



Scotland - A Transformation to Low Carbon Mobility

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LCV2019 Event Sponsor:

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management by measurement

Transport Scotland: Transition To Low carbon Mobility

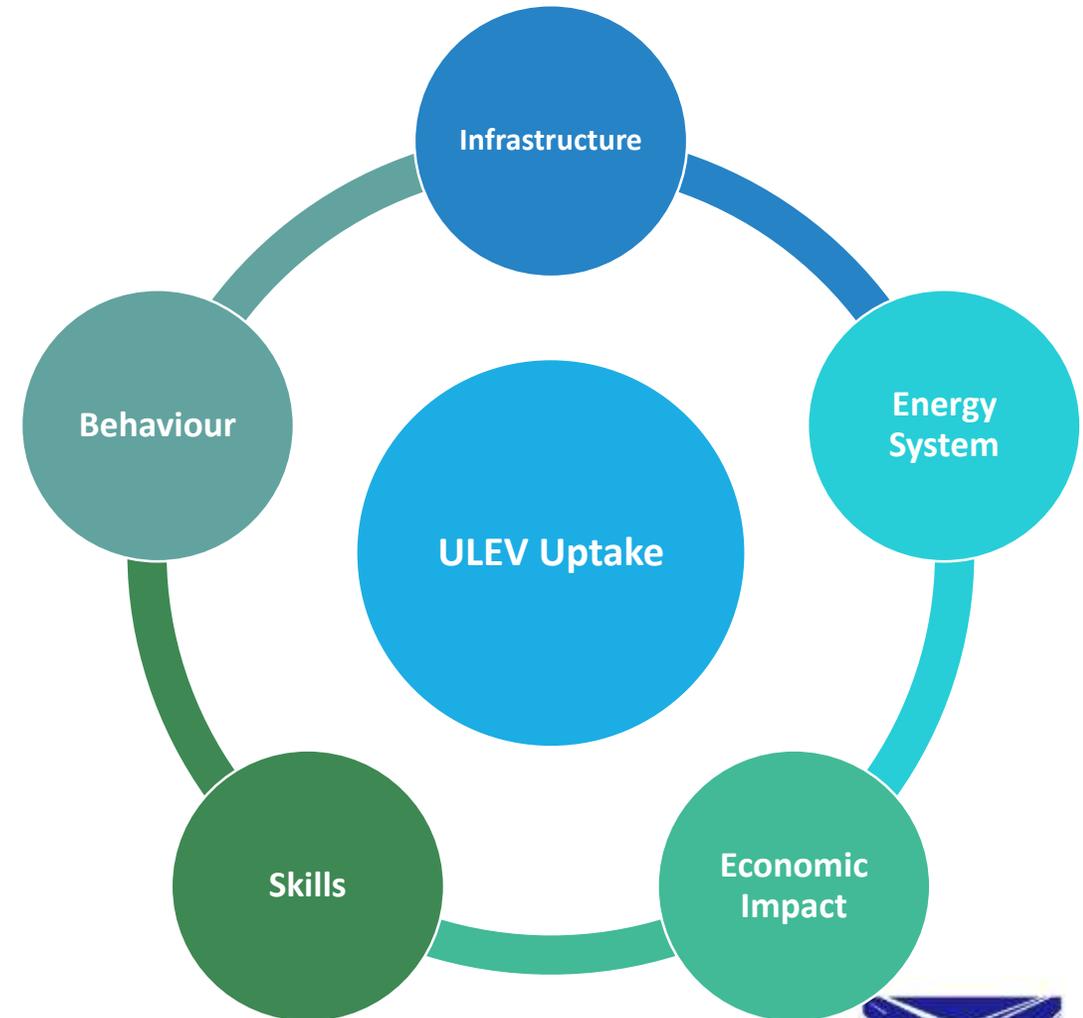
Cenex, September 2019



PfG 2018-19

WE WILL PHASE OUT THE NEED FOR NEW PETROL AND DIESEL CARS AND VANS BY 2032

- Expand electric charging infrastructure between now and 2022
- Large scale pilots across the country to support concentrated local action
- Scotland's first 'electric highway' on the A9
- Accelerate procurement of ULEVs – public and private



Past year

- Supported over 700 ULEV across the public sector vehicle fleet, with 1250 soon to be in operation
- Financed over 700 ULEV through our Low Carbon Transport Loan, and 1500 in past 5 years
- ChargePlaceScotland now exceeds 1000 charge points. 70% outside of cities. 3.2 miles average distance between chargers
- launched round 3 of our ERDF funded Low Carbon Travel and Transport Challenge fund to promote active and low carbon travel (£18M).
- Launched our Plugged in Households Scheme with 8 Housing Associations receiving a total of over £500k to provide shared access to EVs

Landscape changing quickly

- 29 new EV models in coming year (or so) – multibillion restructure in automotive OEMs
- Price parity EV batteries v's combustion engine 2023-25 (cars)
- 100+ new EV car companies (most in china)
- Radical new business models emerging (power companies and automotive OEMs)
- Commercially viable EV charging investments in some locations

Expect surge in EV growth by 2023, and already have indicators of exponential growth in Scotland

Our mission has evolved

Responsible for creating the strategic framework to coordinate the decarbonisation of Scotland's transport system

OUTCOMES

Scotland is at the forefront of markets for
Ultra Low Emission Vehicles

Scotland is a global destination for
innovation and investment in sustainable,
low carbon mobility

People and places benefit fairly from the
shift to sustainable, low carbon mobility

ENABLERS

ORIENTATION

Collectively focused on the right things

CAPABILITY

Capacity and capability to deliver
transformative action

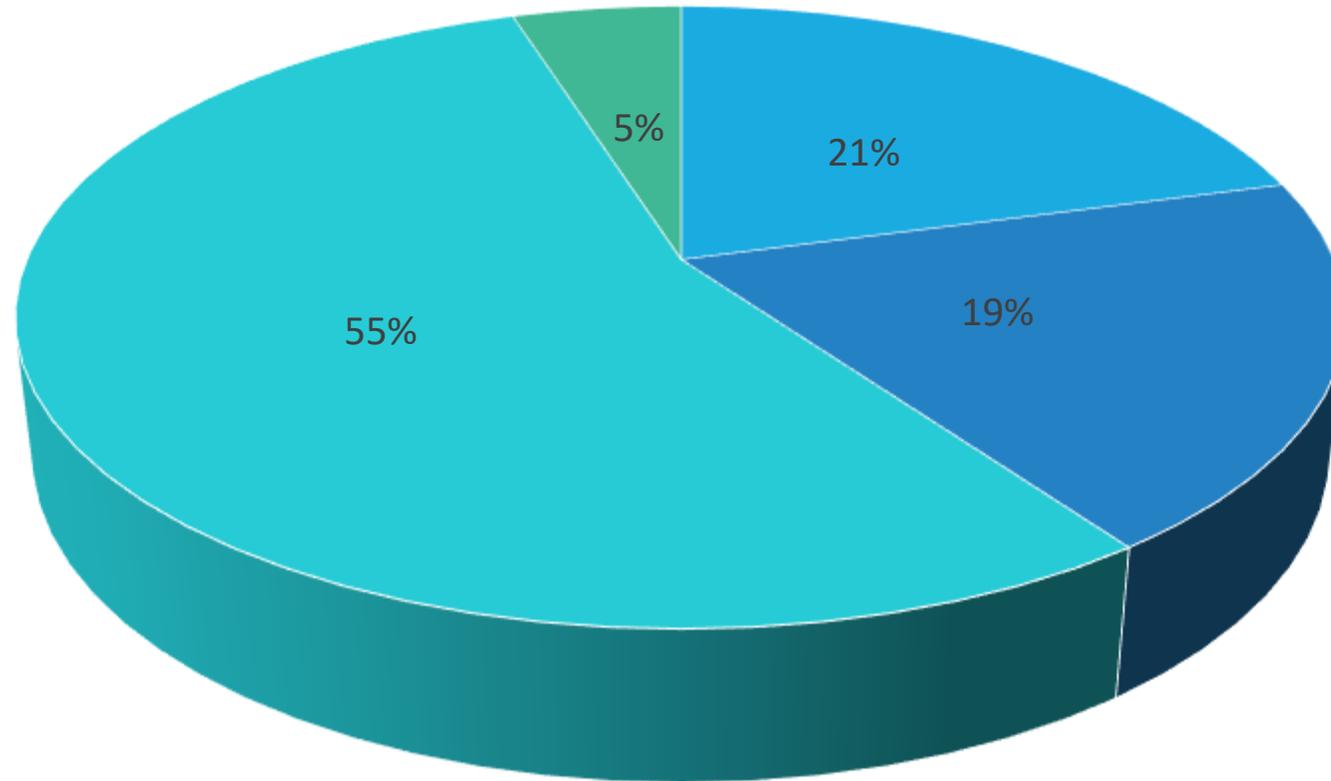
COLLABORATION

Leading and working together and across
boundaries

Growing network of collaborators

Organisation	Common interests	Form(s) of collaboration
Enterprise	Innovation in mobility, Supply chain growth Skills and workforce capabilities , Inward investment	<ul style="list-style-type: none"> • Inward Secondment • Joint Working Group • Strategic alignment meetings (CEO/Directors)
Skills development Scotland	Skills and workforce capabilities	<ul style="list-style-type: none"> • Part of our network to advance skills and sector transition
Energy Skills Partnership	Skills and workforce capabilities	<ul style="list-style-type: none"> • Funded a new skills initiative on EV technicians etc, with accompanying governance
Scottish Cities Alliance	Integration of with cities priorities	<ul style="list-style-type: none"> • Inward Secondment
CBI	Supply chain development and fleet conversions	<ul style="list-style-type: none"> • Collaborating on hosting workshops and sector engagement
Energy Network Companies	Integration of EV charging (and hydrogen production) into the energy system.	<ul style="list-style-type: none"> • Established a formal partnership and collaborative projects and investments • Inward secondment (Summer 2019), Outward secondment (later 2019)
Scottish Futures Trust	Financing models for EV charging investment	<ul style="list-style-type: none"> • Funded a project (and staff) within SFT develop a case for change in the delivery and financing of EV charging infrastructure.
LCVP	Fleets and technology	<ul style="list-style-type: none"> • Exploring a Scottish office that will better align their work to Scottish priorities
Scottish Funding Council	Innovation and research capability	<ul style="list-style-type: none"> • Key collaborator in enhancing Scotland's innovation capabilities in low carbon and future mobility technologies
Local Government	EV charging and fleets	<ul style="list-style-type: none"> • Key collaborator on local infrastructure provision and public sector leadership on zero emission fleets.
Under 2 coalition	International networking and knowledge	<ul style="list-style-type: none"> • Member of coalition

Current investment portfolio



- Infrastructure Investment
- Low carbon Transport Loan

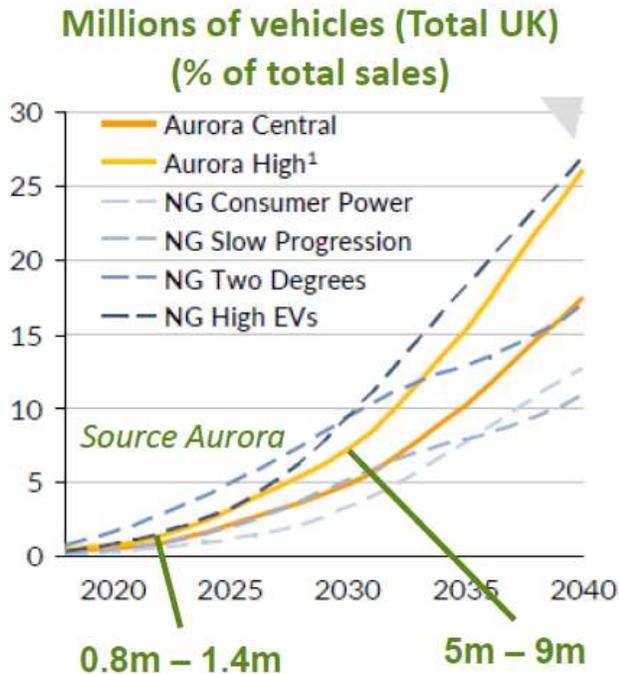
- Fleets and Incentives
- economy, innovation and transition

Case study: EV Charging and energy system

The Charging Point Landscape in Scotland

By 2032 we expect 1m EVs on the road in Scotland representing ~30% of the car fleet

Public chargers will be required to support this growth in vehicle numbers (industry estimates based on EU studies)



Industry Estimates

Rapid chargers : EVs = 50:1
Fast chargers : EVs = 10:1

2032 = ~100,000 Public chargers



Today ~1000

Case study: EV Charging and energy system

STRATEGIC OBJECTIVE

Support strategically coordinated investment in the charging network that reduces the need for electricity network upgrades and supports wider energy and transport system benefits.

How

- Investing in modelling and open access data;
- Established a new tools and collaborations to optimise our charging investments;
- Intensified our industry and business engagement (EV charging User forum);
- Formed new partnership with energy network companies;
- Working with SFT to prepare a Case for Change in financing and delivering infrastructure.

STRATEGIC OBJECTIVE – INNOVATION & SUPPLY CHAIN

Harness Scotland’s world class research and innovation expertise to support the expansion of Scotland’s low carbon transport manufacturing base, services and supply chains

Ambition:

- Double the size of Scotland’s transport OEMS and supply chains by 2025
- Double the size of Scotland’s research income in low carbon transport-related areas by 2025.

INDUSTRY LEADERSHIP AND COLLABORATION

Industry Advisory Group (Focused advice on Sector Growth in sustainable mobility)

Hydrogen Strategy/Assessment

Hydrogen Valley’s (Tayside, Glasgow)

INNOVATION AND DEMONSTRATION

Michelin-Scotland Innovation Parc

New Innovation network and support (sustainable mobility)

New Centre(s) of expertise

FACILITIES AND SCALING UP

Glasgow Procurement Initiative (1300 vehicles, and accompanying infrastructure)

Hydrogen Accelerator

Low carbon vehicle supply chain accelerator

Scottish Millbrook?

TRANSFORMATIONAL INVESTMENT

SNIB and innovative financing (Buses)

Green Investment Prospectus

PfG 2020-21

- Aviation- enable the decarbonisation of scheduled flights within Scotland by 2040
- Public Sector fleet targets] phase out petrol and diesel cars in Scotland's public sector fleet by 2025, and the need for all new petrol or diesel vehicles by 2030
- Charging and Energy System- New Strategic partnership with network companies and intensify engagement on long term financing and delivery models for EV charging infrastructure
- Bus decarbonisation: With the SNIB we will explore innovative financing to accelerate the deployment of zero emission buses

Innovation and supply chains

- Invest £2 million to take ideas for sustainable and zero carbon mobility to fully formed propositions suitable for large-scale investments
- Develop proposals for new centres of expertise for emerging technologies and business models, in sustainable, zero emission mobility
- Establish an Industry Group to advise on how Scotland's automotive sector can benefit from the transition to zero emission vehicles
- Establish a new supply chain accelerator programme to help public bodies and commercial partners to develop innovative solutions to the challenge of decarbonising [public sector] fleets
- Work with industry partners to assess the skills the Scottish motor trade will need to support the transition to zero emission mobility
- Establish a Hydrogen Accelerator Programme to quicken the update of hydrogen technologies within sustainable mobility

Decarbonisation of Air

- enable the decarbonisation of scheduled flights within Scotland by 2040
- Trial electric flights in next two years
- Decarbonise Highlands and Islands Airports



Decarbonisation of public sector transport

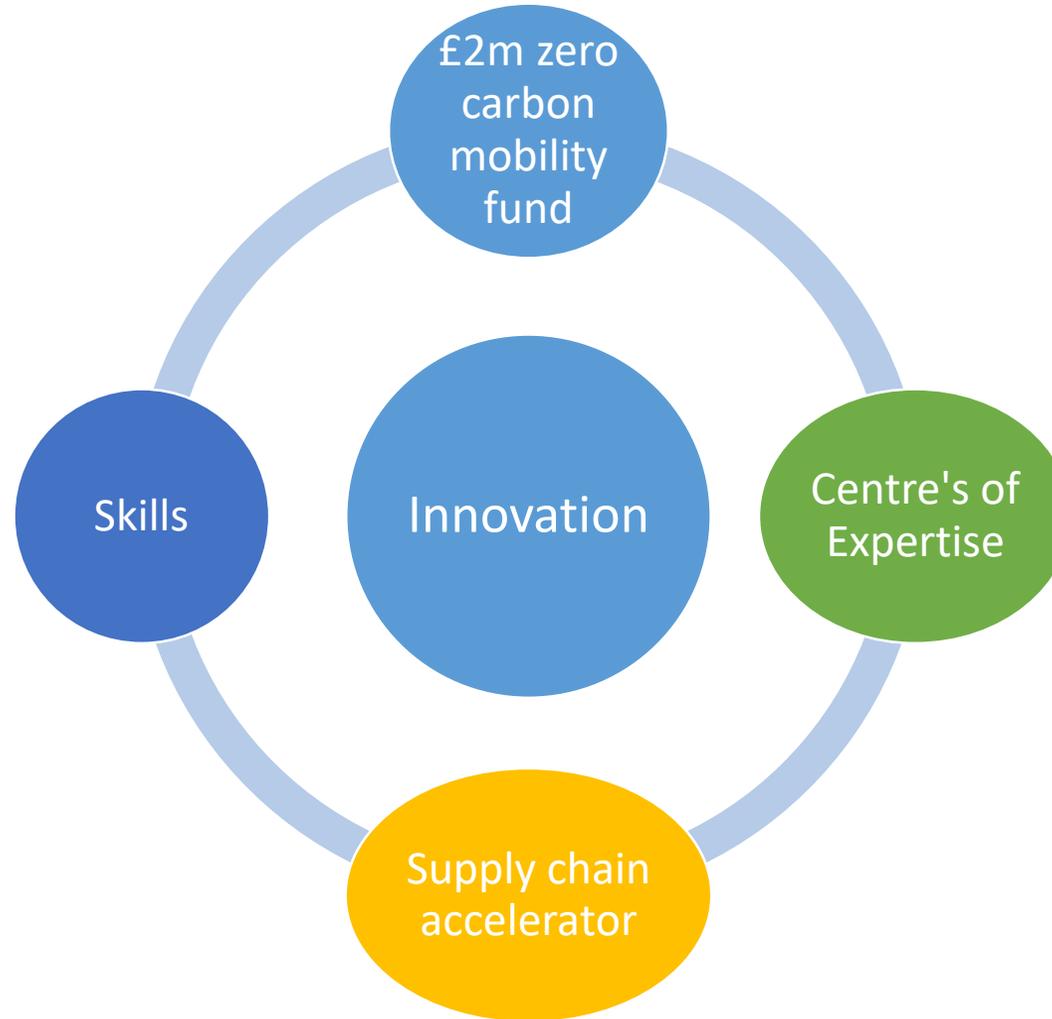
- Phase out petrol/diesel cars by 2025
- No new ICE vans post-2025
- Decarbonisation of all vehicles from 2030



Accelerate
deployment of zero-
emission buses



Innovation and future



Challenges and Considerations

- Continued role of Government
 - Medium and long-term
 - Funder
 - Enabler
- Equitable distribution
- Encouraging innovation

Thank You