

# Automotive Roadmap

Driving Us All Forward

March 2022



A close-up, low-angle shot of a car's front wheel and tire. The wheel has a multi-spoke alloy design. The tire is a dark color with some text visible on the sidewall. The background is blurred, showing parts of the car's body and the ground.

# Automotive Roadmap

**Driving Us All Forward**

The UK is the first major economy to commit to a net zero target.

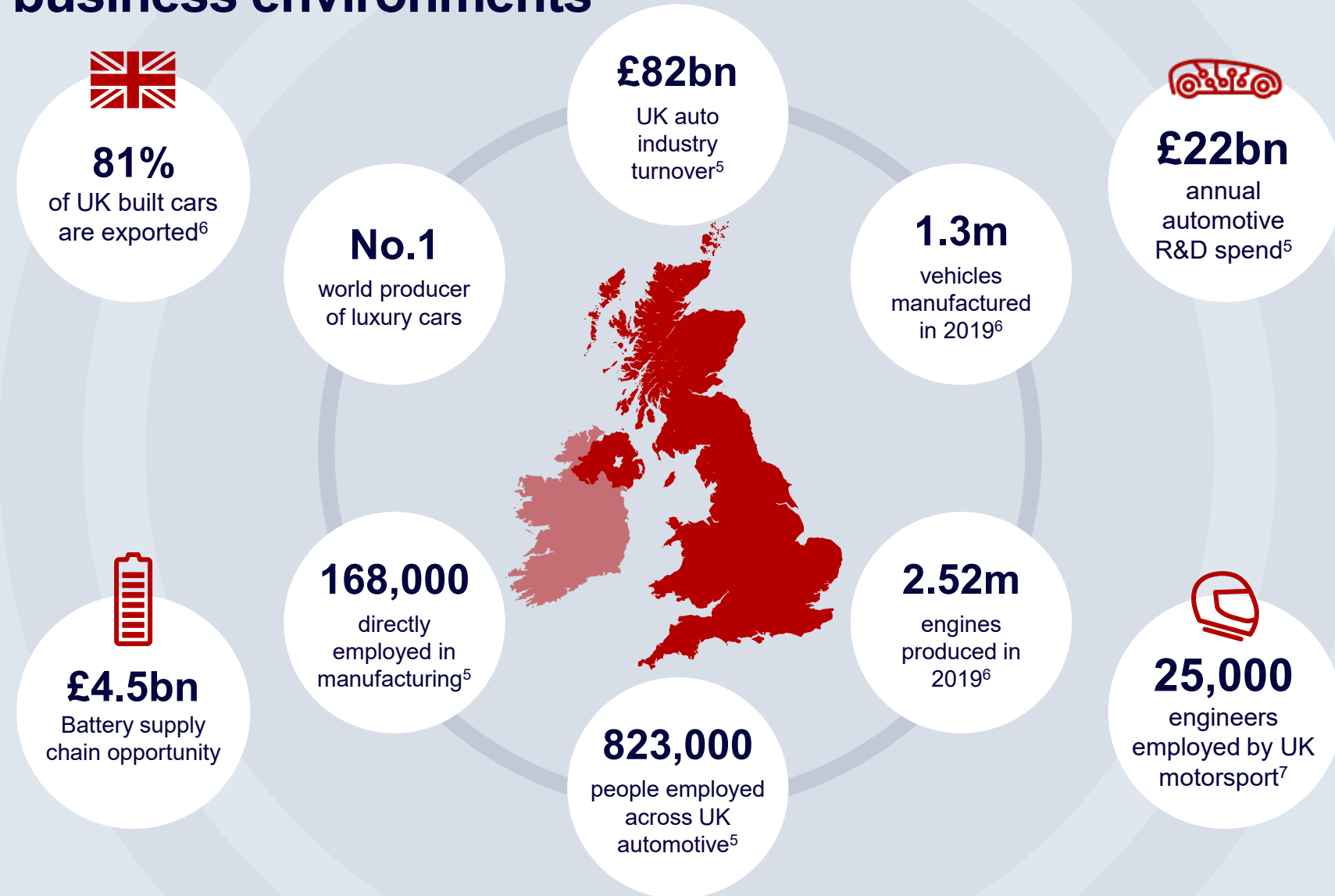
As part of the 10 Point Plan for a Green Industrial Revolution, we will invest £12 billion by 2030.

We are ending sales of new petrol and diesel engine cars and vans in 2030. All new cars and vans will be zero emission by 2035.

We are accelerating electrification, investing over £5 billion across infrastructure, manufacturing and research & development.

Thanks to our policies and to government and industry investments, over 1 in every 6 cars sold in the UK now has a plug.

# The UK has one of the world's most attractive business environments



- Most active and deepest capital markets in Europe
- Stable regulatory market
- 2nd in G20 for ease of doing business
- 0% dividend withholding tax rate, as part of wider competitive tax regime
- The UK-EU Trade Cooperation Agreement post EU exit allows zero tariff market access with the EU
- Further UK Free Trade Agreements enable exports to the rest of the world (currently 70 plus EU)
- Super-Deduction - A new 130% first-year capital allowance for qualifying plant and machinery assets

Sources: See Appendix

# The UK is investing heavily into electrification

**£318m**

Faraday Battery  
Challenge  
ZEV battery  
development<sup>1</sup>

**£1b**

Advanced  
Propulsion  
Centre

**£80m**

Driving the Electric  
Revolution – power  
electronics, electric  
drivetrains<sup>2</sup>

**£2.5bn**

Office for Zero Emission  
Vehicles (OZEV) funding  
for R&D, infrastructure  
and purchase  
grants<sup>3</sup>

**£1bn**

Automotive  
Transformation  
Fund<sup>4</sup>

**£440m**

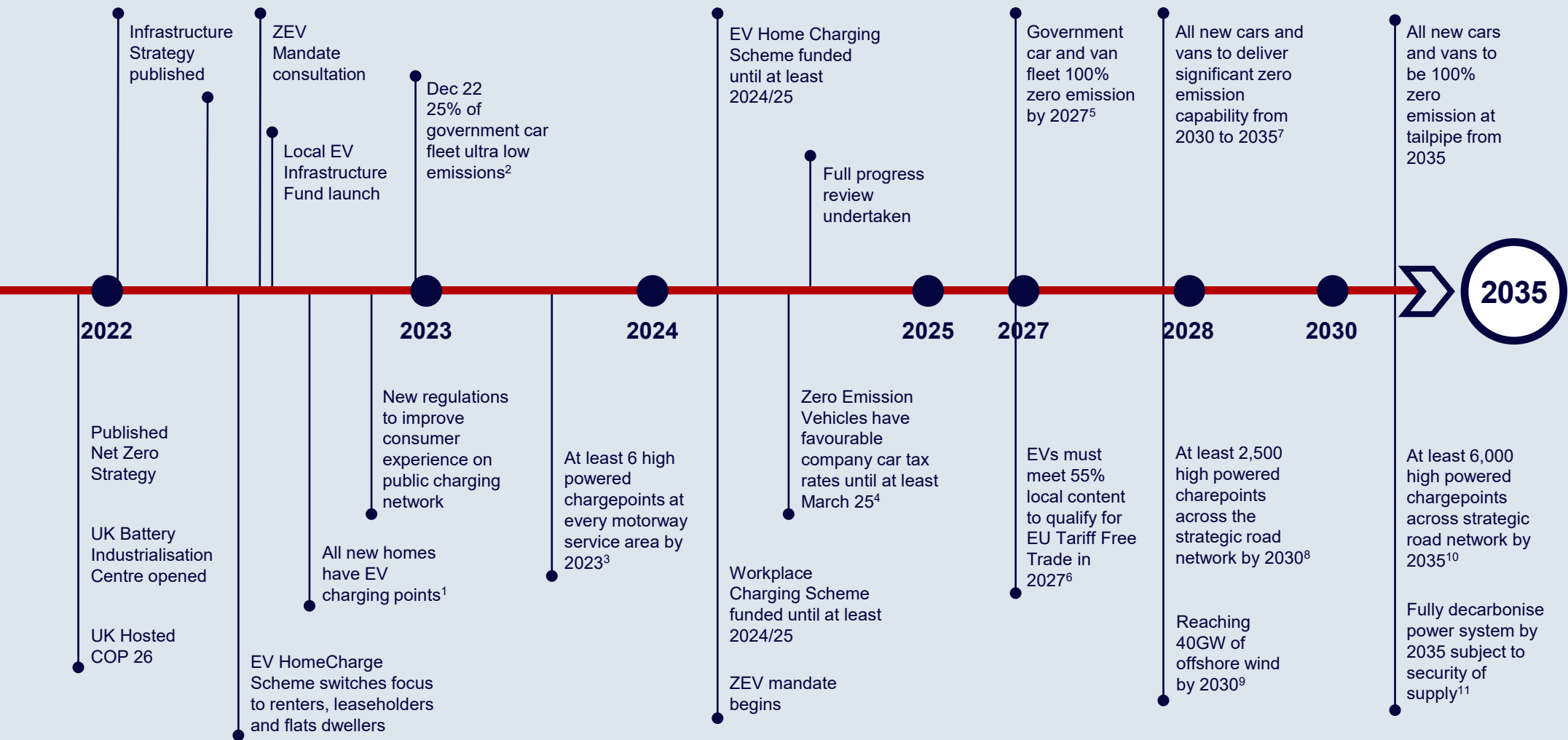
Connected  
Automated Vehicle  
Technology

- Creating the right regulatory environment including 2030 Phase Out, Zero Emission Vehicle (ZEV) mandate, infrastructure provision
- Learning from industry to understand and develop supply chain plans for key areas
- Encourage innovation, efficiency and keep costs low through funding
- Invest in our UK skills and capability through green skills programmes, such as our Lifetime Skills Guarantee

Sources: See Appendix

# Our 2035 Delivery Plan

Critical activity and milestones on a path to fully transitioning the automotive sector.



## Our ambitions:

- Improve EV affordability
- Accelerate charging infrastructure provision
- Support supply chain & manufacturing industry
- Prepare energy system for large-scale EV adoption
- Provide regulatory certainty to consumers & OEMs
- Invest in future workforce

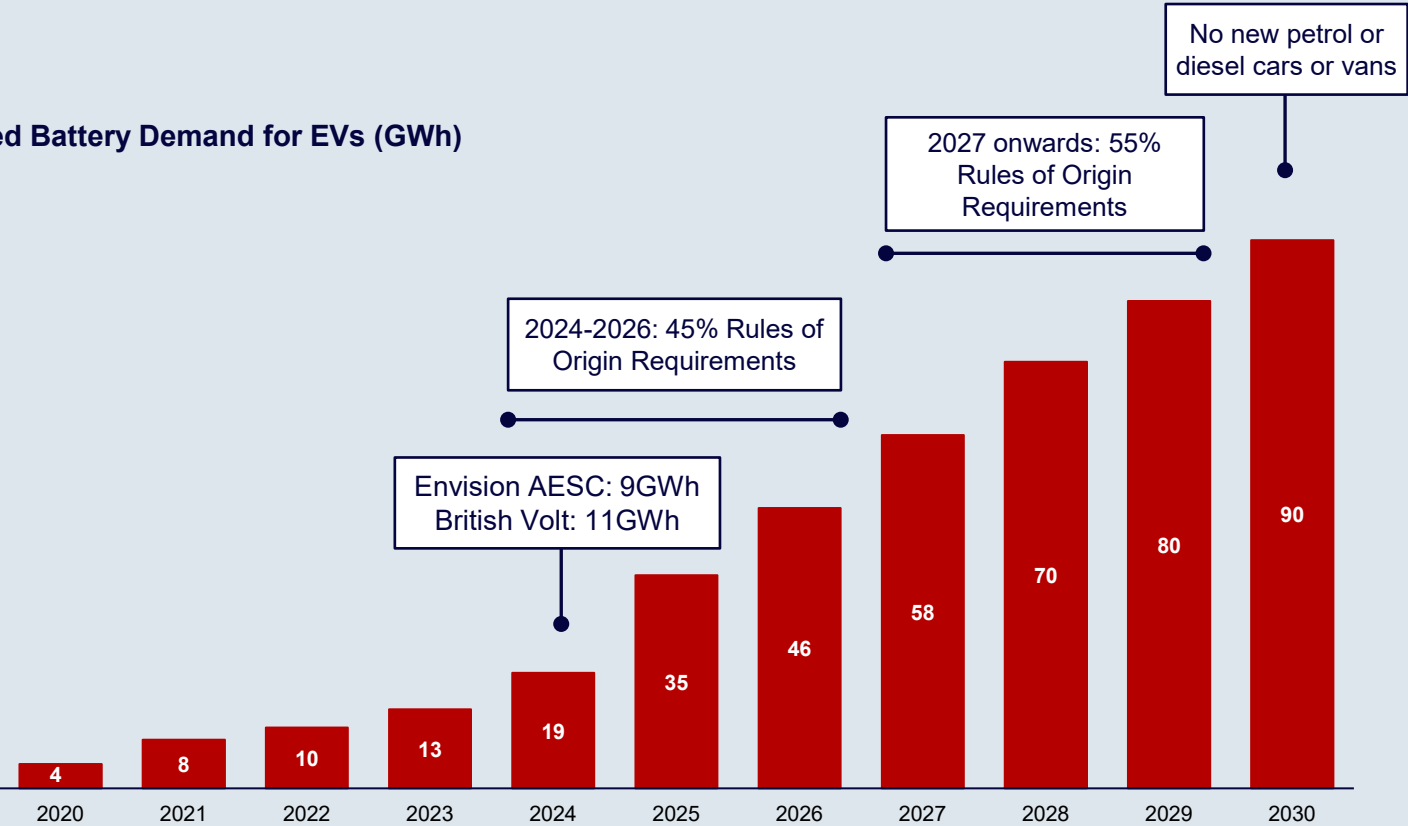
Sources: See Appendix



# Growing battery supply to support Rules of Origin Requirements

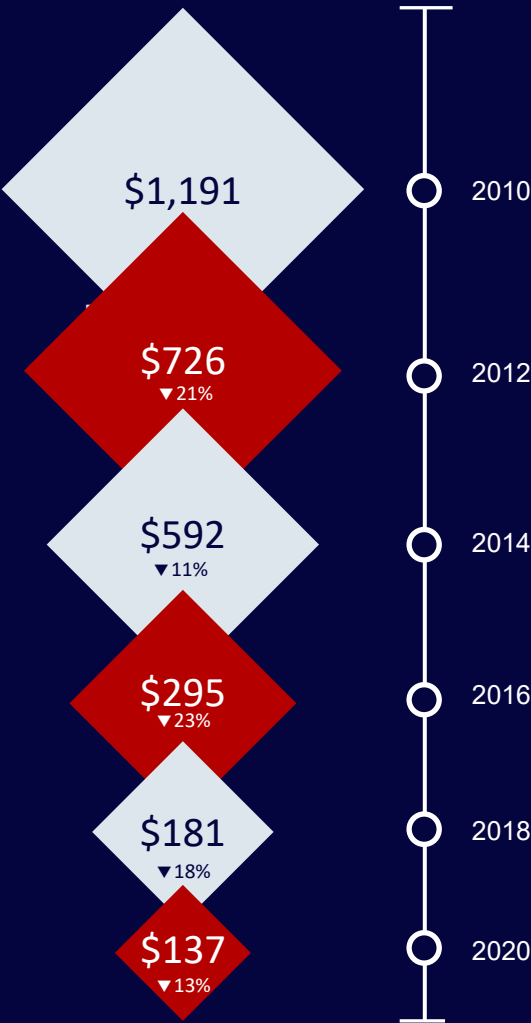
It is anticipated that battery production costs will continue to fall, whilst demand for EVs increases.

Projected Battery Demand for EVs (GWh)



Source: Advanced Propulsion Centre projected battery demand for cars and vans assembled in the UK: British Volt to build 30GWh Gigafactory, with first 11GWh expected to come online in 2024;

Battery production costs have fallen steadily over the past decade



# Government and Industry working together to deliver the transition

Providing certainty to the market.

	 What we are delivering	 What we look to industry to deliver
Infrastructure	<ul style="list-style-type: none"><li>■ Significant, long-term support committed for local, on-street residential and high speed on-route charging across the country</li></ul>	<ul style="list-style-type: none"><li>■ Build and maintain convenient, affordable, reliable charging network, at pace</li></ul>
Supply chain & manufacturing	<ul style="list-style-type: none"><li>■ Supporting auto industry transformation and building robust supply chain</li></ul>	<ul style="list-style-type: none"><li>■ Source local parts and batteries, build Zero Emission cars and vans in the UK</li></ul>
Energy	<ul style="list-style-type: none"><li>■ Supporting development of secure, resilient, zero carbon electricity network to reduce vehicle life-cycle emissions</li></ul>	<ul style="list-style-type: none"><li>■ Embrace the fuels of the future and work to improve the energy efficiency of manufacturing operations</li></ul>
Regulation	<ul style="list-style-type: none"><li>■ Creating a business and consumer friendly regulatory environment</li></ul>	<ul style="list-style-type: none"><li>■ Unleash forces of innovation and support more effective use of vehicles already on roads</li></ul>
Jobs & Skills	<ul style="list-style-type: none"><li>■ Readyng the workforce of today for the jobs of tomorrow</li></ul>	<ul style="list-style-type: none"><li>■ Nurture and train employees to be leaders of tomorrow</li></ul>
Affordability	<ul style="list-style-type: none"><li>■ Providing grants to support early market, tax incentives and clear, long-term regulatory framework</li></ul>	<ul style="list-style-type: none"><li>■ Provide a growing selection and number of ZEVs into market, passing savings onto customers as costs decrease</li></ul>

Sources: See Appendix

# Making ZEVs more affordable for drivers

Projections suggest that price parity will be reached between 2025-2027, depending on segment.

	What we have done	What we are doing	What we committed to
Company Car Tax	<ul style="list-style-type: none"><li>■ Favourable Company Car Tax (CCT) rates for zero emissions company cars</li></ul>	<ul style="list-style-type: none"><li>■ Keeping low rates of ZEV CCT, which can save drivers over £2,000 per year</li></ul>	<ul style="list-style-type: none"><li>■ Zero emission cars will continue to benefit from favourable CCT rates until March 2025</li></ul>
Capital Allowances	<ul style="list-style-type: none"><li>■ 100% write-down in first year on outright purchase of plant and machinery (including ZEVs)</li></ul>	<ul style="list-style-type: none"><li>■ Super deduction of 130% available from 1st April 2021</li></ul>	<ul style="list-style-type: none"><li>■ Super deduction available until March 2023</li></ul>
Vehicle Excise Duty	<ul style="list-style-type: none"><li>■ Zero VED (registration tax) for ZEV cars and electric vans</li></ul>	<ul style="list-style-type: none"><li>■ Keeping zero VED for ZEV drivers</li></ul>	<ul style="list-style-type: none"><li>■ Zero emission cars are exempt from the VED Expensive Car Supplement until March 2025</li></ul>
Vehicle Excise Duty	<ul style="list-style-type: none"><li>■ Over 750,000 plug-in vehicles sold in the UK, supported by around £1.5bn of plug-in grant funding</li></ul>	<ul style="list-style-type: none"><li>■ £582 million allocated for plug-in grants at Spending Review 2020 (SR20) and £300m further funding for targeted vehicle incentives at SR21</li></ul>	<ul style="list-style-type: none"><li>■ We will support the plug-in car and van grant until at least 2022/23</li></ul>

Sources: See Appendix



# Accelerating infrastructure roll-out

Delivering a convenient, affordable and reliable charging network.

	What we have done	What we are doing	What we committed to
Charging at Home	<ul style="list-style-type: none"><li>Invested £88 million+, supported 230,00+ domestic chargepoint installations</li></ul>	<ul style="list-style-type: none"><li>Shifting support of the scheme to focus on leaseholders, renters flat dwellers from April 2022</li></ul>	<ul style="list-style-type: none"><li>Fund the Electric Vehicle Homecharge Scheme until at least 2024/25</li></ul>
On Street Charging	<ul style="list-style-type: none"><li>Awarded funding to local authorities to install 4,400+ public chargepoints. On track for full uptake of £20m 2022 fund</li></ul>	<ul style="list-style-type: none"><li>Addressing the gap between what the market can deliver alone to encourage larger rollouts of local charging infrastructure</li></ul>	<ul style="list-style-type: none"><li>Invest at least a further £500 million to support local authorities to plan and deliver local public charging infrastructure</li></ul>
Workplace Charging	<ul style="list-style-type: none"><li>Invested £8 million, supported 19,000+ socket installations in staff and fleet car parks</li></ul>	<ul style="list-style-type: none"><li>Providing more support for SMEs, small accommodation businesses, and the charity sector</li></ul>	<ul style="list-style-type: none"><li>Fund the workplace charging scheme until at least 2024/25</li></ul>
On Route Charging	<ul style="list-style-type: none"><li>Started support with private sector to deliver at least 6 high powered chargepoints at every motorway service area in England by 2023</li></ul>	<ul style="list-style-type: none"><li>Investing £950 million to upgrade electricity connections at motorway service areas across England's strategic road network</li></ul>	<ul style="list-style-type: none"><li>2500 high powered chargepoints on strategic road network by 2030, and 6,000 by 2035</li></ul>

Sources: See Appendix

# Transforming the auto industry and building EV supply chains

Preparing the ground for the next generation of vehicles.

	What we have done	What we are doing	What we committed to
Charging at Home	<ul style="list-style-type: none"> <li>Secured UK's first two gigafactories through £500 million Automotive Transformation Fund (ATF)</li> </ul>	<ul style="list-style-type: none"> <li>Identifying priority EV supply chain projects to support ATF such as batteries, fuel cells and motors</li> </ul>	<ul style="list-style-type: none"> <li>£350 million to ATF to support localisation of key supply chain capabilities to meet RoO with EU and future FTAs</li> </ul>
EV Technology Commercialisation	<ul style="list-style-type: none"> <li>Co-funded APC with industry – £1 billion over 10 years to 2023, supporting new Zero Emissions Technology commercialisation</li> </ul>	<ul style="list-style-type: none"> <li>APC continued support for commercialisation projects, including £37 million grants in August 2021 to 17 organisations</li> </ul>	<ul style="list-style-type: none"> <li>Long-term political commitment to fund APC to 2025 (intended funding level around £75 million p.a. in SR period)</li> </ul>
R&D Support	<ul style="list-style-type: none"> <li>£318 million invested in Faraday Battery Challenge to put UK at forefront of battery design, development, manufacturing and recycling</li> </ul>	<ul style="list-style-type: none"> <li>Investing in Automotive R&amp;D ecosystem including Battery Industrialisation Centre, and driving UK leadership in innovation for key areas such as battery recycling</li> </ul>	<ul style="list-style-type: none"> <li>BEIS to invest additional £25 million p.a. on ATF R&amp;D and support CCAV R&amp;D projects such as large scale commercial demonstrations</li> </ul>
Vehicle Manufacturing	<ul style="list-style-type: none"> <li>Agreed FTAs with 65+ partners, including TCA with EU, UK export Finance provided £2 billion in loan guarantees</li> </ul>	<ul style="list-style-type: none"> <li>Actively attracting OEMs and new disruptor firms to invest in the UK through ensuring a competitive and attractive business environment</li> </ul>	<ul style="list-style-type: none"> <li>Under Global Britain Investment Fund banner, HMG will accelerate investment, create jobs and support green industrial revolution</li> </ul>



Sources: See Appendix

# Preparing the UK's energy system for large-scale EV adoption

Readying the electricity system for EV demand.

	What we have done	What we are doing	What we committed to
<b>Deploying low carbon generation</b>	<ul style="list-style-type: none"> <li>Low carbon generation reached around 60% in 2020</li> </ul>	<ul style="list-style-type: none"> <li>4th CfD allocation round to bring forward more renewables; removing deployment barriers</li> </ul>	<ul style="list-style-type: none"> <li>Reaching 40GW of offshore wind by 2030 and fully decarbonising power sector by 2035, subject to supply security</li> </ul>
<b>Preparing the grid</b>	<ul style="list-style-type: none"> <li>Ofgem designed RIIO-2 price controls to enable flexible and adaptive investment decisions, ensuring electricity networks net zero ready</li> </ul>	<ul style="list-style-type: none"> <li>Improving network planning e.g. Offshore Transmission Network Review; consultation on establishing expert, impartial Future System Operator</li> </ul>	<ul style="list-style-type: none"> <li>Legislating to enable competition in onshore electricity networks, reducing costs for billpayers</li> </ul>
<b>Improving grid connections</b>	<ul style="list-style-type: none"> <li>Ofgem proposed reduction in charges for new connections to network (inc. chargepoints)</li> </ul>	<ul style="list-style-type: none"> <li>Reviewing land rights and consents processes for lower voltage electricity network infrastructure</li> </ul>	<ul style="list-style-type: none"> <li>Improving connections experience</li> </ul>
<b>Maximising EV Flexibility</b>	<ul style="list-style-type: none"> <li>Legislated for private chargepoints to be capable of smart charging</li> </ul>	<ul style="list-style-type: none"> <li>Developing plans to maximise EV flexibility contribution with Ofgem, published 2022</li> </ul>	<ul style="list-style-type: none"> <li>Integrating EVs into the energy system, benefiting both consumers and the system</li> </ul>
<b>Industrial Energy Costs</b>	<ul style="list-style-type: none"> <li>Launched schemes to provide battery manufacturers with up to 85% reduction of indirect electricity costs</li> </ul>	<ul style="list-style-type: none"> <li>Open dialogue with new and existing energy intensive industries on size and scope of government support through ongoing consultations</li> </ul>	<ul style="list-style-type: none"> <li>Minimising energy costs for businesses to ensure the economy remains strong and competitive</li> </ul>

Sources: See Appendix



# Creating a regulatory environment that delivers transition

Policies that provide guidance and certainty.



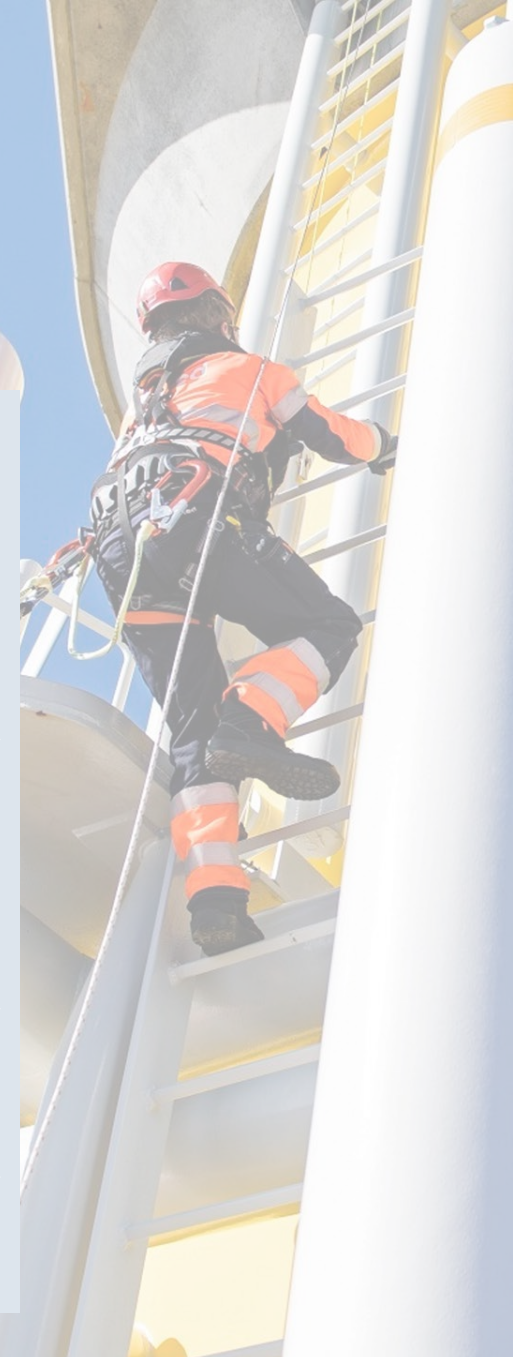
	What we have done	What we are doing	What we committed to
Zero emission capability and ZEV mandate	<ul style="list-style-type: none"><li>■ Announced introduction of ZEV mandate; consulted on 'significant zero emission capability' to define which new cars and vans can be sold between 2030 and 2035</li></ul>	<ul style="list-style-type: none"><li>■ Consult on ZEV mandate full design, including trajectory; publish government response to Green Paper; issue 'technical consultation' on key design features to Green Paper respondents</li></ul>	<ul style="list-style-type: none"><li>■ Introducing ZEV mandate, alongside CO2 tailpipe emissions regulation on the rest of fleet (acting as a backstop) in 2024</li></ul>
Chargepoint regulations and standards	<ul style="list-style-type: none"><li>■ 2017 Regulated for harmonised technical standards for vehicle recharging including connector type; 2021 Regulated for charging infrastructure in new homes and smart private chargepoints</li></ul>	<ul style="list-style-type: none"><li>■ Introducing legislation in 2022 to improve reliability and ease of payment at public chargepoints. Developing new standards for accessible EV charging</li></ul>	<ul style="list-style-type: none"><li>■ Regulating and mandating standards to improve consumers' experience across public chargepoints</li><li>■ Explore options to streamline and reduce barriers in the planning system and take any necessary actions</li></ul>
Self-Driving Vehicles (SDVs)	<ul style="list-style-type: none"><li>■ 2018 AEV Act: world's legislation for self-driving vehicle technologies</li><li>■ 2015 World-leading Code of Practice for testing automated vehicles</li><li>■ 2021 Automated Lane Keeping Systems for first SDV technology on our roads</li></ul>	<ul style="list-style-type: none"><li>■ Enabling safe deployment of SDVs: Law Commissions review on legislative framework; CAVPASS Programme on assurance standards; supporting advanced testing; public engagement to build understanding and confidence</li></ul>	<ul style="list-style-type: none"><li>■ Respond to Law Commissions' recommendations, including legislation when Parliamentary time allows</li><li>■ Implement new vehicle assurance processes to ensure self-driving vehicles can safely be approved for use</li></ul>

Sources: See Appendix

# Investing in the skills and capability of the UK workforce

With industry leadership, turning the workforce of today into the workforce of tomorrow.

	What we have done	What we are doing	What we committed to
Manufacturing	<ul style="list-style-type: none"><li>Developed higher level apprenticeships, supported the Electrification Emerging Skills Project and invested in the National Manufacturing Competitiveness Levels supply chain improvement programme</li></ul>	<ul style="list-style-type: none"><li>Working with established OEMs, suppliers and disrupters to understand their skills and workforce needs and encourage sharing best practice</li></ul>	<ul style="list-style-type: none"><li>£1 billion government commitment to support EV supply chains; 14 Driving the Electric Revolution Building Talent for Future and Emerging Skills Electrification projects in 2022</li></ul>
Consumer	<ul style="list-style-type: none"><li>Endorsed National Franchised Dealers Association (NFDA) Electric Vehicle Approved scheme and Institute of Motor Industry TechSafe standards for technicians. Delivered Skills Bootcamps in electrotechnical and vehicle electrification</li></ul>	<ul style="list-style-type: none"><li>Working with NFDA to accredit EV retailers. Updating guidance to improve training, assessment, and regulation of chargepoint installers. Developing EV service and repair apprenticeships via the Green Jobs Apprenticeship Panel</li></ul>	<ul style="list-style-type: none"><li>Support industry with initiatives such as Green Jobs Taskforce, Green apprenticeships, and Emerging Skills Electrification project; develop and promote apprenticeships; EV retail and aftercare standards/accreditation</li></ul>
Energy Infrastructure	<ul style="list-style-type: none"><li>Worked with stakeholders to update guidance to improve training, assessment and regulation of chargepoints</li></ul>	<ul style="list-style-type: none"><li>Ongoing engagement with stakeholders to feedback learning from charging infrastructure installation audits</li></ul>	<ul style="list-style-type: none"><li>Engage with stakeholders to update guidance in line with best practice and feed back learning from chargepoint installation audits</li></ul>



Sources: See Appendix



# Appendix

- 10 Point Plan for a green industrial revolution

[The Ten Point Plan for a Green Industrial Revolution \(publishing.service.gov.uk\)](#)

- EY Investment Attractiveness Survey

[A window of opportunity: EY Attractiveness Survey 2021 \(ey.com\)](#)

- UK Trade Agreement with the EU

[The Trade and Cooperation Agreement \(publishing.service.gov.uk\)](#)

- UK trade agreements with non-EU countries

[List of UK – Non-EU FTAs \(publishing.service.gov.uk\)](#)

- Electric Vehicle Infrastructure Strategy – [Launched 25<sup>th</sup> March 2022 \(publishing.service.gov.uk\)](#)

- All new homes to have EV charging points

[Consultation Response: EV Charge points in Residential and Non-residential Buildings \(publishing.service.gov.uk\)](#)

- Transport Decarbonisation Plan

[Decarbonising Transport – A Better, Greener Britain \(publishing.service.gov.uk\)](#)

- Transitioning to zero emission cars and vans

[Transitioning to zero emission cars and vans: 2035 delivery plan \(publishing.service.gov.uk\)](#)

- Net Zero Strategy

[Net Zero Strategy: Build Back Greener \(publishing.service.gov.uk\)](#)



# Sources

## The UK has one of the world's most attractive business environments

<sup>1</sup>[Pitchbook, Hot or Not: Where European VC Funding went in 2020](#)

<sup>2</sup>[www.gov.uk/guidance/corporate-tax](https://www.gov.uk/guidance/corporate-tax)

<sup>3</sup>[Total Workforce Index 2021](#)

<sup>4</sup> 90 countries from [Ranil Jayawardena – 2021 Statement on Free Trade Agreements – UKPOL.CO.UK](#) followed by agreement with Norway, Iceland and Liechtenstein ([July 2021](#)) and addition of Suriname to CARIFORM-UK EPA . Addition of [Australia](#).

<sup>5</sup> UK Automotive Priorities – Securing Success and Competitiveness: [UK Automotive Priorities - Securing Success and Competitiveness – SMMT](#)

<sup>6</sup> [UK Automotive Industry – SMMT](#)

<sup>7</sup> [UK motorsport industry in pole position for F1's 70th anniversary - GOV.UK \(www.gov.uk\)](#)

The UK is investing heavily into electrification

<sup>1</sup> <https://www.ukri.org/what-we-offer/our-main-funds/industrial-strategy-challenge-fund/future-of-mobility/faraday-battery-challenge/>

<sup>2</sup> <https://www.ukri.org/what-we-offer/our-main-funds/industrial-strategy-challenge-fund/future-of-mobility/driving-the-electric-revolution-challenge/>

<sup>3</sup> Transitioning to zero emission cars and vans: 2035 delivery plan ([publishing.service.gov.uk](#))

<sup>4</sup> <https://www.apcuk.co.uk/automotive-transformation-fund/>

<sup>5</sup> Transitioning cars and vans; Transitioning to zero emission cars and vans: 2035 delivery plan ([publishing.service.gov.uk](#))

## Our 2035 Delivery Plan

<sup>1</sup> All new homes to have EV charging points; Consultation Response: EV Charge points in Residential and Non-residential Buildings ([publishing.service.gov.uk](#))

<sup>2</sup> Transport Decarbonisation Plan; Decarbonising Transport – A Better, Greener Britain ([publishing.service.gov.uk](#))

<sup>3</sup> Transitioning to zero emission cars and vans; Transitioning to zero emission cars and vans: 2035 delivery plan ([publishing.service.gov.uk](#))

<sup>4</sup> Transitioning to zero emission cars and vans; Transitioning to zero emission cars and vans: 2035 delivery plan ([publishing.service.gov.uk](#))

<sup>5</sup> Transport Decarbonisation Plan; Decarbonising Transport – A Better, Greener Britain ([publishing.service.gov.uk](#))

<sup>6</sup> UK Trade Agreement with the EU; The Trade and Cooperation Agreement ([publishing.service.gov.uk](#))

<sup>7</sup> All new homes to have EV charging points; Consultation Response: EV Charge points in Residential and Non-residential Buildings ([publishing.service.gov.uk](#))

<sup>8</sup> EV infrastructure strategy

<sup>9</sup> Net Zero Strategy; Net Zero Strategy: Build Back Greener ([publishing.service.gov.uk](#))

<sup>10</sup> EV infrastructure strategy

<sup>11</sup> Net Zero Strategy; Net Zero Strategy: Build Back Greener ([publishing.service.gov.uk](#))





### Department for International Trade

The UK's Department for International Trade (DIT) has overall responsibility for promoting UK trade across the world and attracting foreign investment to our economy. We are a specialised government body with responsibility for negotiating international trade policy, supporting business, as well as delivering an outward-looking trade diplomacy strategy.

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Department for  
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