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# **ROAD FREIGHT TRANSPORT SMEs: TRADING, OPERATIONAL AND DECARBONISATION PERSPECTIVES**

**Briefing Report – Summary Slide Set**

**Technical Report ENG-TR.030**

**Julian Allen, Maja Piecyk and Mengqiu Cao**

**University of Westminster**

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# Review of existing data sources & surveys of road freight transport SMEs

- Market profile – no. of businesses, employment & turnover by size of business over time (UK Government data: ONS, BEIS)
- History & financial circumstances (BEIS, British Business Bank, BVA BDRC)
  - history of road freight transport SMEs and longer-term profitability and growth
  - views on external finance among road freight transport SMEs
  - impacts of Brexit and Covid-19
- Goods vehicles, operator licences and driver issues (Traffic Commissioners)
- Vehicle maintenance & operating contraventions (Traffic Commissioners, DVSA)
- Energy efficiency & decarbonisation among SMEs (DfT, McKinnon and Toelke, BEIS)
  - awareness of and views on fuel efficiency and decarbonisation
  - current and future actions taken
  - challenges and barriers to action
  - enablers of action
  - vehicle / fleet replacement issues
- Conclusions & potential stakeholder actions

# SME business definition used by UK Government

SMEs {

Type of business	Number of employees	Turnover
Micro business	< 10 employees	< £2 million
Small business	10-49 employees	£2-10 million
Medium-sized business	50-249 employees	£10-50 million
Large business	> 250 employees	> £50 million

## Estimated number of businesses in the UK private sector and their associated employment and turnover, by size of business, 2021

Size of business	Number of employees	Total number of businesses		Total employment		Total turnover	
		Thousand	%	Million	%	£ Billion	%
Micro	0 (unreg)	2,931	52.4%	0.0	11.9%	111	2.5%
	0 (reg)	1,244	22.3%	0.9	4.9%	192	4.3%
	1	134	2.4%	0.1	1.1%	25	0.6%
	2 to 4	765	13.7%	2.0	7.9%	351	7.9%
	5 to 9	263	4.7%	1.7	6.6%	261	5.9%
Small	10 to 49	211	3.8%	4.1	15.2%	650	14.6%
Medium	50 to 249	36	0.6%	3.5	12.9%	721	16.2%
Large	250+	8	0.1%	10.6	39.4%	2,139	48.1%
<b>TOTAL</b>		<b>5,591</b>	<b>100%</b>	<b>22.9</b>	<b>100%</b>	<b>4,449</b>	<b>100%</b>

- 5.6 million businesses in UK in 2021 SMEs (less than 250 employees) accounted for 99.9% of these businesses, 61% of employment and 52% of turnover in the UK
- Micro businesses (0-9 employees) accounted for 95% of all businesses, 32% of employment and 21% of turnover

Source: BEIS, 2021a. Notes: Data is for the start of the year.

Includes all registered and unregistered businesses; for businesses with zero employees: 'unreg' = unregistered, 'reg' = registered.

Businesses with only one PAYE employee are counted in the "zero employees" category, rather than the "1 employee" category.

BEIS impute the turnover of unregistered businesses based on the turnover for zero-employee VAT/PAYE registered businesses at an industrial sector level.

## Change in the number, employment and turnover of private businesses in the UK, 2010-2019 by size of business

Size of business (by number of employees)	Change in number of businesses (%)	Change in employment (%)	Change in turnover (%)
With no employees*	35%	37%	44%
1 employee	-20%	-22%	-13%
2-4 employees	27%	18%	73%
5-9 employees	19%	16%	13%
6-10 employees	24%	22%	30%
50-249 employees	28%	28%	46%
250 or more employees	29%	18%	20%
All businesses	31%	22%	29%
All SMEs	31%	25%	39%

- Overall, there were 1.4 million (31%) more SME private businesses in the UK in 2019 than in 2010
- The number of businesses with no employees grew far faster than any other category over the period from 2010 to 2019 (by 37%), with the number of unregistered business with no employees growing slightly faster than registered businesses with no employees (37% compared with 35%).

Notes:

\* - includes registered and unregistered business with no employees.

Data is for the start of the year.

Includes all registered and unregistered businesses.

Source: calculated from data in BEIS, 2010 and 2019.

# Internal barriers in SMEs that prevent the adoption of environmental improvements

Resources	Attitudes and company culture	Awareness
<ul style="list-style-type: none"> <li>• Severe time pressure in small enterprises</li> <li>• Lack of time to investigate issues or locate support or tools</li> <li>• Lack of resource allocation to address environmental issues</li> <li>• Lack of investment in training</li> <li>• Cost constraints on investment</li> <li>• No employee allocated responsibility for environmental issues</li> </ul>	<ul style="list-style-type: none"> <li>• Belief that SMEs have low environmental impact and have no environmental issues to consider</li> <li>• Mismatch between beliefs and actions: positive attitude toward the environment is not translated into actions</li> <li>• Perception that environment has no relevance to the business: environment given no status as a business issue</li> <li>• Scepticism about the potential cost savings and market benefits</li> <li>• Prevalence of short-term business planning; belief that costs of environmental measures arise quickly while benefits accrue slowly</li> </ul>	<ul style="list-style-type: none"> <li>• Low awareness of environmental legislation</li> <li>• Low awareness of support organisations &amp; information</li> </ul>

# SMEs and GHG emission decarbonisation

- Lack of comprehensive data on greenhouse gas (GHG) emissions from SMEs
- One study (involving survey work with 1200 SMEs) estimated UK SMEs (less than 250 employees) (British Business Bank, 2021):
  - emit 53% of all business-related GHG emissions, with other 47% due to larger businesses
  - account for approximately 30% of total GHG emissions in the UK (i.e. taking into account residential & other non-businesses sources of GHG emissions)
  - estimated that 76% of SMEs were in earliest two of four maturity stages in transition to net zero emissions
- Survey work by European Investment Bank showed that in 2020, 37% of businesses across EU were investing in measures to improve energy efficiency. However, energy efficiency actions & investment varied by business size, with 49% of large businesses making such investments compared with 27% of SMEs (European Investment Bank, 2020)
- Large businesses in EU far more likely to have put in place energy consumption and GHG emissions monitoring & set company targets. In 2019, 74% of large businesses in EU had internal energy audit system in place & 58% had set targets for energy consumption / GHG emissions. By comparison, 37% of SMEs in EU had internal energy audit system in place & 26% had set targets for energy consumption (European Investment Bank, 2020)
- Survey work in UK found that 36% of SMEs had conducted training on environmental matters, while 31% had undertaken environmental audits or reports (Enterprise Research Centre, 2020)
- Another UK survey of SMEs found that only 32% of them have a consistently documented & implemented energy policy (Carbon Trust, 2020)

# SMEs and GHG emission decarbonisation

- Survey work among SMEs specifically in UK found barriers to decarbonisation (in order of importance): money, time, not knowing where to start, other priorities, not knowing where to find help, uncertainty about what it means, government policies, and lack of belief that it will make a difference (Broadway Initiative, 2021)
- UK survey of SMEs found lack of time and money were given as main barriers to act on improving energy efficiency (cited by 46% of respondents as a barrier compared to 15% or lower for other barriers) (Carbon Trust, 2020)

Primary focus	Common Barriers	Common Drivers
<b>Internal / intra-organisational-level</b>	<ul style="list-style-type: none"> <li>• Lack of awareness</li> <li>• Lack of specialist knowledge / technical skills</li> <li>• Limitations in absorptive capacity / organisational learning</li> <li>• Competing priorities / lack of time</li> <li>• Resource constraints</li> <li>• Access to capital</li> <li>• Short term tenancy agreements</li> <li>• Lack of strategic alignment</li> </ul>	<ul style="list-style-type: none"> <li>• Cost savings</li> <li>• Risk mitigation</li> <li>• Pro-environmental values</li> <li>• Reputation and image</li> <li>• Staff morale</li> </ul>
<b>External / inter-organisational level</b>	<ul style="list-style-type: none"> <li>• Lack of trusted brokers / intermediaries</li> <li>• Information deficit regarding opportunities</li> <li>• Principal-agent / split-incentive problem</li> </ul>	<ul style="list-style-type: none"> <li>• Compliance</li> <li>• Competitive advantage</li> <li>• New market opportunities</li> <li>• Corporate reputation</li> <li>• Public subsidy</li> </ul>



# History of SMEs in road freight transport (1)

- Road freight transport sector in the UK has comprised many small businesses since its inception
- Prior to 20<sup>th</sup> century, many individuals provided local carrier services in their rural or town vicinity using a horse & cart or a packhorse
- Businesses larger than a single vehicle began to emerge for inter-urban services which operated from coaching inns but even the vast majority of these would be categorised in today's terms as micro or small businesses
- By the 19<sup>th</sup> century some large parcel carriers had emerged such as Pickfords, Carter Paterson & McNamara, that provided horse-powered local delivery & collection services in conjunction with rail freight trunked movements
- These businesses went on to adopt motorised goods vehicles when they became available in early twentieth century, but most road freight businesses remained very small
- After First World War, UK Government sold off (relatively inexpensively) approximately 40,000-50,000 reconditioned goods vehicles that had been used during the war effort & were no longer required
- These supplemented existing motorised goods fleet used by commercial freight businesses to keep country running during the war & gave many individuals the opportunity to establish themselves as self-employed providers of road freight transport services
- Many ex-servicemen, who learned to drive during time in armed services, entered road freight industry

# History of SMEs in road freight transport (2)

- Demand for road freight services grew rapidly leading to number of goods vehicles fleets doubling between 1919-1921 (to 128,000), & continuing to increase annually throughout the 1920s & 1930s
- By 1938, almost half a million goods vehicles used by both own account & hire or reward operators
- Own account operators operated more goods vehicles than hire or reward sector, especially after introduction of operator licensing in 1933 which limited growth rates of hire or reward sector through quantitative licensing controls
- These controls intended to prevent rail freight being undercut and losing business, as well as to address poor operating & safety practices such as overloading, long drivers' hours & poor vehicle maintenance
- Survey worked showed that in Britain in 1936, 53% of goods vehicles used primarily for hire or reward were operated in fleet of one vehicle, 19% in fleets of two vehicles, 23% in fleets of 3-9 vehicles, 3% in fleets of 10-19 vehicles, & only 1% in fleets of 20 or more vehicles
- In this survey work, in South East region of England in 1936, 95% of goods vehicles used primarily for hire or reward were operated in fleets of less than 10 vehicles (with 56% in fleet of 1 vehicle and 17% in fleets of 2 vehicles)

# History of SMEs in road freight transport (3)

- Survey work in the South East region provides insight into goods vehicle operator licences by fleet size in 1932, 1953 and 1965 - indicating vehicle fleet sizes increased over this time period

## Goods vehicle operator licences primarily for hire or reward by fleet size in the South East, 1932, 1953 and 1965

Fleet size	Proportion of operator licences used primarily for hire or reward		
	1938	1953	1965
1	50%	38%	33%
2	17%	17%	17%
3-6	24%	27%	25%
7-10	4%	14%	12%
11-20	4%	4%	8%
Over 20	1%	1%	4%
<b>Total</b>	100%	100%	100%
<b>Survey size (number)</b>	1,244	132	178

Source: quoted in Baylis, 1971.

# History of SMEs in road freight transport (4)

- Subsequent market research survey work in UK in 1992 & 2001 indicates that fleet sizes of operators providing hire or reward services continued to increase over time
- These surveys indicated that 32% of goods vehicles used primarily for hire or reward services were in fleet sizes of up to ten vehicles in 1992, & 26% in 2001

**Goods vehicles operated by businesses providing hire or reward services by fleet size in the UK, 1992**

Fleet size	Proportion of businesses	Proportion of goods vehicles
1-4	69%	16%
5-10	18%	16%
11-25	10%	20%
26-50	2%	11%
51+	1%	37%
<b>Total</b>	<b>100%</b>	<b>100%</b>

Note: Based on a random sample of 1,000 businesses.  
Source: MAI Research Ltd, 1992.

**Goods vehicles operated by businesses providing hire or reward services by fleet size in the UK, 2001**

Fleet size	Proportion of businesses	Proportion of goods vehicles
1-2	44%	6%
3-5	22%	8%
6-10	16%	12%
11-25	11%	18%
26-50	4%	14%
51+	3%	42%
<b>Total</b>	<b>100%</b>	<b>100%</b>

Note: Based on a random sample of 1,500 businesses.  
Source: NOP Research Group, 2001.

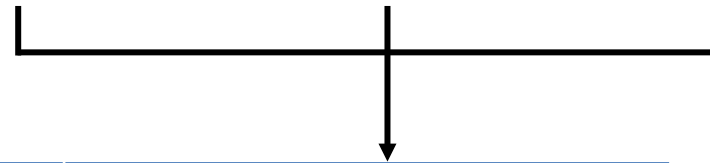
# Continued importance of SMEs in UK road freight transport to present day

- Growing relative importance of hire or reward sector compared to own account sector in Britain over last 60 years as companies focus on core business & subcontract road freight services (hire or reward accounted for 71% of total road freight tonne kilometres in 2020)
- Business size in hire or reward sector have increased over the decades - due to demands for ever-more sophisticated logistics services, preference of large customers to work closely with a single logistics provider, & associated need for investment in supply chain computing and technology
- However, legacy of small businesses in road freight sector persists due to relatively low entry costs & barriers, with often only a goods vehicle required to set up in business – leading to highly price competitive and low-profit margin sector:
  - Prior to Covid-19 pandemic average profit margins in road freight sector were 2-3% per annum
  - However, an assessment of UK's 2000 leading road freight transport operators in 2021 found their average profit margin in latest financial year was only 1.7% (Evans, 2021)
  - Even among top 100 road freight transport operators by turnover, using published accounts in October 2021, median pre-tax profit margin over previous 12 months was 2.6%, with 55 of these companies having profit margins of less than 3%, 42 of them having profit margins of less than 2%, 30 of them having profit margins of less than 1%, and 21 of them making a pre-tax loss (calculated from data in Motor Transport, 2021)
- Other factors that have helped ensure many small road freight businesses continue to exist (Freight Transport Association, 2019):
  - Growth in subcontracting by large freight operators to smaller ones
  - Self-employment, for reasons including keeping workers or vehicles beyond the larger businesses' payroll or balance sheet to manage peak business & ensure workers are 'flexible' plus tax advantages this can offer (until IR35 tax changes were implemented)
  - widespread use of such subcontracting in freight sectors including delivery of parcels & packages & in construction & quarrying industries

# Companies providing road freight transport services in Britain, 2019

	Freight transport by road	Removals	Post and courier	All companies in Britain
Number of companies	49,330	2,425	22,275	2,643,875
Total employment	281,000	18,000	258,000	31,088,000
Ave. employment per company	5.7	7.4	11.6	11.8

Source: Inter Departmental Business Register and Employment Survey, ONS 2020



	All road freight operators*
Number of companies	74,030
Total employment	557,000
Ave. employment per company	7.5

\* - includes freight transport by road, removals, and post & courier

# Businesses in road freight and UK as a whole by no. of employees, 2021

Size of business	Number of employees	Freight transport by road	Post and courier	Removals	All road freight transport businesses	All UK businesses
Micro	0 to 4	83.8%	95.1%	71.5%	87.7%	78.7%
	5 to 9	9.9%	3.0%	16.1%	7.5%	11.1%
Small	10 to 49	5.3%	1.6%	11.3%	4.1%	8.4%
Medium	50 to 249	0.9%	0.3%	1.1%	0.6%	1.4%
Large	250+	0.1%	0.1%	0.0%	0.1%	0.3%
<b>TOTAL (%)</b>		100%	100%	100%	100%	100%
<b>TOTAL (no.)</b>		63,305	39,160	2,740	105,205	2,752,630

Note: only includes registered businesses specialising in road freight transport activities.

Source: analysis of Inter Departmental Business Register – Nomis: ONS, 2021.

- Micro businesses (<10 employees) accounted for 95% of road freight transport businesses in UK in 2021 compared with 90% of all businesses in UK
- SMEs accounted for 99.9% of road freight transport businesses in UK in 2021

# Growth in number of businesses in road freight & in UK as whole, 2010-2021

Size of business	Number of employees	Freight transport by road	Post and courier	Removals	All road freight transport businesses	All UK businesses
Micro	0 to 4	127%	261%	98%	166%	37%
	5 to 9	100%	19%	38%	78%	12%
Small	10 to 49	25%	19%	41%	25%	18%
Medium	50 to 249	22%	82%	0%	27%	20%
Large	250+	27%	25%	N/A	27%	20%
<b>TOTAL (%)</b>		<b>113%</b>	<b>229%</b>	<b>76%</b>	<b>143%</b>	<b>31%</b>

Note: only includes registered businesses specialising in road freight transport activities

Source: analysis of Inter Departmental Business Register – Nomis: ONS, 2021.

- Growth in business numbers especially strong among micro road freight transport businesses with 0-4 employees.
- Analysis indicates growth much stronger among self-employed registered businesses than those with employees.
- Some of those businesses with no employees may be working on a regular basis for larger companies but



# Freight transport by land and removals subsector: Number, employment & turnover of businesses with employees in UK, 2021

## Freight transport by road and removals sub-sector

Size of business	Number of employees	Businesses	Employment (000s)	Turnover (£ million)
Micro	1 to 9	86%	33%	23%
Small	10 to 49	12%	23%	26%
Medium	50 to 249	2%	19%	24%
Large	250+	0%	26%	27%
<b>TOTAL (%)</b>		100%	100%	100%
<b>TOTAL (no.)</b>		29,865	286	31,759

Micro and small:  
98% of businesses  
56% of employment  
59% of turnover

SMEs:  
99.8% of businesses  
74% of employment  
73% of turnover

## All businesses in the UK

Size of business	Number of employees	Businesses	Employment (000s)	Turnover (£ million)
Micro	1 to 9	82%	19%	15%
Small	10 to 49	15%	18%	16%
Medium	50 to 249	3%	16%	17%
Large	250+	1%	47%	52%
<b>TOTAL (%)</b>		100%	100%	100%
<b>TOTAL (no.)</b>		1,415,980	22,433	4,146,651

Micro and small:  
97% of businesses  
37% of employment  
33% of turnover

SMEs:  
99.5% of businesses  
53% of employment  
48% of turnover

Note: only includes registered businesses with employees specialising in road freight transport activities.

Source: BEIS, 2021

## Post and courier subsector:

# Number, employment and turnover of businesses with employees in the UK, 2021

### Post and courier sub-sector

Size of business	Number of employees	Businesses	Employment (000s)	Turnover (£ million)
Micro	1 to 9	88%	8%	7%
Small	10 to 49	10%	5%	7%
Medium and Large	50 to 249	2%	87%	87%
TOTAL (%)		100%	100%	100%
TOTAL (no.)		5,970	236	21,591

Micro and small:  
98% of businesses  
13% of employment  
14% of turnover

Far more market concentration in terms of turnover than road freight and removals subsector

### All businesses in the UK

Size of business	Number of employees	Businesses	Employment (000s)	Turnover (£ million)
Micro	1 to 9	82%	18%	16%
Small	10 to 49	15%	18%	16%
Medium and Large	50 to 249	3%	63%	68%
TOTAL (%)		100%	100%	100%
TOTAL (no.)		1,409,950	22,663	3,845,465

Micro and small:  
97% of businesses  
36% of employment  
32% of turnover

Note: only includes registered businesses with employees specialising in road freight transport activities.

Source: BEIS, 2021

Plus in 2019, 44,700 post & courier businesses with no employees = 88% of all businesses, 17% of all employment & 7% of all turnover

# Lack of financial turnover experienced by transport and storage SMEs during Covid pandemic

Extent of change in business turnover experienced over the previous 12 months, 2019 and 2020, UK

	Transport and storage SMEs with employees		Transport and storage SMEs with no employees	
	2019	2020	2019	2020
Substantial growth	13%	5%	6%	10%
Significant growth	9%	7%	9%	0%
Moderate growth	12%	7%	11%	2%
Growth, don't know how much	1%	0%	0%	0%
No change	47%	16%	41%	17%
Minor shrinkage	4%	5%	5%	2%
Significant shrinkage	7%	15%	10%	6%
Substantial shrinkage	3%	41%	14%	62%
Shrinkage, don't know how much	1%	2%	0%	2%
Don't know/ Refused	4%	1%	5%	0%
Total	100%	100%	100%	100%
Sample size	348	205	92	65

Source: BEIS, 2020, 2021

- Survey shows contrast in experience of respondents' businesses before and during Covid-19, with 63% of transport and storage SMEs with employees and 72% of those with no employees experiencing some degree of shrinking in 2020, with majority of these reporting 'substantial shrinkage' (in marked contrast to respondent's business turnover in 2019)

# Impact on business operations experienced by transport and storage SMEs during Covid pandemic

Which best describes how your business adapted during the Covid lockdown restrictions, 2020, UK

	SMEs with employees		SMEs with no employees	
	Transport and storage SMEs	All SMEs	Transport and storage SMEs	All SMEs
<b>Business closed down completely (temporarily)</b>	21%	31%	29%	33%
<b>Operations were reduced</b>	62%	47%	59%	45%
<b>Business was unaffected by Covid-19 restrictions</b>	15%	15%	6%	16%
<b>Operations were increased</b>	2%	6%	5%	6%
<b>Don't know</b>	1%	1%	0%	0%
<b>Refused</b>	0%	0%	0%	0%
<b>Total</b>	100%	100%	100%	100%
<b>Sample size</b>	205	5597	65	2022

Source: BEIS, 2020, 2021

- Approximately 80% of transport and storage SMEs experienced reduction in operations or total business closure in 2020 Covid lockdown
- More transport and storage SMEs experienced reduced operations during Covid than across SMEs as a whole

# Analysis of HGV and LGV fleet sizes

## Operator licences and goods vehicles specified on them in Britain, 2020/21

Fleet Size	Licences	Vehicles
0	12%	0%
1	34%	6%
2-5	34%	17%
6-10	9%	12%
11-20	6%	14%
21-50	4%	19%
51+	2%	32%
Total (%)	100%	100%
Total (no.)	69,528	369,287

Source: analysis of data in Traffic Commissioners, 2022

- 23% of HGVs on licences with fleet sizes of 5 or fewer vehicles
- 35% of HGVs on licences with fleet sizes of 10 or fewer vehicles

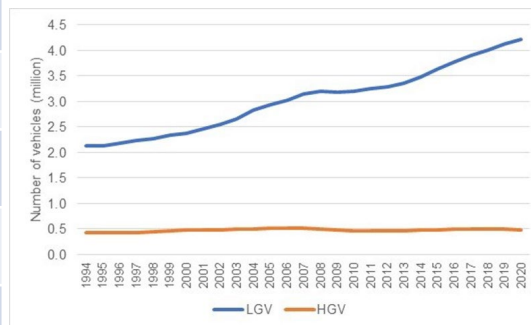
## Estimates fleet size of LGVs (vans) registered to businesses and private individuals in the UK, 2020

LGV fleet size	Proportion of LGVs
1	62%
2-5	15%
6-10	6%
11-20	5%
21-50	4%
51-100	4%
100+	4%
Total	100%
Total (no.)	4.2 million

Source: analysis of data in Department for Transport, 2021

- Estimate that approx. 60% of LGVs in UK in fleets of 1 vehicle
- Another 20% of LGVs in fleet sizes of 2-10 vehicles

## Goods vehicles licensed in Britain, 1994-2020



Source: Department for Transport, 2021

More than 8 times as many LGVs than HGVs

# Purchasing methods for Light Goods Vehicles (vans) in Britain

Purchasing method	Private individual	Company-owned	All LGVs
New: owned outright	14%	34%	26%
New: hire purchase agreement	4%	21%	13%
Second-hand: owned outright	76%	34%	51%
Second-hand: hire purchase agreement	5%	7%	6%
Don't know / I wasn't involved in the purchase	1%	4%	3%
Not answered	0%	1%	1%
All	100%	100%	100%

Source: DfT Van Survey, 2020

- BVRLA data (2020): 44% of HGVs purchased outright (new or second-hand)

# Age of goods vehicle fleet in Britain, 2019

Vehicle age	Heavy Goods Vehicles	Light Goods Vehicles
Up to 3 years	29%	25%
4-6 years	23%	23%
7-10 years	21%	22%
11-15 years	15%	19%
16-20 years	6%	4%
More than 20 years	4%	6%
Unknown	3%	2%
<b>Total</b>	<b>100%</b>	<b>100%</b>

Source: DfT, 2020

## HGVs:

- Average age is 7.4 years
- 46% - 7 or more years old
- 25% - 11 or more years old

## LGVs:

- Average age is 8.3 years
- 51% - 7 or more years old
- 29% - 11 or more years old

# Transport, storage and communication SME views on external finance and borrowing, 2020, UK

Statement	Respondents in agreement with statement (%)
Happy to use external finance to help the business grow and develop	34%
Current plans for the business are based on what we can afford ourselves	83%
We will accept a slower rate of growth rather than borrowing to grow faster	78%
Because the future feels uncertain we are being very cautious with our plans for the business	74%
A further increase in the cost of credit would make us less likely to apply for new external finance	60%
As a business we are prepared to take risks to be more successful	41%

Source: BVA BDRC, 2021.

- HGVs and LGVs purchased outright and those purchased second-hand most likely to be done so by SMEs
- Disinclination to borrow money among SMEs has major implications for vehicle replacement and uptake of new technology to meet net zero target



# Importance of cost components in goods vehicle operating costs, 2021

## Importance of operating cost categories by type of goods vehicle for road freight transport businesses with employees, UK, end of 2021

Operating cost categories	44t artic tractor unit and trailer	32t rigid tipper	18t rigid curtain-sider	7.5t rigid curtain-sider	3.5t panel van
Driver costs <sup>1</sup>	28%	29%	38%	41%	55%
Fuel costs <sup>2</sup>	34%	31%	24%	23%	12%
Vehicle finance & tax costs <sup>3</sup>	15%	17%	18%	15%	14%
Overheads <sup>4</sup>	13%	13%	14%	14%	15%
Maintenance/repair & tyre costs	9%	10%	6%	7%	4%
<b>Total costs</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>
Assumed annual mileage	80,000	60,000	60,000	60,000	30,000

## Importance of operating cost categories by type of goods vehicle for self-employed road freight transport businesses, UK, end of 2021

Operating cost categories	44t artic tractor unit and trailer	32t rigid tipper	18t rigid curtain-sider	7.5t rigid curtain-sider	3.5t panel van
Fuel costs <sup>2</sup>	54%	50%	47%	48%	37%
Vehicle finance & tax costs <sup>3</sup>	24%	27%	35%	31%	45%
Maintenance/repair & tyre costs	15%	16%	12%	15%	12%
Overheads <sup>4</sup>	7%	7%	6%	6%	5%
<b>Total costs</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>
Assumed annual mileage	80,000	60,000	60,000	60,000	30,000

### Notes:

1. Includes wages and National Insurance.
2. Uses diesel pump prices excluding VAT.
3. Insurance finance and depreciation costs: assumes new vehicles are purchased.
4. Transport and business overhead costs include business and transport overhead costs (for offices and other buildings and their running costs, computing and telephone charges, employment costs of non-driving staff, tolls, penalty charge notices, parking charges and allowances for rest breaks and overnight stops, and any other business services required).

Data is for end of 2021.

Source: calculated using input data from Motor Transport, 2021, BEIS, 2022.

- Importance of driver and fuel costs for businesses with employees
- Exposure of self-employed SMEs to fuel costs

# Change in goods vehicle operating costs in UK, 2015-2020 and 2020-2021

## Change in vehicle operating costs end of 2015 to end of 2020 in the UK by type of goods vehicle

Operating cost categories	44t artic tractor unit	32t rigid tipper	18t rigid curtain-sider	7.5t rigid curtain-sider	3.5t panel van
Driver costs	+14%	+16%	+16%	+12%	+10%
Fuel costs	+18%	+18%	+18%	+18%	+19%
Vehicle finance & tax costs	+13%	+13%	+18%	+14%	+12%
Total costs	+15%	+15%	+16%	+13%	+11%
Assumed annual mileage	80,000	60,000	60,000	60,000	30,000

## Change in vehicle operating costs end of 2020 to end of 2021 in the UK by type of goods vehicle

Operating cost categories	44t artic tractor unit	32t rigid tipper	18t rigid curtain-sider	7.5t rigid curtain-sider	3.5t panel van
Driver costs	+15%	+15%	+15%	+15%	+10%
Fuel costs	+24%	+24%	+24%	+24%	+24%
Vehicle finance & tax costs	+16%	+17%	+16%	+14%	+13%
Total costs	+17%	+17%	+17%	+16%	+12%
Assumed annual mileage	80,000	60,000	60,000	60,000	30,000

- Major increase in goods vehicle operating costs 2020 to 2021
- One year cost inflation in 2020-2021 equivalent to inflation in entire period 2015-2020
- Fuel costs rose most of all cost components in 2020-2021

### Notes:

Based on same calculation method as tables on previous slide.

Data compares end of 2015 with end of 2020 and end of 2020 with end of 2021.

Source: calculated using input data from Motor Transport, 2015, 2020; BEIS, 2022

# Impact of fuel price increases on relative importance of fuel costs in good vehicle operating costs

Proportion of total operating cost accounted for by fuel costs depending on annual distance travelled by type of goods vehicle and business, UK, end of 2021

Vehicle type and annual distance travelled	Fuel costs as % of total operating costs	
	Road freight businesses with employees	Self-employed road freight businesses
<b>44t artic tractor unit and trailer</b>		
60,000 miles	29%	50%
80,000 miles	34%	54%
100,000 miles	38%	57%
<b>32t rigid tipper</b>		
40,000 miles	25%	44%
60,000 miles	31%	50%
80,000 miles	36%	54%
<b>18t rigid curtainsider</b>		
40,000 miles	18%	40%
60,000 miles	24%	47%
80,000 miles	29%	52%
<b>7.5t rigid curtainsider</b>		
40,000 miles	17%	42%
60,000 miles	23%	48%
80,000 miles	28%	52%
<b>3.5t panel van</b>		
20,000 miles	8%	31%
30,000 miles	12%	37%
40,000 miles	15%	42%

Notes:

Based on same calculation method as in tables in previous slides.

Data is for end of 2021.

Source: calculated using input data from Motor Transport, 2021, BEIS, 2022.

Ultra low sulphur diesel pump price excluding VAT in UK, June 2003 - end of April 2022



Source: calculated from data in BEIS, 2022

# Vehicle maintenance and contraventions of road freight transport regulations by SMEs (1)

## HGV initial test fail rate by fleet size, 2013/14 to 2018/19, Britain

Fleet size	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19
1	30%	28%	25%	23%	23%	23%
2-5	26%	25%	22%	19%	19%	18%
6-10	21%	20%	16%	15%	14%	14%
11-20	16%	15%	13%	11%	11%	10%
21-30	14%	13%	10%	9%	9%	9%
31-40	12%	11%	9%	8%	8%	8%
41-50	11%	11%	9%	8%	7%	7%
51-100	10%	9%	7%	7%	6%	6%
>101	8%	7%	6%	5%	5%	5%

Source: DVSA, 2022

- Initial test fail rates have fallen over period from 2013/14 to 2018/19 for all fleet sizes
- Data indicates initial test fail rates are related to HGV fleet size, with higher initial fail rates the smaller the fleet
- In 2018/19, almost one in four HGVs in fleets of a single vehicle, and almost one in five of HGVs in fleets of 2-5 vehicles, and more than one in ten HGVs in fleets of 6-20 vehicles failed their initial test

# Vehicle maintenance and contraventions of road freight transport regulations by SMEs (2)

## Drivers' hours offences committed in 2019 and 2020 and goods vehicles operated by fleet size in 2020/21, Britain

Fleet Size	Drivers' hours offences (%)		Vehicles on operator licences (%)
	2019	2020	2020/21
0	4%	3%	0%
1	10%	10%	6%
2-5	31%	29%	17%
6-10	17%	20%	12%
11-20	16%	19%	14%
21-50	15%	12%	19%
51+	7%	7%	32%
<b>Total</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>
<b>No.</b>	<b>3,810</b>	<b>2,649</b>	<b>369,287</b>

Source: calculated from data in DVSA, 2021 and Traffic Commissioners, 2022

- Data indicates that drivers in smaller fleets (i.e. 1-20 vehicles) tended to commit a greater proportion of offences than these fleets accounted for as a proportion of total vehicles licensed
- Fleets of up five vehicles accounted for 23% of all goods vehicles but committed approximately 40% of all drivers' hours offences in 2019 and 2020.
- Fleet of up to twenty vehicles accounted for 35% of all goods vehicle licensed but committed approximately 60% of all drivers' hours offences

# Vehicle maintenance and contraventions of road freight transport regulations by SMEs (3)

## Actions taken by Traffic Commissioners against goods vehicle operator licences by fleet size in 2019, Britain

Fleet Size	All actions taken against operator licences in 2019	Operator licence revocations in 2019 (%)	All goods vehicles held on operator licences in 2020/21 (%)
1	18%	21%	6%
2-5	55%	62%	17%
6-10	18%	12%	12%
11-20	6%	2%	14%
21-50	3%	2%	19%
51+	0%	0%	32%
<b>Total</b>	100%	100%	100%

### Notes:

Analysis based on available online decisions made by Traffic Commissioners with hearings in calendar year 2019 that contain vehicle fleet size information. Total of 62 such actions in 2019 identified & analysed. Calendar year 2019 selected rather than 2020 or 2021 due to likely impact of Covid-19 restrictions on the work of Traffic Commissioners and the DVSA.

Source: analysed from data available in Traffic Commissioners, 2022

- Operator licences for a single goods vehicle accounted for 18% of all actions taken and 21% of licence revocations in 2019, despite these vehicles only representing 6% of all goods vehicle on operator licences in Britain.
- Fleets of 2-5 vehicles accounted for 55% of all actions taken and 62% of licence revocations in 2019, despite these vehicles only representing 17% of all goods vehicle on operator licences in Britain
- By comparison, goods vehicle fleets of more than 50 HGVs were subject to no action or revocations in 2019 in the data analysed, despite accounting for approximately one-third of all goods vehicles on operator licences in Britain

# Future use of connected autonomous goods vehicles and impact of road freight SMEs

- Fully connected autonomous vehicles (CAVs) will become available at some point in future
- CAVs expected to have various social & environmental benefits including helping to reduce traffic congestion, improving fuel consumption & thereby reduce GHG emissions & local air pollutants, improving road safety, & enhancing vehicle utilisation, thereby reducing total vehicles required to be produced (Paddau et al., 2019)
- Timescale for implementation of fully autonomous goods vehicles (referred to as level 5 CAV implementation) & circumstances & operating environments in which such vehicles would be used is currently uncertain
- Therefore, whether availability of such level 5 CAVs will coincide with phasing out of sale of new fossil fuel goods vehicles or before the net zero GHG emissions commitment of 2050 is currently unknown
- CAVs predicted to result in improved vehicle utilisation & to vastly reduce vehicle operating costs when human drivers are no longer required, given proportion of vehicle operating costs that drivers account for
- However, CAVs likely to have considerably higher capital costs than standard goods vehicles due to equipment they require - given higher capital costs of such vehicles they are likely to be beyond means of many SMEs based on their current vehicle acquisition methods & behaviours
- Therefore, at some point in future, use of fully autonomous goods vehicles likely to result in substantial reduction in road freight transport SMEs, especially for micro & small businesses, both through inability of those with goods vehicles to afford them & through reduction in demand for goods vehicle drivers for those who are self-employed contractor drivers without their own vehicles

# **SME road freight operators and decarbonisation challenges – potential differences with larger companies**

- Small profit margins – more focused on day-to-day operations and survival
- Less in-house resource and expertise for fuel efficiency and decarbonisation
- Less awareness/use of logistics operations measures
- Less likely to engage in stakeholder decarbonisation events
- Finance and vehicle replacement
  - Less access to investment finance than larger operators
  - Likely to have longer fleet replacement cycles than larger companies
  - More likely to buy vehicles outright (inc. second-hand vehicles)
- Limited government and researcher understanding of freight SMEs views and actions on fuel efficiency and decarbonisation



# British Business Bank survey work with UK SMEs in 2020 (1)

- UK survey in 2020 examined how many SMEs in eight different sectors had heard about:
  - the UK government's target to reach net zero by 2050
  - the impacts of climate change on their business
- 56% of SMEs surveyed had heard either 'a fair amount' or 'a lot' about the government's net zero commitment & 57% had heard either 'a fair amount' or 'a lot' about implications of climate change for their business
- Levels of awareness of these two concepts varied between respondents in the eight business sectors categorised with awareness greatest among SMEs in Transportation & Storage, Agriculture & Primary Industries, & Business Services
- Survey work then investigated whether these same respondents had prioritised decarbonisation in their strategies
- Found that despite high level of awareness of decarbonisation issues among Transportation & Storage SMEs, only 45% of firms in sector had prioritised decarbonisation in their strategies (second lowest of eight sectors after Business Services)

# British Business Bank survey work with UK SMEs in 2020 (2)

- Same UK survey presented SME respondents with six relatively low-effort actions that could be taken which could be helpful as initial actions in adapting business culture, awareness & knowledge about decarbonisation & in preparing the ground for subsequent actions
- Results showed that 56% of SMEs had not taken any of these six capability-building actions
- Indicate that more progress had been made by Transportation & Storage SME respondents in taking one action than by SMEs in several other sectors

## Share of UK smaller businesses that have taken capability-building actions, by sector, 2020

Sector	At least one capability-building action taken	No capability-building actions taken
Manufacturing	34%	66%
Other Services	41%	59%
Business Services	41%	59%
Wholesale and Retail	46%	54%
Construction	50%	50%
Transportation and Storage	52%	48%
Agriculture/Primary	54%	46%
Accommodation and Food Services Activities	57%	43%

# Qualitative interviews with micro and small road freight businesses in UK in 2020 (1)

- Qualitative survey work carried out with road freight micro & small operators in UK by Ipsos MORI for the Department for Transport in 2020
  - To investigate barriers to decarbonisation action, views on emissions reduction measures & potential communication methods to reach micro & small road freight operators
  - Combination of telephone and in-person qualitative interviews carried out businesses operating HGVs (7.5 tonnes and above)
  - Sole traders & businesses with less than 50 employees included
- Current issues that respondents raised as being of importance:
  - Rules & regulations resulting in administrative burden
  - Brexit uncertainty affecting revenues & business continuity
  - Non-British drivers undercutting wages of British drivers
  - Impacts of Covid-19 on revenue & safety
  - Impacts of traffic congestion on fuel costs & journey-time reliability
  - High fuel prices
  - Impacts on Low Emissions Zones / Clean Air Zones introduced in urban areas & need for freight-friendly policy making

# Qualitative interviews with micro and small road freight businesses in UK in 2020 (2)

- Interviewees presented several possible actions that operators could implement to reduce their CO<sub>2</sub> emissions:
  - Eco-driver training & in-cab driver monitoring using vehicle telematics
  - Vehicle adaptations (e.g. tyres, lubricants & vehicle aerodynamics)
  - Alternative fuels (including bio-methane, methane, bio-gas & liquid natural gas)
- Views of interviewees:
  - Eco-driver training & use of vehicle telematics offered greater potential for them than vehicle adaptations & alternative fuels
  - Former viewed as having better fuel saving benefits, lower payback periods & capital costs
  - Businesses with less than 10 employees less likely to already have in-house driver training to maximise fuel efficiency & less likely to be using vehicle telematics

# Qualitative interviews with micro and small road freight businesses in UK in 2020 (3)

## Summary of UK micro/small road freight interviewees' feedback about actions they could take to reduce GHG emissions, 2020

Actions	Interviewee feedback
<ul style="list-style-type: none"> <li>Eco-driver training</li> </ul>	<p>Many small and medium sized businesses were conducting in-house driver training to maximise fuel efficiency. Micro businesses were less likely to be doing so, due to lack of time and resources.</p> <p>There were relatively low levels of awareness of eco-driver training courses among interviewees. Some questioned the value to be gained from such additional driver training beyond what they already provided in-house, seeing it as common sense and citing the difficulty to alter the behaviour of drivers who don't want to change.</p>
<ul style="list-style-type: none"> <li>Vehicle telematics</li> </ul>	<p>Interviewees expressed "mixed levels of awareness, knowledge of, usage, and motivation to use telematics systems". Those that already did so tended to be small and medium sized rather than micro businesses. These existing users tended to be positive about the benefits of telematics.</p>
<ul style="list-style-type: none"> <li>Vehicle adaptations</li> </ul>	<p>The majority of interviewees were aware of aerodynamic vehicle adaptations, with uptake relatively high. Some questioned the payback. "There was generally low uptake of other vehicle adaptations such as low rolling resistance tyres, automatic tyre pressure adjustment and low viscosity lubricants, with SMEs unconvinced about the benefits of replacing their current practices with these adaptations".</p>
<ul style="list-style-type: none"> <li>Alternative fuels</li> </ul>	<p>The majority of SMEs were aware of at least one type of alternative fuel and some had considered introducing them in their fleet. Barriers expressed to doing so including real-world fuel benefits, capital costs and payback periods, the possible transience of government incentives, and concerns about refuelling infrastructure.</p>
<ul style="list-style-type: none"> <li>Summary of most favoured approaches</li> </ul>	<p>Overall, SMEs felt that telematics and eco-driver training offered greater potential for them than vehicle adaptations and alternative fuels. They were generally seen as having better fuel saving benefits, and lower payback periods and capital costs.</p>
<ul style="list-style-type: none"> <li>Means by which to encourage uptake</li> </ul>	<p>Financial incentives were more popular among interviewees as a means by which to foster uptake of initiatives than prizes or independent accreditation schemes.</p> <p>The majority of interviewees thought that a preferential rate loan would be the easiest way to do this, while some preferred a tax break or grant, especially if they had past experience of these.</p>

Source: summarised from Crush and Reynolds, 2021.

# Road freight SME respondents' awareness and implementation of fuel efficiency / decarbonisation measures, Europe, 2020

- Operational measures preferred by SMEs due to their speed & ease of implementation in both UK & European studies
- Correlation between awareness & implementation of measures in European study

Measure	Awareness of measure (% of respondents)	Implementation of measure (% of respondents)
<b>Operational measures</b>		
Fuel consumption monitoring	78%	78%
Eco-Driver training	76%	69%
Driver performance tracking	64%	60%
Transport route optimization	64%	57%
Fleet manager training	44%	40%
<b>Vehicle-related measures</b>		
Shorter vehicle-renewal cycles	37%	30%
Low rolling resistance tyres	37%	28%
Vehicle aerodynamics	33%	24%
Light weighting	28%	19%
Anti-idling devices	23%	17%

Source: Toelke and McKinnon, 2021

# Barriers to fuel efficiency / decarbonisation and use of information among road freight SMEs

## Barriers to fuel efficiency / decarbonisation

- DfT qualitative research among micro & small road freight operators in UK (Crush and Reynolds, 2021):
  - Time poor
  - Very low profit margins & cash poor so need affordable practices/technologies with quick payback periods
  - Related better to concept of fuel efficiency than CO<sub>2</sub> emissions reductions
  - General lack of understanding that CO<sub>2</sub> emissions reduction is about more than having up-to-date vehicle
- Key barriers identified in British Business Bank survey of Transportation & Storage SMEs (2021):
  - Feasibility
  - Cost

## Use of information by road freight SMEs

- Survey of road freight SMEs in Europe (2020) - How well-informed to make sound decisions about fuel economy measures: 30% of respondents felt well-informed, 60% felt their knowledge was limited, & 10% felt that they had no knowledge of subject (Toelke and McKinnon, 2021)
- UK survey of Transportation & Storage SMEs in 2020: approx.85% of respondents said they did not make use of information or advice (BEIS, 2020)

# Enablers of fuel efficiency and decarbonisation among road freight SMEs in survey work

- DfT qualitative research among micro & small road freight operators in UK about type of incentive that would be most likely to motivate their uptake or greater involvement in decarbonisation initiatives: financial incentives more popular among interviewees than prizes or independent accreditation schemes (Crush & Reynolds, 2021)
- In survey of UK SMEs in all sectors, tax incentive seen as most helpful, followed by external finance (including grants & loans), & clearer standards & regulations (all rated as helpful by at least half of respondents). By contrast, training about low-carbon solutions not seen as helpful by majority of respondents (British Business Bank, 2021)
- Among SME respondents in the transportation & storage sector a tax incentive was seen as most helpful enabler (by 71% of respondents), external finance including grants & loans (by 62%) & more information on emission reducing options (by 53%) (British Business Bank, 2021)
- European road freight transport SME survey:
  - Respondents provided with list of 14 internal & external factors that can influence business decarbonisation actions & investment efforts & asked to select five most important in their businesses
  - Highest ranking response was cost saving potential (mentioned by approximately 80% of respondents), followed by customer demand (approximately 60%), vehicle manufacturers/suppliers (approximately 50%), culture & company values (approximately 45%), expected return on investment (approximately 40%), EU-level legislation (approximately 40%) competitors (approximately 40%), national legislation (approximately 30%), leadership/management (approximately 30%), public opinion (approximately 25%), employees (approximately 20%), associations & initiatives (approximately 10%) (Toelke and McKinnon, 2021)



# Current and future source of information, support and guidance mentioned by UK micro and small road freight transport operators, 2020

Source	Sources mentioned
<b>Current sources</b>	<p>Most frequently mentioned source of information was trade associations - Road Haulage Association (RHA) followed by Logistics UK.</p> <p>Micro businesses more likely to depend on word of mouth than larger businesses.</p> <p>Trade magazines also often mentioned, with Commercial Motor most commonly cited.</p> <p>Some received email bulletins from governmental bodies including DVSA and Traffic Commissioners.</p> <p>Some made use of internet and social media sources with the drivers' forum Truck Net UK mentioned by several.</p> <p>Some interviewees expressed mistrust that central government fully understands or appreciates their situation.</p>
<b>Possible future sources</b>	<p>“Despite some feelings of mistrust, interviewees ranked central government information as the most trustworthy, followed by trade associations (despite the conflicting views of members and non-members) and finally the automotive and fuel industry, who most of the interviewees believed would be driven primarily by their own business interests”.</p>

# Summary of recommendations from research with micro and small road freight operators about achieving decarbonisation in UK, 2020

Topic	Recommendations
<b>Addressing barriers</b>	<p>Ensure interventions communicate a demonstrable benefit for SMEs and are as simple and straightforward to implement / apply for as possible.</p> <p>General messaging about initiatives needs to resonate with SMEs needs in terms of: fuel efficiency and minimising costs; improving driver performance; reducing time spent on administration; increasing competitiveness in the marketplace.</p> <p>Tailor initiatives to take account of business size / ability to fund upgrades or improvements to fleet, and provide achievable payback periods.</p>
<b>Most attractive measures and incentives</b>	<p>Eco driver training courses should be tailored to fit needs of SMEs (e.g. basic / advanced / specialist courses aimed at new drivers, experienced drivers etc.).</p> <p>Financial incentives should be tailored to meet SMEs needs (e.g. having a choice of amount that can be applied for, no minimum £ levels, choice of terms etc.).</p>
<b>Most effective ways of communicating advice and engaging with SMEs</b>	<p>Communicate initiatives and financial incentives through the DVSA and Traffic Commissioner as SMEs trust these organisations.</p> <p>Working with freight trade associations to express gratitude and recognition for work of SMEs and create closer relationships with them.</p> <p>Use variety of channels to proactively engage SMEs – email, radio advertising, events.</p> <p>Provide case studies of SME success stories benefitting from energy efficiency initiatives to make it attractive.</p> <p>Link messaging with key times of the year in which engagement with SMEs already takes place (e.g. MOT servicing / CPC training).</p>

# Summary of recommended actions that should be taken by various stakeholders in European research with road freight transport SMEs to achieve decarbonisation, 2021

Stakeholder	Actions
<b>Governments</b>	<p>Promote adoption of mandatory European-wide standards on emission reporting as well as carbon reducing initiatives like driver-training or the use of low-rolling resistance tyres.</p> <p>Provide advice to road freight operators on critical decarbonization issues such as differing low-carbon powertrain technologies and future infrastructure and refuelling plans for goods vehicles.</p> <p>Tighten EU-wide GHG emission standards for heavy-duty vehicles to maintain pressure on vehicle manufacturers.</p> <p>Offer financial support to further incentivise the SME carrier base.</p>
<b>Freight buyers</b>	<p>Lengthen freight contracts and tie them to investments by the road freight operators in fuel efficiency measures to reduce uncertainty and business risks for operators.</p> <p>Set minimum requirements for decarbonization and emission reporting in freight tenders.</p> <p>Provide financial support to road freight operators with upfront investments.</p>
<b>Truck manufacturers</b>	<p>Adjust their sales practices, promotions and information dissemination towards SMEs.</p> <p>Provide clear guidance on future vehicle and low-emission fuel technologies, including reliable information on availability, scope of application, financing and end-of-life residual values.</p>
<b>SME road freight operators</b>	<p>SMEs should address decarbonisation challenge in a more proactive manner as far as their resources allow.</p> <p>Taking action can provide improvements in fuel efficiency and hence cost-saving.</p> <p>SMEs should better exchange information and real-world experiences among themselves to build interest and trust in decarbonisation.</p>
<b>Industry associations, green freight programs, NGOs and research institutes</b>	<p>Should provide knowledge-sharing platforms, practical advice and advocacy.</p>

Source: summarised from Toelke and McKinnon, 2021.

# Decarbonisation actions road freight transport SMEs can take

- Familiarise themselves with decarbonisation targets & requirements in order to incorporate necessary planning into their strategies
- Seek information & advice if required
- Implement low-cost, fast payback measures to improve fuel efficiency of operations if not already done so
- Disseminate importance of fuel efficiency & decarbonisation to other road freight transport SMEs on online freight message boards & by word of mouth

# Freight decarbonisation actions that governmental bodies can take

- Provide simple, direct communications to road freight transport SMEs that about fuel efficiency & decarbonisation (especially comparisons & case studies of alternative measures that can be taken & contact points) ensuring business benefits & payback periods of actions are emphasised
- Include details of vehicle adaptations & alternative transition fuels as well as operational measures in information & advice provided
- Provide information about decisions made concerning fuel source for zero emission tailpipe HGVs & planned refuelling & other infrastructure to support this
- Continue to provide electric vehicle recharging point grants & information & consider how to assist depot electricity grid upgrade costs
- Devise grants & subsidies for eco driver training, vehicle telematics & vehicle replacement schemes & simple, straightforward application procedures
  - Ensure training schemes are designed to meet needs & availabilities of SME personnel
- Ensure future road freight transport legislation takes account of SME perspectives & impacts (especially those of micro & small businesses)
- Work closely with trade associations that represent road freight transport SMEs to improve engagement
- Continue to tighten GHG emission standards for light-duty & heavy-duty goods vehicles to ensure vehicle manufacturers continue to innovate & improve performance of fossil fuel vehicles
- National governmental bodies likely to be of most importance in above efforts, but other levels of government, especially urban governments, also need to adopt this approach

## **Freight decarbonisation actions that goods vehicle manufacturers, financiers and second-hand vehicle retailers can take**

- Provide simple, direct communications for use by road freight transport SMEs that gives information & advice about vehicles, vehicle adaptations & vehicle fuels ensuring that their costs, business benefits, payback periods & residual values are made clear
- Make this vehicle-related information available to second-hand vehicle sellers so that they can also make it available to road freight transport SMEs
- Ensure that their customer focus, reach, financing packages & promotional offers are targeted, & suitable for road freight transport SMEs as well as larger businesses

# **Decarbonisation actions that customers of road freight transport SMEs can take**

- Larger road freight businesses using self-employed contractors on a regular basis should seek to place them on payroll as employees to improve their job security, & provide vacation & sick leave entitlements
- Retailer, manufacturers, construction, larger freight businesses & other customers should provide road freight transport SMEs with contracts of sufficient duration to ensure security & at same time include decarbonisation requirements within these contracts
- Provide financial support to road freight transport SMEs that are used to help them afford the capital costs of vehicle-related upgrades

# Freight decarbonisation actions that trade associations can take

- Disseminate information & advice about fuel efficiency & decarbonisation produced by themselves, government & researchers to road freight transport SMEs
- Represent the needs & interests of road freight SMEs in their dealings with all levels of government
- Continue to develop & update their road freight transport decarbonisation policies taking careful account of needs & situation of SMEs
- Work with financial institutions & industry bodies, vehicle manufacturers & representatives of second-hand vehicle retailers to help develop & broker suitable vehicle & vehicle adaptation finance arrangements for SMEs
- Disseminate information about outcomes & products to emerge from this work on vehicle acquisition & vehicle adaptation financing arrangements



# Freight decarbonisation actions that researchers and other bodies can take

- Ensure that situation & needs of SMEs taken into account & addressed in broader road freight transport research
  - Conduct specific research into road freight transport SMEs, their operations & behaviour (especially in relation to fuel efficiency & decarbonisation) to fill this specific research gap
- Examine most appropriate mechanisms for engagement, communication & knowledge sharing with road freight transport SMEs, as well as types of information & advice required by them to bring about greater fuel efficiency
- Study suitability of external finance arrangements for vehicle acquisition & adaptation by road freight transport SMEs, as well as types of assistance & incentives most likely to achieve greater fuel efficiency & uptake of cleaner goods vehicles amongst them
- Provide outcomes of research & advice direct to road freight transport SMEs via online websites, together with providing this information to trade associations for them to disseminate to SMEs
- Investigate views, operations, behaviours & fuel efficiency of SMEs that operate LGVs & HGVs but which are not providers of road freight transport services to others