

Transport Scotland

The national transport agency for Scotland



Chris McGhee

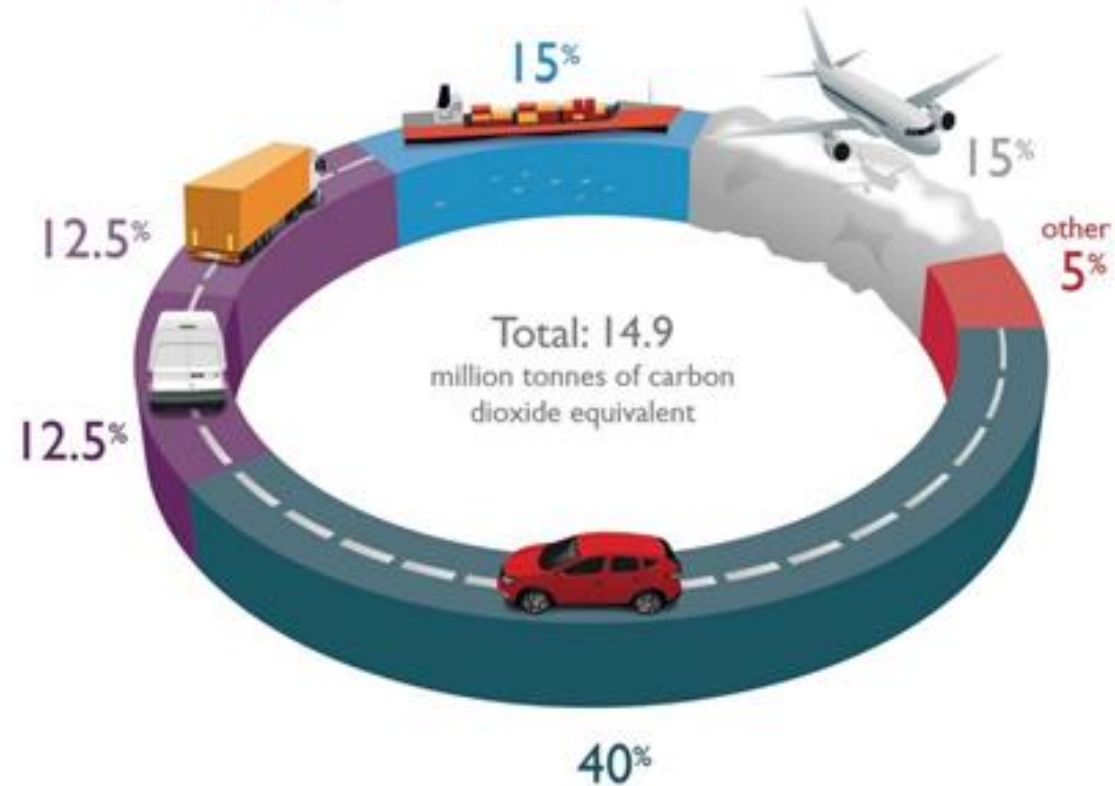
Skills for low carbon HDVs - presentation for the
Association for Public Service Excellence



Transport – the big emitter

Share of greenhouse gas emissions by mode in Scotland 2017

37% of Scotland's greenhouse gas emissions
are accounted for by transport



Why Heavy Duty Vehicles?

- 12.5% of the total emissions produced in Scotland by transport, are from Heavy Duty Vehicles.
- The number of goods vehicle trips, is forecast to increase by 44% between 2014 and 2037
- The inclusion of a target in the Climate Change Plan Update in December 2020, **“to remove the need for new petrol and diesel heavy vehicles by 2035”**.



How the research was carried out?



**Desk
research**



**50+ stakeholder
interviews**



**Telephone survey
of 44 HDV garages**

- Steering Group appointed to guide the research
- Desk-based review of relevant policies, strategies, papers, articles and other data sources, to provide input into projections of the development of the low carbon HDV fleet in Scotland,
- A structured telephone survey with HDV garages in Scotland, and
- Stakeholder engagement sessions, and a validation workshop.



**Skills for low carbon
Heavy Duty Vehicles**



Skills for low carbon Heavy Duty Vehicles

Scale of the skills development task

Number of employees in different parts of the HDV landscape



965

parts, components
manufacturers and
fuel producers



48,750

HDV owners/operators



5,700

Fire fighters



1,000

Vehicle manufacturers/
integrators



2,500

HDV Technicians



19,000

Police



2,225

Vehicle sales/leasing



180

DVSA inspectors/
examiners



6,700

Ambulance/
paramedics

Between **33,900** and **38,000** requiring skills development by **2026**

Between **41,500** and **54,400** requiring skills development by **2032**

Largest immediate demand for skills development from Emergency Services and DVSA due to potential involvement of low carbon HDVs in Road Traffic Incidents and roadside vehicle checking and examination requirements



Findings - Indicative take-up by application















	2026	2032
Bus and coach	Diesel	Diesel
	Battery Electric	Battery Electric
	Hydrogen Fuel Cell	Hydrogen Fuel Cell
	Hydrogen (direct combustion)	Hydrogen (direct combustion)
	Biomethane	Biomethane
HGV (3.5T to 18T)	Diesel	Diesel
	Battery Electric	Battery Electric
	Hydrogen Fuel Cell	Hydrogen Fuel Cell
	Hydrogen (direct combustion)	Hydrogen (direct combustion)
	Biomethane	Biomethane
HGV (18T+)	Diesel	Diesel
	Battery Electric	Battery Electric
	Hydrogen Fuel Cell	Hydrogen Fuel Cell
	Hydrogen (direct combustion)	Hydrogen (direct combustion)
	Biomethane	Biomethane
Other (e.g. construction, agriculture, etc.)	Diesel	Diesel
	Battery Electric	Battery Electric
	Hydrogen Fuel Cell	Hydrogen Fuel Cell
	Hydrogen (direct combustion)	Hydrogen (direct combustion)
	Biomethane	Biomethane


Key:
Leading use
Significant use
Lower scale use
Very limited/ no use


Different fuel types as a proportion of the total HDV fleet – by 2032 **diesel remains the dominant fuel type** in all HDV segments except bus and coach, where battery electric reaches similar levels of adoption




Findings – skills gaps and shortages

HDV Landscape segment	Skills gap	Skills shortages
Manufacture of parts, components, systems & fuels		
Vehicle manufacture/systems integration		
Charging/refuelling infrastructure developers/operators		
Vehicle sales/leasing		
Vehicle owners/operators		
Vehicle inspection, service, repair & maintenance, recovery and emergency services		
End of life/second life		

 No significant skills gap identified

 Emerging skills gaps in:

- Charging/refuelling infrastructure developers/operators (hydrogen)
- Vehicle sales/leasing
- Vehicle operators/owners
- End of life/second life

 Immediate need to develop skills of Emergency Service personnel and DVSA inspection and roadside examination staff



Addressing the findings

- Steering Group to discuss and agree how best to take forward the findings/recommendations in the report, and agree a set of actions to address them.
- “Low Carbon Heavy Duty Vehicle Skills” report published on Transport Scotland’s website
- Development and implementation of a decarbonising mobility skills strategy.



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Stuart Jackson

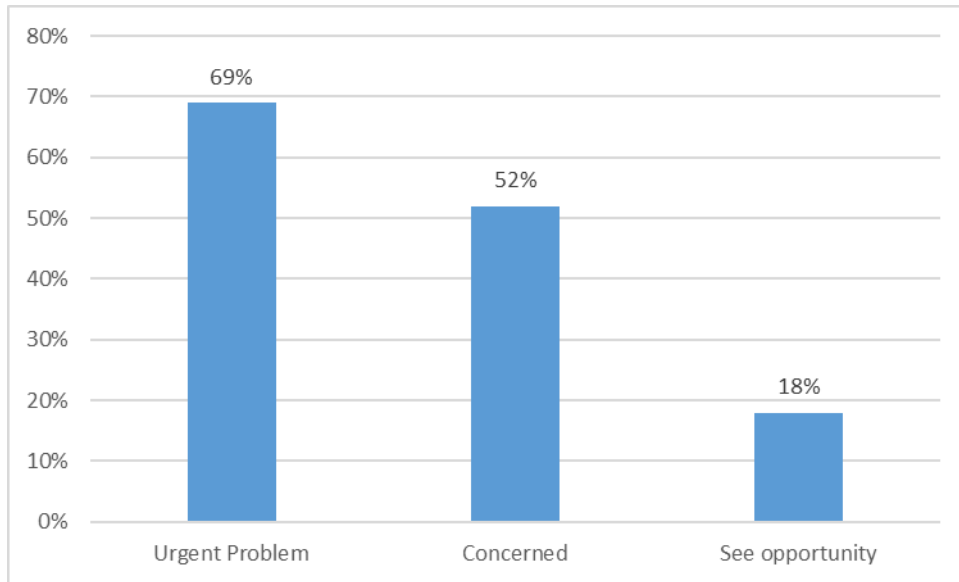
Next Steps for Transport Skills



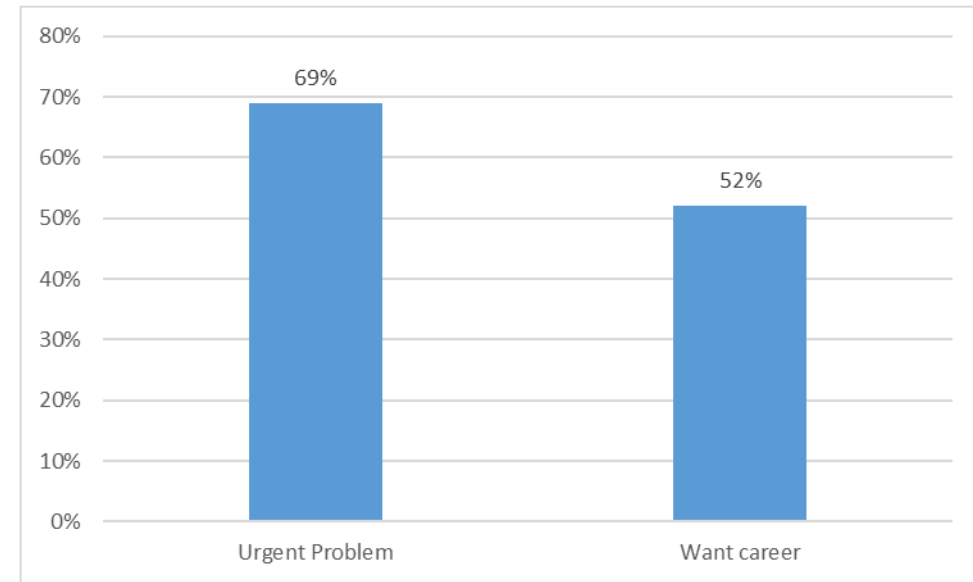
The way forward...

Decarbonising Mobility Skills Strategy

Organisations



16-24 year olds



Percentage of HDV fleet that is/ likely to be low carbon

	2021	2026	2032
Bus and coach	0.4%	10% to 25%	30% to 50%
HGV (3.5T to 18T)	0.04%	5% to 10%	15% to 40%
HGV (18T+)		1% to 5%	10% to 30%
Overall	<0.2%	5% to 12%	17% to 37%

The way forward...

Decarbonising Mobility Skills Strategy



Climate Emergency Skills Action Plan (CESAP)

Five Implementation Priorities

Aligned to three users, and an entire transport supply chain

Mapping existing provision, aligning to Scottish transport trends,

The way forward...

Decarbonising Mobility Skills Strategy



Implementation Priority 1

Inspiring and empowering young people to engage with the transition to net zero.

Implementation Priority 2

Support transitioning and upskilling to meet emerging green jobs skills needs through the creation of a Green Jobs Workforce Academy.

Implementation Priority 3

Securing the talent pipeline for future net-zero jobs by aligning WBL, FE and HE provision behind the needs of the net-zero transition.

Implementation Priority 4

Helping employers and individuals to capitalise on net zero transition opportunities and facilitating behaviour change through a Green jobs Skills Hub.

Implementation Priority 5

Driving change in the skills system.

- Rapid expansion and national scaling of Climate Education in Schools
- Embed green skills into apprenticeship frameworks aligned to net zero occupations
- Promote emerging green careers opportunities to young people

•Establish a Green Jobs Workforce Academy

- National Transition Training Fund

- Develop an understanding of whether WBL, FE and HE provision currently meets the needs of the net-zero transition
- Develop new work-based learning pathways to capitalise on net-zero opportunities
- Align WBL, education and training opportunities in colleges and universities to maximise uptake of net-zero opportunities

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- Ongoing industry-led future insight programme
- Develop and maintain an extended network of the Skills Groups in sectors critical to the net zero transition
- Identify emerging regional economic opportunities from the net zero transition and mobilise regional skills investment

Low carbon mobility skills mapping

	TRAINERS	YOUTH	LEADERS	EXPERIENCED
DEVELOPERS				
MANUFACTURERS				
SELLERS/LEASERS/ BUYERS				
UTILISERS				
MAINTAINERS				



The way forward...

Decarbonising Mobility Skills Strategy



The strategy takes a view across all modes of transport utilised in Scotland and seeks to develop an approach that covers the whole supply chain and target groups to deliver a Just Transition.

- Monitor ongoing skills gaps, by working with industry, academia, and skills delivery organisations to best understand skills training needs.
- Work with skills providers to arrange the development and delivery of skills training for the medium term for Innovators and Users
- Conclude existing projects to ensure skills provision exists in 3-4 years' time for EVs.
- Ensure our funding targets the right areas: trainers (train the trainer), the young (to inspire them into the sector), the experienced (to reskill/retrain) and business leaders (to drive investment).

The way forward...

Decarbonising Mobility Skills Strategy



- There's some great work already underway
 - Hydrogen STEM Challenge
 - EST Dealership Training
 - EST Train the Trainer
 - Apprenticeships in freight logistics, automotive, bus and coach maintenance
 - EST Public Sector Fleet Forum

The way forward...

Decarbonising Mobility Skills Strategy



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