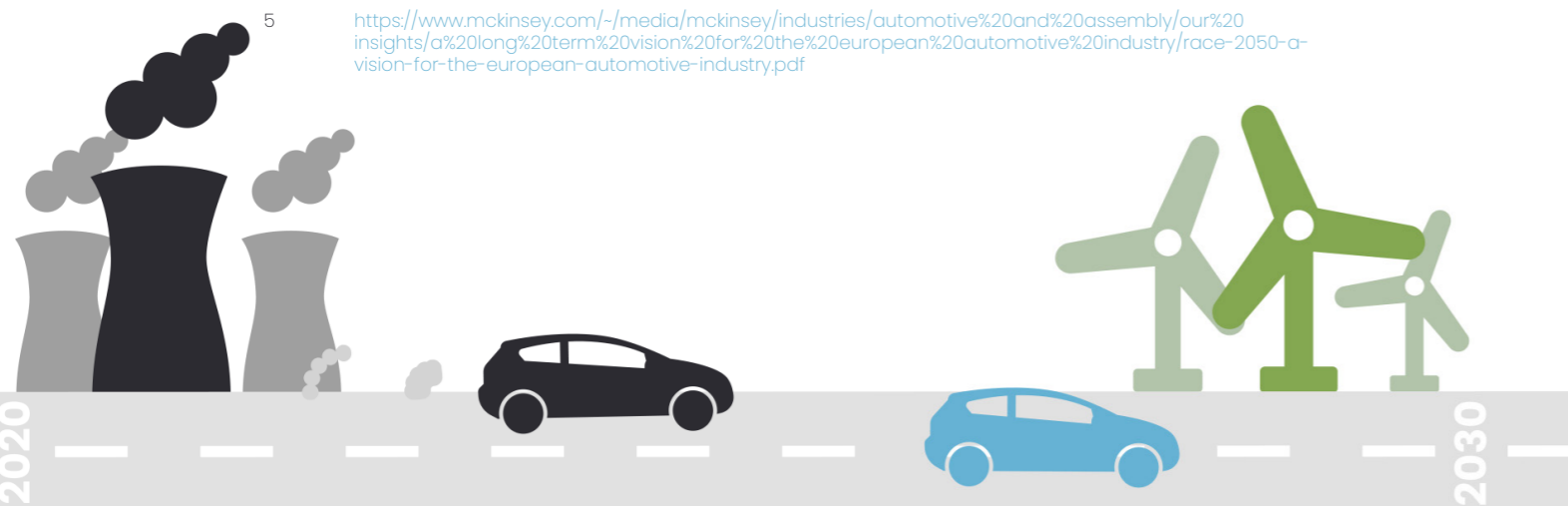
The industry is currently facing significant short-term pressures and costly challenges, including adapting to Brexit, a significant fall in demand from Covid-19, and a pressing bottleneck from the global semiconductor shortage. Even as these pressures may ease, the industry is likely to see significant disruption.

- **The transition from fossil fuels to Zero Emission Vehicles (ZEV).** This change will have significant spillover effects, from the pattern of energy demand to how we structure motoring taxation. For the industry, it will mean some of the UK's strengths in traditional powertrain design become less important.
- **The rise of increasingly connected and automated vehicles.** While it is difficult to predict the timeline for full self-driving vehicles, there is much less doubt that the industry will continue to become increasingly digitalised. By 2030, embedded software could make up to 30% of total vehicle value.⁵
- **Changing trade patterns, along with the wider rise of Asian markets.** Measured on a volume basis, the majority of vehicles exported from the UK are headed to the EU. The evolving UK-EU relationship, geographic proximity, market strength and regulatory influence, and integrated pan-European supply chain remain critical to UK Automotive success. However, even before Brexit, exports to non-EU markets were already growing significantly faster than to the EU itself – and future trade deals offer the potential to further catalyse UK exports, particularly among premium and small volume manufacturers and open new opportunities.

The UK industry retains strong fundamentals in engineering, but is falling behind in incentives for international investment

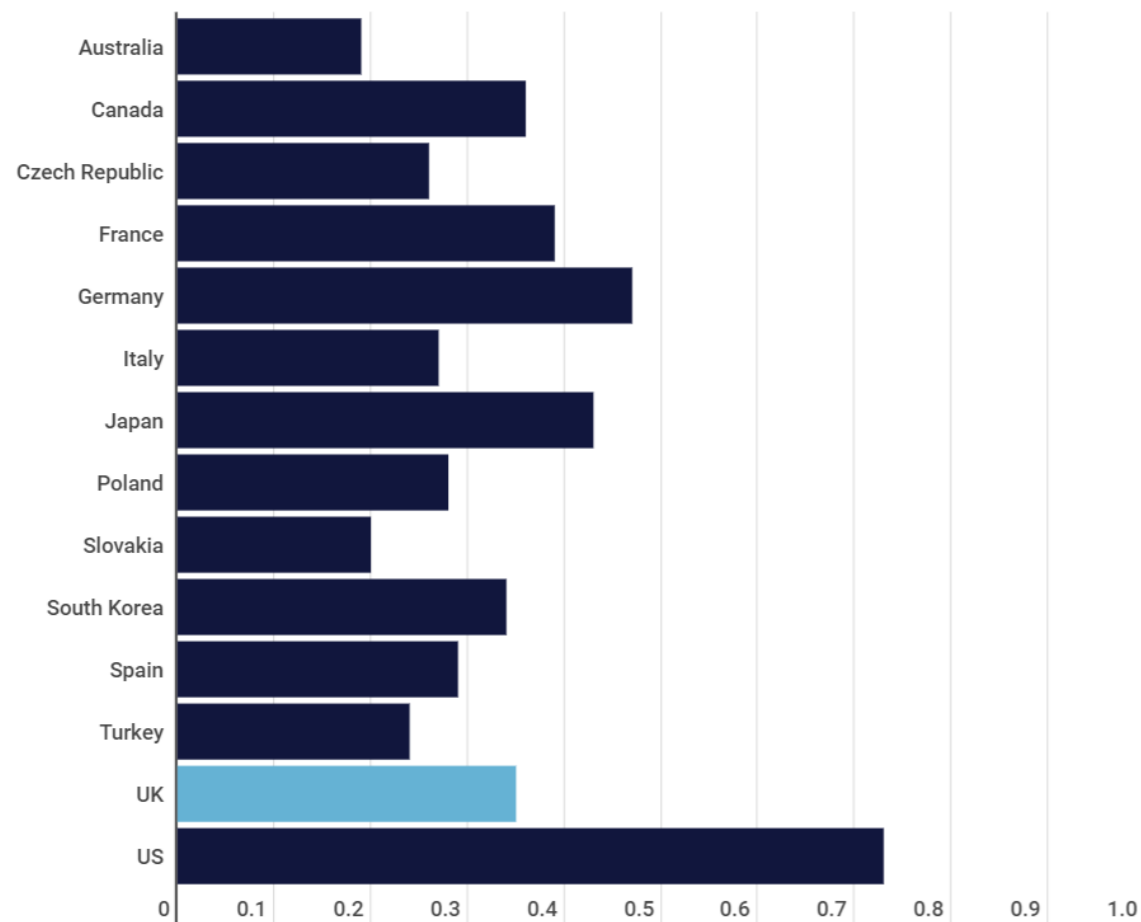
In order to assess how well placed the UK was to adapt and prosper on the back of these changes, we constructed a new Automotive Competitiveness Index, centred around three pillars:

- **Technology & Innovation.** In principle, the UK's engineering heritage and strengths in digital and technology position it well for a relative advantage in the future automotive industry. However, without underlying base facilities such as domestic battery production and an electrified supply chain in the UK, industry could easily underperform its potential – there is already a growing gap with less generous subsidy support in the UK compared to other destinations for investment.
- **Manufacturing Competitiveness.** In the 1980s, the UK's competitive environment for foreign investment helped secure new manufacturers, securing the future of domestic car production and helping drive up standards across the industry. Today, while the UK retains a strong research and engineering base, we are increasingly falling behind in other elements of competitiveness, with some of the highest energy and tax costs.
- **Consumer, Market & Trade.** Having access to a healthy local market helps provide sufficient scale to support a diverse sector and resilient supply chain. The UK has a relatively large domestic market, with healthy demand across different types of market segment. Leaving the Single Market has inherently increased friction and risk among the pan-European supply chain, and ensuring a strong and responsive working relationship with the European Union is essential to maintain smooth trade flows, continued market access and the ongoing running of the industry.



Overall, we found in our index that the UK retains many of its traditional strengths: a strong science, engineering and innovation base; a flexible and highly productive workforce; a strong domestic market. With the right investment, we have the potential to secure and grow the industry for decades to come. However, we are increasingly falling behind in other indicators of international competitiveness: we have the highest business electricity costs in the EU, one of the highest levels of business rates in the OECD, relatively few tax incentives for investment and unlike many of our competitors, no longer have frictionless, zero cost access to a large regional trading block like the EU or USMCA. If these fundamentals don't change, UK competitiveness could rapidly decrease in future years.

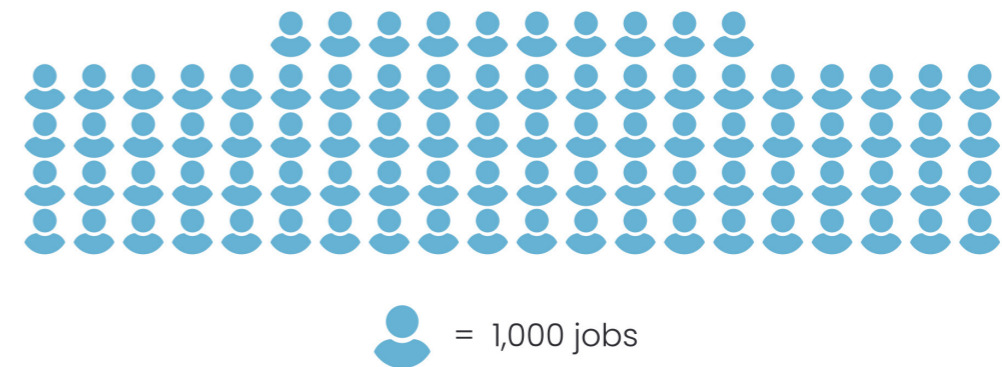
UK Competitiveness Index (1= best, 0 = worst)



If the industry fails to make the transition, over 90,000 jobs could be lost by 2030⁶

In order to assess the potential impact of these changes on the economic future of the industry, we next compiled four scenarios for the future of the industry, and looked at the resulting implications for growth and jobs:

- **Central.** The UK builds 60 GWh of gigafactory supply by 2030, ensuring that we have ample battery supply to maintain our current production volume, and offers significantly more generous incentives for business investment. Under this scenario, GVA and jobs return to a trajectory of steady growth.
- **Optimistic.** The UK builds 80 GWh, undertakes an ambitious programme of trade deals and significantly improves its attractiveness for business investment. This sees GVA grow by around a third faster than in the central scenario, and sees the sector as a whole gain around 40,000 jobs.
- **Pessimistic.** The UK only builds out 30 GWh of gigafactory supply, while non-tariff barriers with the EU moderately increase from the middle of the decade. Under this scenario, GVA recovers from Covid-19 and then largely stagnates, with substantial jobs lost over time.
- **Stranded.** The UK only builds one additional gigafactory, leaving total supply under 15 GWh and so fails to make the transition away from ICEs. As a result, around 90,000 jobs are lost, with the majority of these concentrated outside of London and the South East, further increasing regional inequality.





A roadmap to preserve and grow the automotive industry

If we want to preserve and build on the automotive sector's current economic contribution, significantly more government support will be needed to accelerate change. The current Automotive Transformation Fund is not large or broad enough in scope to deliver the scale of change needed. Given the long lead times of much of this investment, many crucial policy decisions will need to be taken in the next twelve months.

In the final section of the report, we present a concrete roadmap of how the Government and the industry can work together to meet the 2030 target, and secure the investment needed to secure and grow the UK industry based on three pillars: Technology & Innovation, Manufacturing Competitiveness, and Consumer, Market & Trade. In order to ensure that we stay on track, we suggest the Government produces its own roadmap, reviewing it every two years.



Technology & Innovation



Manufacturing Competitiveness



Consumer, Market & Trade

Technology & Innovation

- **Set an explicit Government target for the provision of 60 GWh of battery production within the UK by 2030.** This would ensure that the UK has the capacity to produce up to 1 million electric vehicles domestically, and make it easier for UK produced vehicles to meet local content requirements, avoiding export controls. In order to achieve this and the required changes in the power electronics, motors and drives supply-chain, the Automotive Transformation Fund should be expedited and other broader support needed.
- **Support the development of a fuel cell gigafactory with a 2 GW capacity by 2030.** This would be capable of supplying the production of 17,000 cars, trucks, buses and rail units. While battery electric vehicles may make up the majority of the consumer market, hydrogen and other technologies are likely to be particularly important for heavy vehicles.
- **Develop a comprehensive and long-term skills and retraining strategy that supports needs across the sector, and pilot greater Apprenticeship Levy flexibility in the sector to better support retraining.** The Government should work with the industry to develop retraining bootcamps, and ensure that key skills requirements are included within local skills plans, taught in the Institutes of Technology and are on the shortage occupation list for skilled worker visas.
- **The UK should seek to be the best place in the world to develop, test, trial and deploy Connected and Automated Vehicle (CAV) technology.** The UK's combination of leading expertise in engineering and digital technology, combined with our tradition of innovation friendly regulation, puts us in a good position to create new companies and business models here. As the Government's recent Taskforce on Innovation, Growth and Regulatory Reform recommended, regulatory sandboxes can play a powerful role in building the evidence base on safety and new innovations.⁷



Manufacturing Competitiveness

- **Create a new Build Back Better Fund to support advanced manufacturing jobs for the future.** This would help fund automotive production line transformation, skills retraining, and energy costs relief, ensuring that the UK remains competitive for investment. If this fund was of a similar order of magnitude to the funds recently proposed by the US and EU, it would be over £10 billion in size.
- **Net zero critical industries, such as automotive manufacturers making low emission vehicles, batteries and fuel cells should get the same benefits and support as Energy Intensive Industries.** These measures, alongside better support for trade intensive sectors in the UK Emissions Trading Scheme, and an extension of Climate Change Agreements would help reduce energy costs, and encourage investment in zero emission technologies.
- **Fund trial and demonstration projects to explore the use of hydrogen during manufacturing.** In the longer term, for many industrial processes such as heating and paint shop ovens, hydrogen may prove a more suitable replacement for gas than electricity.
- **Ensure the UK tax system creates a globally attractive destination for investment.** In order to encourage greater investment, the Government should consider removing plant and machinery from the business rates valuation, extending more generous capital allowances, and increasing R&D tax credits to a more internationally competitive level



Consumer, Market & Trade

- **The Government should develop an infrastructure strategy, with a goal of ensuring that at least 2.3 million public charging points are in place by 2030.** Public support is likely to be particularly important to deliver additional on-street charge points (1.95 million required), and to ensure that less prosperous areas of the country do not get left behind.
- **Commission an independent review to holistically consider the long-term future of fuel, vehicle and road based taxes in a decarbonised sector.** If we want individuals and families to invest in electric vehicles, we need to ensure that they have that they will not be surprised by new taxes down the line, and these new taxes in do not undermine the transition to zero emission vehicles.
- **Continue Plug-in Vehicle Incentives beyond their current term and exempt Ultra Low Emission Vehicles from taxation for the next five years.** A short term tax exemption, including from VAT, as well as extending consumer and fleet incentives, would help bridge the gap until ULEVs can reach total cost of ownership parity on their own and bring us in line with incentive levels in other markets.
- **Work with the industry to develop an ambitious, forward looking trade strategy, which targets automotive's most important markets.** The UK should use its new trade freedoms to expand market access for the sector, particularly for high end vehicles that sell globally whilst ensuring a strong and responsive working relationship with the European Union to maintain smooth trade flows to our largest trading bloc, and protect critical supply chains.

A roadmap to preserve & grow the automotive industry

2021 – 2022

2023 – 2024

2025 – 2030

Context

Spending Review (2021)

Transportation Decarbonisation Plan (2021)

End of phase-1 of TCA transitional rules (2024) on electrified vehicles, batteries

EVs likely to reach total cost of ownership parity

End of UK-EU TCA transition period (2027)

End-of-sale of new petrol and diesel cars/vans (2030)



Technology & Innovation

Government set UK **target for battery production**

Expedite delivery of **Automotive Transformation Fund**

Streamline processes for obtaining the necessary permits and licences for **new production facilities**

Regulatory reform to enable commercial deployment of conditionally automated passenger cars by early 2022

Government & Industry develop long term **skills and retraining strategy**

Pilot **greater Apprenticeship Levy flexibility** in the automotive sector

Battery and fuel cell **gigafactories construction starts**

Strategically **invest in R&D** on step-change battery and fuel cell technologies

UK builds domestic capacity for power electronics, motors and drive support

Regulatory reform to enable highly automated cars, passenger shuttles and delivery vehicles no later than 2025

Pilot **retraining schemes**

Reach **60 GWh of battery production** and 2 GW of fuel cell production

Battery recycling and repurposing facilities commissioned

Increasing share of miles driven is **fully automated**

Retrain existing workforce



Manufacturing Competitiveness

Create new **Build Back Better Fund**

Extend **Coronavirus Job Retention Scheme** through 2021, and provide additional business rate relief

Expand access to **EII schemes** for auto sector and review free allocations for trade intensive sectors in UK Emissions Trading Scheme

Fund trial **demonstration projects** for hydrogen in manufacturing processes

Reform **business rates** and increase international competitiveness of R&D Tax Credits

BBB Fund starts **making grants**

Reduce business energy costs to below the EU average to improve UK competitiveness

Extend Climate Change Agreements and make EV batteries eligible

Anticipatory investments in the most constrained electricity networks

1GW of hydrogen production capacity

Scale up use of hydrogen during production

Ensure **renewables deliver nearly 100%** of electricity generation (2030)



Consumer, Market & Trade

Announce further **short-term incentives** for EV consumer and fleets

Commission **independent review** into fuel, vehicle & road taxation

Better scope charging network need and **publish EV Infrastructure Plan** with firm commitments for expansion

Introduce **regulation** on consumer experience of charging

Conclude renegotiations of **continuity deals** with major trading partners

Support sector's adjustment to new **customs requirements** in trade with the EU

Develop **trade strategy** for major export markets

Government responds to taxation review

Expansion of charging infrastructure networks to ensure adequacy of provision and social equity

Sign trade deals with major markets (US, CPTPP etc)

Review impact of end of phase-1 of TCA transitional rules on electrified vehicles, batteries in 2023

Reach **2.3 million public chargers** by 2030

Long term **taxation changes** phased in

Consumer **education campaign** on coming phase-out

Expand UK's **global market share**

Review impact of end of phase-2 of TCA **transitional rules** in 2026

Support delivery of **2025 border strategy**

