HEAVY-VEHICLE OPERATOR UNDERSTANDING

Combined Quantitative and Qualitative Report

July 2024

MINISTRY OF TRANSPORT
TE MANATŪ WAKA

ISO 20252 ISO Experts CERTIFIED

GAME CHANGERS

Ipsos

CONTENTS

Acknowledgements

This research would not have been possible without the cooperation of Ia Ara Aotearoa Transporting New Zealand, the New Zealand Trucking Association and the National Road Carriers Association.

Their engagement, willingness to contribute, and work in helping us access their members enabled this project to be conducted considerably more efficiently and effectively than would have otherwise been possible.

Our thanks and appreciation are duly extended to them, and also to all the fleet managers and owners who participated in the research, willingly giving their time and valued opinions.

Disclaimer

This report is based on research undertaken by Ipsos on behalf of Ministry of Transport | Te Manatū Waka. Although the Ministry of Transport provided the investment, the research was undertaken independently, and the resulting findings should not be regarded as being the opinion, responsibility, or policy of the Ministry of Transport or indeed of any NZ Government policy.

BACKGROUND, METHODOLOGY & SAMPLE

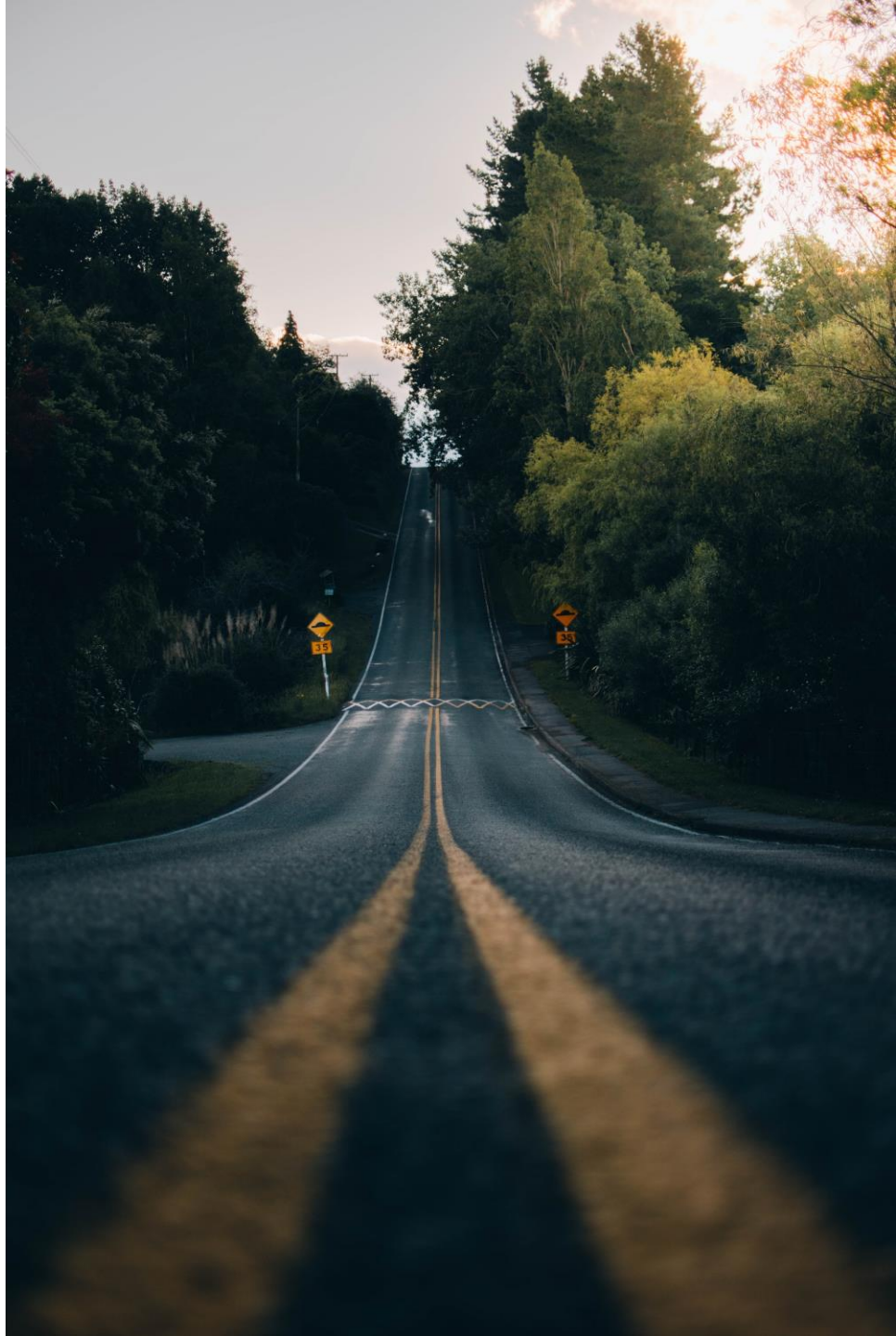
1

Research objectives

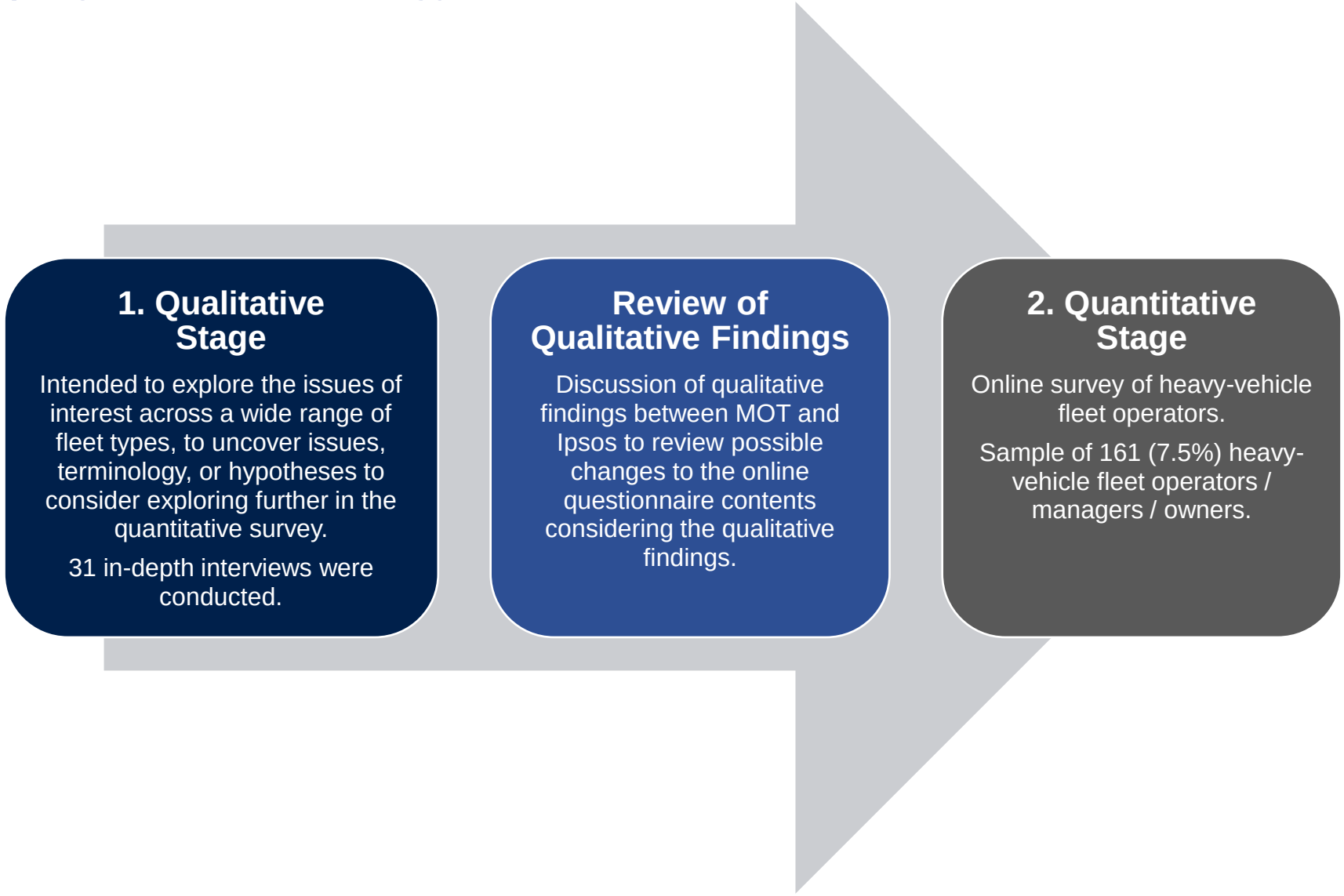
The objective of this research is to help the Ministry of Transport understand the operational and financial factors that heavy-vehicle operators consider when deciding what heavy vehicles to use, especially when adding new trucks to their fleets or replacing old trucks.

Specific areas of interest include:

- The characteristics of heavy-vehicle operators and the vehicles they have.
- The different operating and financing factors that heavy-vehicle operators use for managing fleets and assessing the viability of using more efficient trucks.
- The operational and financial factors at play in purchasing or leasing vehicle decisions.
- The impacts that various possible government interventions (e.g. subsidies or alternative funding) could have on the above decisions.
- The barriers to acquiring zero- and low-emission vehicles faced by specific operators / operating models, and whether different operating models have different strengths and weaknesses in facing these barriers.
- Additional evidence to enhance and strengthen the evidence base of the Ministry of Transport's Domestic Transport Costs and Charges Study.



Overview of project methodology



Stage 1: Qualitative methodology

Recruitment and discussion guide materials can be found in Appendix 3.

- Potential respondents were sent a short invitational email by Ia Ara Aotearoa Transporting New Zealand and the National Road Carriers Association (together with *New Zealand Trucking Association)*. This email introduced the research and asked interested parties to complete a short online questionnaire that profiled their fleet size and types of freight, along with collecting their contact details.
- Ipsos then recruited a selection of these respondents, identifying the most suitable ones to interview to canvas a wide range of participants. The objective was to collect a wide array of responses from a wide variety of businesses, rather than a representative sample.
- This approach meant that some degree of self-selection bias could affect the nature of the respondents, so care was taken not to reveal too much about the subject of the study at this stage.
- In order to be selected, all respondents had to state that they were key decision-makers on their businesses' truck purchasing and fleet management.
- 31 in-depth interviews were duly conducted, each lasting approximately 1 hour.
- Interviews were conducted via Microsoft Teams.
- Respondents were incentivised via a choice of $125 koha or charity donation.
- Fieldwork dates: 18 October–11 December 2023.
- Sample characteristics (size):
  - 12 participants had large fleets (31+ vehicles)
  - 7 had medium fleets (16–30 vehicles)
  - 5 had small fleets (5–15 vehicles)
  - 7 had very small fleets (1–4 vehicles)
- Sample characteristics (freight):
  - 1 x Bulk liquid
  - 4 x Bulk solids, e.g. aggregate, fertiliser, grain, coal, etc.
  - 1 x Livestock
  - 4 x Forestry
  - 3 x Bulk solid materials, e.g. building / construction materials
  - 3 x Freight – urban
  - 3 x Freight – line haul
  - 6 x Freight – speciality, e.g. chilled, car transporters, etc.
  - 4 x Freight – containers / reefers
  - 2 x Food service

Stage 2: Quantitative methodology

Recruitment email and questionnaire can be found in Appendix 3.

- **Data collection:** An online questionnaire was developed in consultation with the Ministry of Transport and then scripted and hosted by Ipsos.
- **Sample source and method:** Potential respondents were sent a short invitational email by Ia Ara Aotearoa Transporting New Zealand and the National Road Carriers Association together with New Zealand Trucking Association on 4 December 2023. This email introduced the research and asked interested parties to complete an online questionnaire, or to provide their contact details if they preferred to be interviewed by phone (only one did so, and then withdrew his interest). This approach meant that some degree of **self-selection bias** could affect the nature of the respondents, so care was taken not to reveal too much about the subject of the study.
- **Pilot test:** As part of our quality management, a small number of invitations at first (on 30 November 2023), to allow Ipsos to pilot-check the data and identify any potential bugs. With the pilot data reviewed, we were then able to give approval for the full launch on Monday 4 December. At this point, Ipsos began monitoring response volumes.
- **Respondent definition:** Respondents had to be involved in researching and choosing the trucks that their company would buy or lease when replacing existing trucks or adding to the fleet. We recognised that the invitation would not always reach the most qualified contact immediately, so if respondents weren't qualified to answer, they were asked to forward the link to anyone who may be able to do so. Since the survey was set up with generic links, this could be done by forwarding on the original survey invitation.
- **Fieldwork monitoring and dates:** As there was a different link from each organisation, Ipsos was able to monitor and update the organisations on how many responses had been received from each. Two reminder emails were sent later in the fieldwork period. Survey links remained open for respondents until 19 January 2024, allowing for some extra time for completion after the summer holiday period.
- **Sample size:** The number of fully completed questionnaire summed to n=161. The total number of heavy vehicles managed by these respondents was approximately 4,830.
- The **response rate** (proportion of completed questionnaires out of the estimated total opened email invitations) was 7.5%, which is average to above average for surveys of this nature (accounting for respondent type, questionnaire length and subject, promised returns for their time, invitation source, and time of year).
- **Questionnaire duration:** The questionnaire took approximately 15 minutes in total to complete online. This varied from person to person, as some questions were asked only of certain subgroups (e.g. fleets of a certain size, those already using certain types of lower-emission vehicles, etc).
- **Incentives:** Those who completed the questionnaire were able to enter into a prize draw to win one of ten $100 Prezzy Cards. Those who wished to participate were asked to provide the email address that they wanted to be contacted on if they won. This ensured that Ipsos had permission to hold their email address and accounted for cases where they wished to receive notification via a different address to the one that they received their invitation on.

Stage 2: Quantitative questionnaire development

The quantitative questionnaire was developed based on 4 key considerations:

1. The need to answer the core questions presented in the brief.
2. The need to consider new learnings gained from the qualitative stage.
3. The need to keep the questionnaire as short and user-friendly as possible.
4. The need to use key definitions / measures that respondents could understand and use, and which the Ministry of Transport could also use for modelling.

For example, the qualitative interviews revealed that:

- Openness to new ideas can influence return-on-investment analysis, leading to Q3* about respondents' position on the 'Early Adopter' scale.
- Operators did not tend to think of their vehicles in terms of gross vehicle mass, (which is preferable for modelling). Therefore, based on these qualitative interview findings, the steering/advisory group advised the use of Road User Charges (RUC) class** as a rough proxy for truck size in the questionnaire and analysis.
- Truck fleets that are operated as part of a larger business may have different operating criteria, leading to Q16* about this issue.
- Fleet management can be informal, with minimal or no formal record keeping, leading to Q43 and Q44*.
- Driver care and retention can be important, leading to the inclusion of driver retention as a factor in any lists of truck selection criteria, e.g. Qs 22, 41, 46, 47, 48*.

The findings of the interviews also partly informed the development of most of the lists of possible reasons, attitudes, or behaviours in the questionnaire, e.g. Qs 31, 32, 34, 41, 46, 47, 48, 49, 65, 66, 76, 77, etc.*

Note: The qualitative discussion guide and quantitative questionnaire can be found in Appendix 3.
****Note: Road User Charges (RUC) which relates to axle configuration. RUC explanations can be found in Appendix 4.***

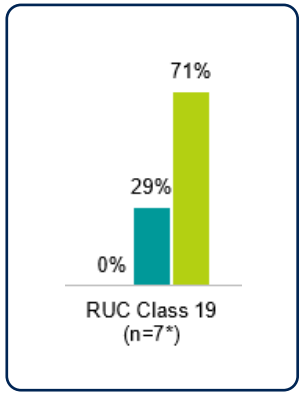
Statistical significance testing

- Statistical significance tests have been used to assess whether observed differences between groups are likely due to random chance or reflect actual differences between the groups.
- Where our analysis indicates that a given result is statistically significantly different from the other results shown, this is illustrated in the chart or table by the colour of the number in question:
  - **Green** numbers indicate results that are significantly higher than the total.
  - **Red** numbers indicate results that are significantly lower than the total.
- Significance is based on how unlikely it is that an observed difference would occur if the 'null hypothesis' were true (assuming the sample is a normally distributed random sample). The null hypothesis assumes there is no actual difference between the groups at 95% confidence level. This means there is a 5% or less chance that the observed difference occurred by random chance under the null hypothesis.
- We use the chi-square statistic to assess the null hypothesis. The computation of chi-square utilises observed and expected frequencies. In a contingency table, we have two variables under consideration and we denote an observed frequency as f_{ij} (e.g. the value in row *1* column *1* is f_{11}). The total frequency in row *i* of the table is denoted R_i and is the sum of the frequencies in the row. Similarly, C_j denotes the total frequency in column *j*.
- For chi-square analysis of contingency tables, the standard formula is $X^2 = \Sigma\ P2P\ (f_{ij} - e_{ij})^2 / e_{ij}$ where f_{ij} = the observed frequency in row *i* column *j* and e_{ij} = the expected frequency in row *i* column *j*. The expected frequency in a cell of a contingency table is $e_{ij} = R_i * C_j / n$ where *n* = grand total.
- Note the row totals of the expected frequencies equal the row totals of the observed frequencies, and the column totals of the expected frequencies equal the column totals of the observed frequencies.
- Once X^2 (the chi-square statistic) has been obtained, we can find its significance by evaluating the chi-square distribution at the value X^2 for the appropriate degrees of freedom. By comparing the statistic to the theoretical distribution, we can determine the probability of getting this (or a more extreme) difference.
- This probability is called a '*p*-value'. If the *p*-value is small compared to some predefined criteria (say, less than 0.05), then we declare that the difference in the two values is statistically significant.

Notes on reporting and interpretation (1)

Base sizes

- The requested analysis of the data by RUC category and main freight types means that some of the analysis involves sub-samples that are quite small, e.g. there were just 7 respondents with trucks in the RUC Class 19 (see chart excerpt opposite).
- Therefore, the results for such small subgroups should not be assumed to be representative of all operators with trucks in said classes or freight types.
- Rather than withholding these results, we have opted to display them, while also displaying the size of the subgroups in question.



Reporting on sub-sample differences

- For most of this report we have opted to comment on differences between sub-samples only when they are statistically significant.
- Statistically significant differences are indicated in charts by the **red** and **green** numbering format discussed on the previous page.

Sums

- Where results on staked bar charts do not sum to 100 or the ‘difference’ appears to be + / -1 more / less than the actual, this may be due to rounding, multiple responses, or the exclusion of ‘don't know’ or ‘not stated’ responses.

Definitions

- **Low emission vehicles** cover battery electric vehicles, hydrogen fuel cell electric vehicles and hydrogen injection technologies.
- **Heavy vehicles** are those with a GVM (gross vehicle mass) of over 3,500kg. This survey only included non-passenger heavy vehicles i.e. not buses.

Notes on reporting and interpretation (2)

Sample representativeness

This report reflects the view of some heavy vehicle fleet operators in New Zealand, however the sampling of this sector reflects some operators more than others.

This is because the sample is limited to the key sources, i.e. members of *Ia Ara Aotearoa Transporting New Zealand* and the *National Road Carriers Association* (the latter with the *New Zealand Trucking Association)*, who may be different in some ways to non-members. For example:

- There is a skew towards larger freight carriers rather than other heavy-vehicle operators such as council refuse collection. The analysis on page 23 supports this, with the sample over-representing High-Productivity Motor Vehicle (HPMV) trucks and under-representing RUC Class 2.
- *Ia Ara Aotearoa Transporting New Zealand* represents about 1,200 members which operate about 14,000 heavy trucks.
- The *National Road Carriers Association* and *New Zealand Trucking Association* represent about 3,000 members, which operate about 30,000 heavy trucks.
- As January 2024 data[1] indicates that ca. 145,700 trucks are operating in New Zealand.
- People can be members of multiple industry bodies

- Respondent self-selection bias may have yielded a sample different in some way to the wider population (mitigated by avoiding any information about the emissions-reduction aspect of the survey when inviting participation).
- The total number of heavy vehicles under management by our sample equated to 4,832. As MOT-supplied data indicates that around124,000 trucks had purchased RUCs between 2022 and Feb 2024, this means that our sample represents approximately 3.8% of the total fleet.
- The total number of 'road freight transport' enterprises (definition excludes postal or warehousing enterprises) in 2023 equated to 5,271[1]. Our sample covers 161 businesses, however 38% of these do not work wholly in transportation and may not be represented in the 5,271 road freight enterprises.

On balance, **we feel confident that the results are worth consideration**, because:

- Despite much focus on the differences across fleet sizes, freight types, and RUC classes, there is a lot of similarity across respondent profiles in the results, indicating that the key issues we have covered are likely to apply to the wider heavy-transport sector in general.
- This is also supported by the fact that these operators all work within the same commercial business confines, which is to run their businesses at a profit, maintain a reliable fleet of trucks, and keep operating their services in a manner that satisfies customers.

Data weighting has been considered but not pursued, due to 1) the main discrepancy relating to RUC Classes, but as individual operators can own fleets spanning multiple RUC classes, weighting on this basis is unsuitable; 2) the small sample size, which could result in overly high weighting factors with no actual reduction in margin of error.

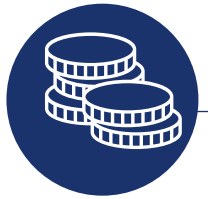
1. See https://figure.nz/chart/IW0xisEu03j4YW09-WkzmtrMmXoFqyDSi

Quantitative survey – Respondent profiles

- Three in four respondents held the leading role in truck selection.
- The sample skews slightly towards a more casual process for truck procurement; respondents were twice as likely to be ‘very casual’ than ‘very formal’ with their procurement process.
- Around two thirds of the sample were keen to try new technology.

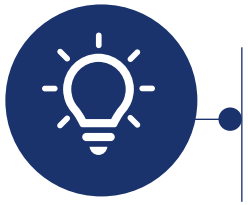
ROLE IN ADDING TO FLEET

		n=161
Does all / most of research and makes final decision	**75%**	*120*
Does all / most of research and makes recommendations	**10%**	*16*
Helps with research but others make recommendations	**6%**	*10*
Helps make final decisions based on research / recommendations	**9%**	*15*



FLEET PURCHASING FORMALITY

		n=161
1 (Very casual)	**20%**	*33*
2	**16%**	*26*
3	**38%**	*61*
4	**15%**	*24*
5 (Very formal)	**11%**	*17*



ADOPTING NEW IDEAS / TECH / TRENDS

		n=161
Innovators	**14%**	*22*
Early adopters	**55%**	*88*
Late adopters	**32%**	*51*

TRUCK MANAGEMENT METHOD

		n=161
In my head	**20%**	*32*
In my head with notes / records	**33%**	*53*
Formal fleet management system	**47%**	*76*

S1: *To begin, which of the following best describes your role in researching what heavy vehicles to add to your fleet? These can be new or used, bought or leased. /* ***Q3:*** *Firstly, how would you describe your approach to adopting new ideas, technologies, or trends? /* ***Q43:****Thinking about your normal process of evaluating what truck(s) to buy or lease, how formal is the process you usually go through? /* ***Q44:*** *Where is most of your truck management information kept?*

Base: *Total sample (n=161).* ***Note:*** *Where percentages do not add to 100%, this is due to ‘don’t know’ and ‘prefer not to say’ responses.*

KEY FINDINGS

2

KEY FINDINGS (1)

1. **The sample for this survey includes 161 operators, with 4,832 vehicles in total.** The majority of operators in the sample owned their vehicles (rather than leasing). Just under two thirds of the operators worked solely in transportation, and while many of the vehicles used by these operators are at the very heavy end of the spectrum, including 1,862 HPMVs.
    - Most of the operators in the **sample work directly with external customers on contracts** (either short- or long-term), as opposed to moving product for their own company (although a quarter did do this).
    - **The freight types operators in the sample work with vary,** with bulk pourable, general goods, bulk solid materials and specialty freight being the most common types. On average, each respondent's business carried 1.8 different types of freight each.
    - Half the sample said their **trips are usually provincial (e.g. around a region)**, with a quarter focusing on urban short-haul and a quarter on long-haul trips. Just under a quarter had set routes and timetables with very little variation, the rest had either all ad hoc or a changing variety of set routes.
    - When it comes to **challenges faced while planning for the future of the business**, the two most common were increased operating costs (82%) and government policy changes (70%).

2. **The operating and financing factors that heavy-vehicle operators consider when managing fleets and selecting new trucks range from informal and cursory through to formal and comprehensive.**
    - **Ongoing fleet management tends to be semi to fully formal**, with 47% of surveyed operators using "very formal" fleet management systems and another 33% using a mix of written notes and mental recollection.
    - The **main factors that lead to getting a new truck** are the mileage and condition of existing trucks, this is followed by business growth and a desire for cost improvements. The majority (65%) said they put their current trucks on lighter duties once they've reached 1 million kilometres. Although just under a third (29%) will let them go for a further half a million kilometres.
    - **When considering buying new ones,** price is the highest-rated financial factor in truck selection but is behind 9 other non-financial factors, including reliability of the vehicle and engine size.

Please note our sample over-represents larger vehicles (particularly HPMV RUC types) and under-represents RUC type-2 vehicles relative to the fleet (please see Fleet profiles slide 22 and Appendix 4).

KEY FINDINGS (2)

3. **Leasing:** While we understand leasing is more widely used in the industry, just 6% of the vehicles used by the surveyed respondents were leased (likely due to the sampling approach).
    - Buying was preferred by our survey respondents because it was financially better than leasing (77% of those who buy) and retained the option to sell trucks if necessary (49%). However, 54% said that a barrier to adopting low-emission vehicles was the difficulty in estimating the resale value. For those who buy their vehicles with the option to resell in mind, difficulty in estimating resale values could be a barrier to adopting low-emissions vehicles.

4. **For those not currently using low-emission vehicles, there are a number of barriers to acquiring zero- and low-emission vehicles:**
    - **Practical efficiency** is a key consideration. *Recharging times*, *route suitability*, *on-route recharging options*, and *loss of payload weight to battery weight* were all factors cited by at least half of those yet to adopt low-emission vehicles.
    - **Cost** is important in a number of ways, including the *purchase price*, *being unclear of resale value*, *customers not being willing to pay extra*, and *not having enough information to assess the return on investment*.
    - **Lack of information** is not limited to *return on investment (cost–benefit analysis)* but includes *how to assess the practicality of having electric or hydrogen trucks* in the fleet.

5. **There are several key barriers to the adoption of more efficient truck fleets:**
    - The two most common **barriers to consideration or usage** of electric or hydrogen trucks are *battery recharging times / queues* and *truck routes not being suitable*.
    - **Loss of available freight weight and VDAM (vehicle dimensions and mass) regulations:** Half (51%) of non-users of low-emissions vehicles said loss of available freight weight, VDAM regulations, and RUC were barriers to adopting electric or hydrogen trucks and over half (53%) of all respondents said raising mass limits would be very useful when asked to rate the usefulness of such an initiative.
    - The ***number* and *location of on-route recharging options*** were cited by 53% of non-users as a barrier to low-emission vehicle adoption; *challenges with in-house charging systems* was also a barrier (cited by 48% of non-users as a barrier to low-emission vehicle adoption).

Please note our sample over-represents larger vehicles (particularly HPMV RUC types) and under-represents RUC type-2 vehicles relative to the fleet (please see Fleet profiles slide 22 and Appendix 4).

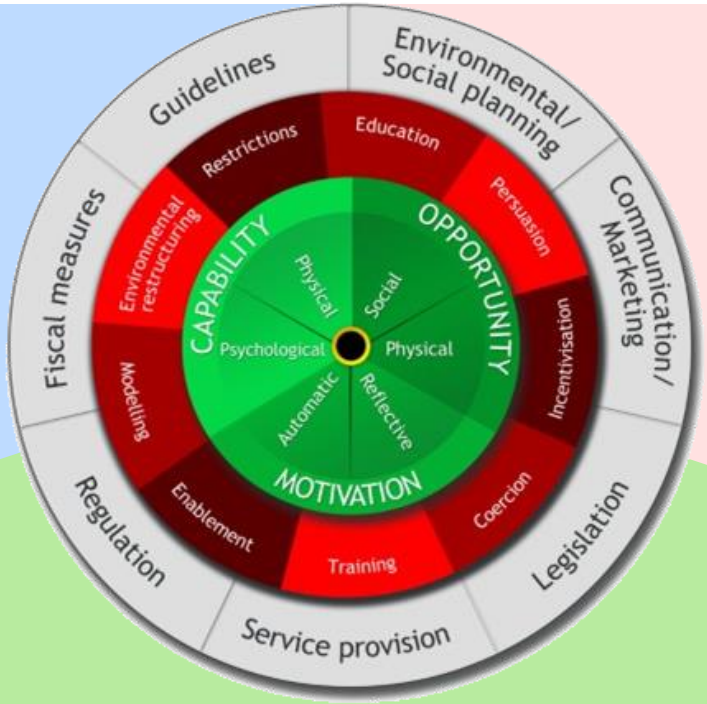
CONCLUSIONS (1)

About half (51%) of operators have committed to reducing their carbon emissions, but there are a number of factors related to cost and profitability that act as barriers to change. For change to occur, there are a number of financial and practical viability barriers the technology needs to overcome.

KEY 'CAPABILITY' BARRIERS

Cost and practicality need to be viable

- Up-front purchase prices are too high
- Insufficient information on practicality (e.g. charging infrastructure, range – related to distance, topography and freight)
- Insufficient return-on-investment information
- Insufficient in-house maintenance skills and equipment



KEY 'OPPORTUNITY' BARRIERS

Better charging / truck capabilities are needed

- Not just number and placement of charging locations but also speed of recharging (including having to queue)
- Availability of suitable trucks and engine capabilities that are fit for purpose
- Reduced pay load under current VDAM regulations
- Challenges with in-house recharging

Businesses need to be profitable

- Avoiding the risk of buying technology that may become obsolete
- It is hard to predict the resale value / ease of on-selling
- Avoiding additional costs due to pressure from customers who do not want to pay extra

KEY 'MOTIVATION' BARRIERS

The desire to 'do the right thing' is there

- 67% of surveyed operators have at least considered conducting regular emissions assessments of their fleet
- In the qualitative we heard there is a desire to reduce CO2 emissions, to 'do one's part' – which may in part be done with future generations in mind.

***Note:** See Appendix 1 for details on the COM-B Model.*

CONCLUSIONS (2)

- Some 55% of the surveyed respondents agreed with the ‘Early Adopter’ definition that “I am open to new ideas & usually adopt them before the majority, but I am not necessarily the first one to try them". That said, the remainder were twice as likely to align with the ‘Late Adopter’ statement than the ‘Innovator’ statement, indicating that while they may keep an eye on new developments, they also like to ‘wait and see’ before adopting them themselves.
  - Therefore, there could be a lag between the introduction of new technology and its uptake.

- The majority (71%) of fleet operators surveyed are either committed to or considering reducing emissions. However, 53% of surveyed respondents believe their customers will not want to pay extra for the use of low-emissions vehicles, which makes adoption difficult from a financial perspective.
  - The sector is essentially a service industry, and due to the highly competitive nature of this industry, their ability to pass costs on to the customers will affect their business decisions, including purchasing of low-emission vehicles.

- In conclusion:
  - The majority of operators have at least considered taking stock of their carbon emissions; however, this research indicates that there are a number of barriers to transitioning fleets to low-emissions vehicles. These barriers are related to cost, profitability, availability of suitable vehicles, and supporting infrastructure (both nationally and in-house).

FLEET PROFILES

3

SECTION SUMMARY: FLEET PROFILES

Please see Appendix 4 for definitions of each RUC Class and high-productivity motor vehicle (HPMV).

This section profiles the respondents' fleets, including their size, freight types, ownership models and route variability.

- We surveyed n=161 businesses, who collectively operated 4,832 heavy vehicles. The majority of vehicles covered in the survey were owned (4,536) rather than leased (296).
- **RUC classes RUC 6 and HPMV had the largest sample sizes in the survey. This represents the trucks carrying heavier loads.**
- The type of freight being transported varies, with all nine listed types of freight being carried by at least some respondents. On average each respondent's business carried 1.8 types of freight each.
- **Most service a frequently changing variety of delivery routes** rather than regular schedules.

Please note our sample over-represents larger vehicles (particularly HPMV RUC types) and under-represents RUC type 2 vehicles relative to the fleet (please see Fleet profiles slide 22 and Appendix 4).

Fleet profiles

Most vehicles operated by the sample were owned and not leased, and just over four in ten vehicles were rigid trucks with trailers.

161

Businesses surveyed

4,832

Vehicles operated

4,536

Owned

296

Leased

	Tractor-trailer units	Rigid trucks no trailer	Rigid trucks with trailers
Owned	1,618	830	2,088
Leased	129	83	84
Total	1,747	913	2,172

Q10: *Approximately how many of each type of truck does your business operate? If you are not sure, please give your best estimate.*

Base: *Total sample (n=161)*

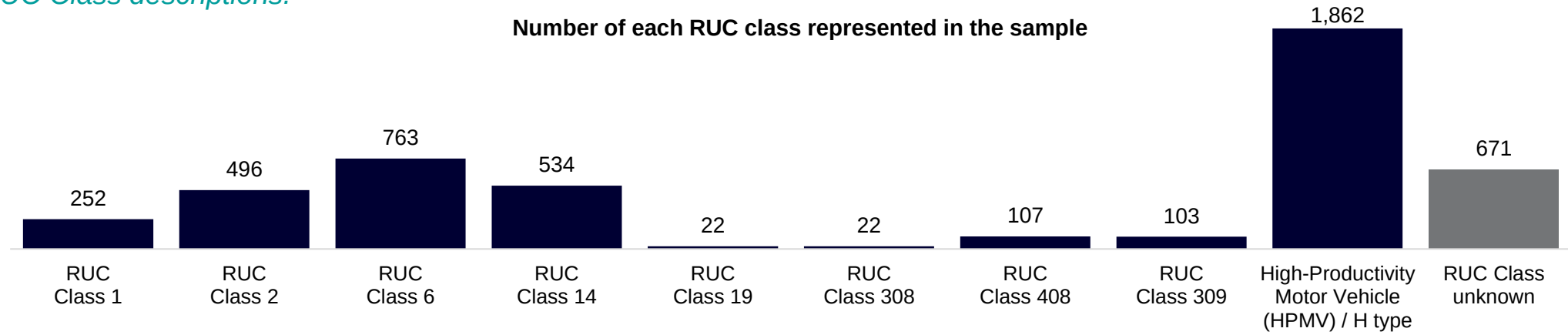
Fleet profiles – Number of vehicles in each RUC class

The most common RUC classes in the sample are HPMVs and RUC class 6.
The sample over-represents HPMV trucks and under-represents RUC Class 2.
Please refer to 'Sample representativeness', for commentary on the sample profile.
Appendix 4 provides RUC Class descriptions.

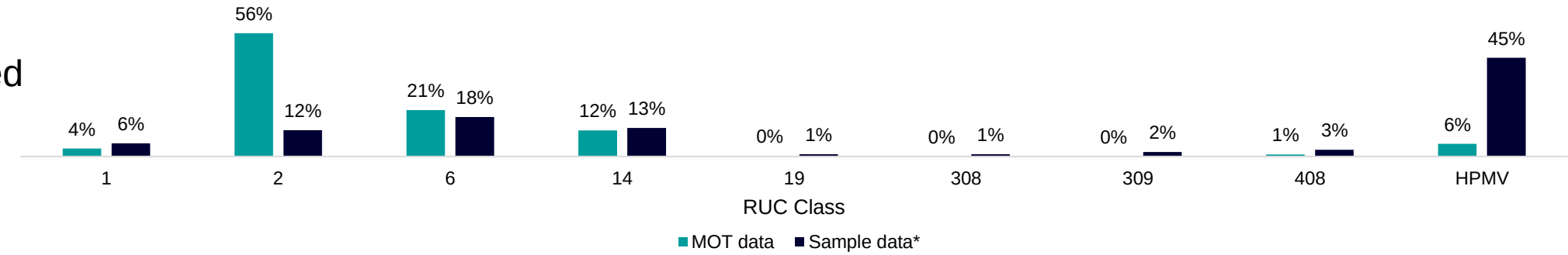
161
Businesses surveyed

4,832
Vehicles operated

Number of each RUC class represented in the sample



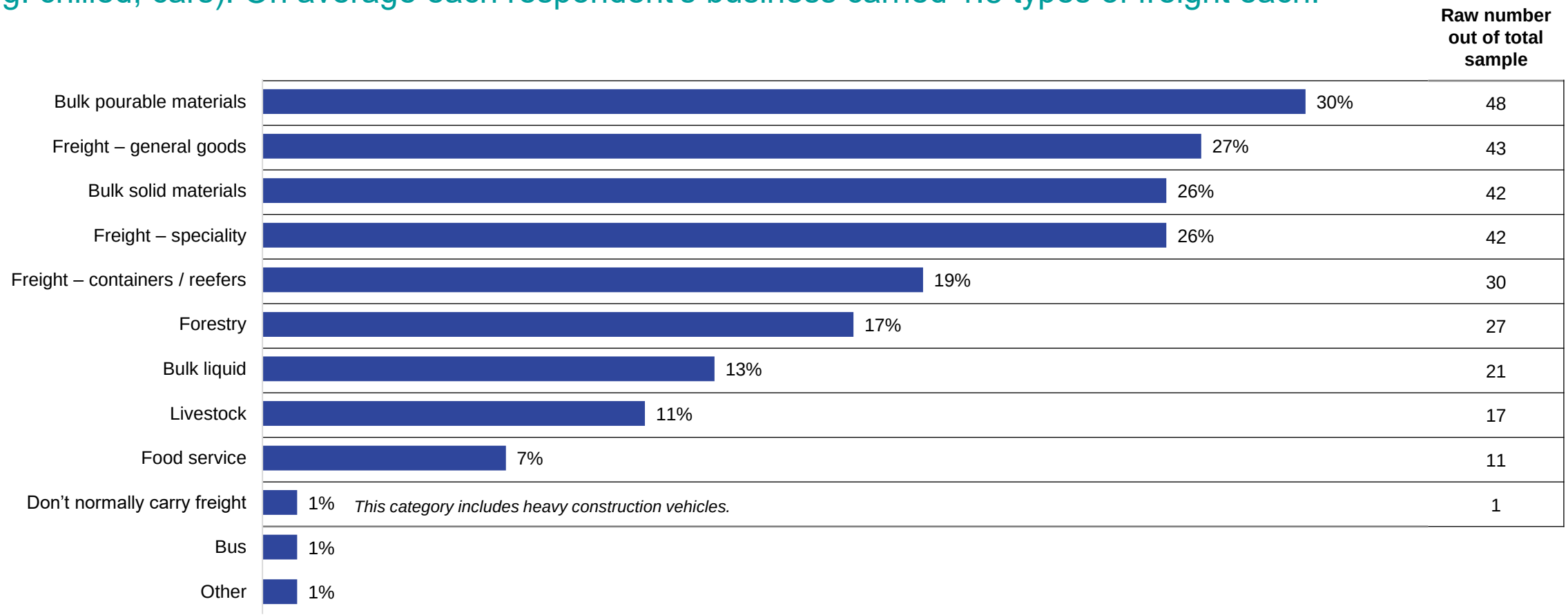
Proportion of RUC Class trucks in sample compared to MOT data[1] on purchased RUCs



Q11: *Thinking about the powered vehicles that you mentioned, how many do you have in each of the following RUC classes? If you are not sure, please give your best estimate.*
Base: *Total sample (n=161).* ****Note:*** *Excluding trucks with unknown RUC classes, to enable better comparison.*
1. Based on proportion of vehicles who purchased RUC between Jan 2022 and Feb 2024.

Fleet profiles – Freight types

The most common freight amongst the sample was *bulk pourable materials* (e.g. aggregate), followed by *general goods* (e.g. retail goods, courier services), *bulk solids* (e.g. building materials) and *speciality freight* (e.g. chilled, cars). On average each respondent's business carried 1.8 types of freight each.



Q6: *Which of the following types of freight does your truck fleet usually carry?*

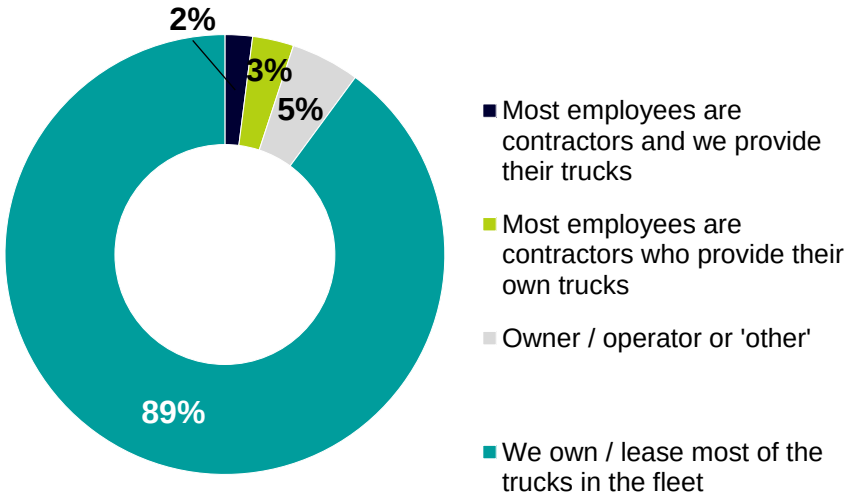
Base: *Total sample (n=161)*

See Appendix 2 for further breakdown of freight types by trip type and by RUC.

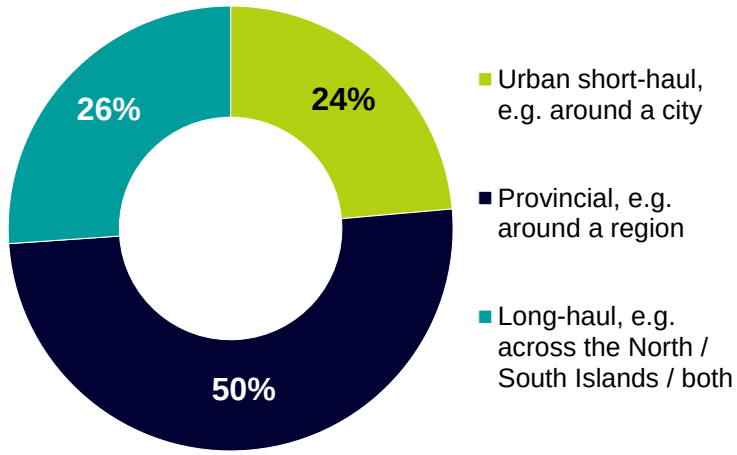
Fleet profiles – Ownership, trip types and routes

Nearly all operators surveyed owned or leased most of their trucks. Half of those surveyed said their usual trip type was provincial transport,* while 78% service a changing variety of set or ad hoc routes.

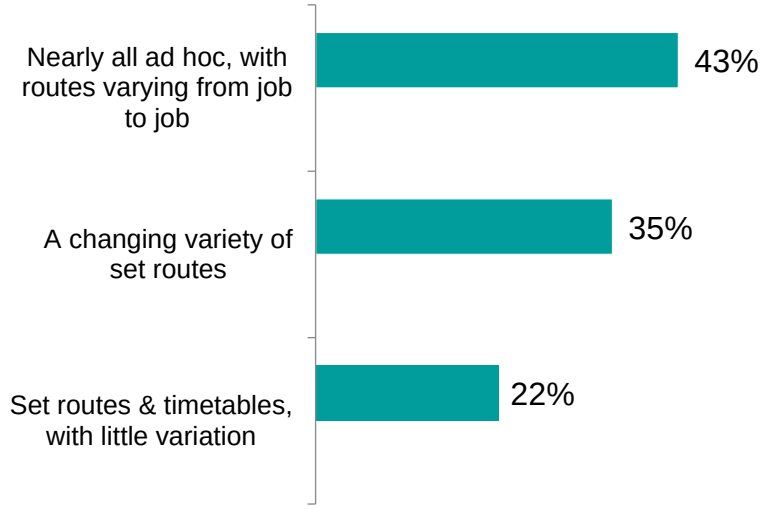
Driver / truck ownership model



Usual trip type



Route variability



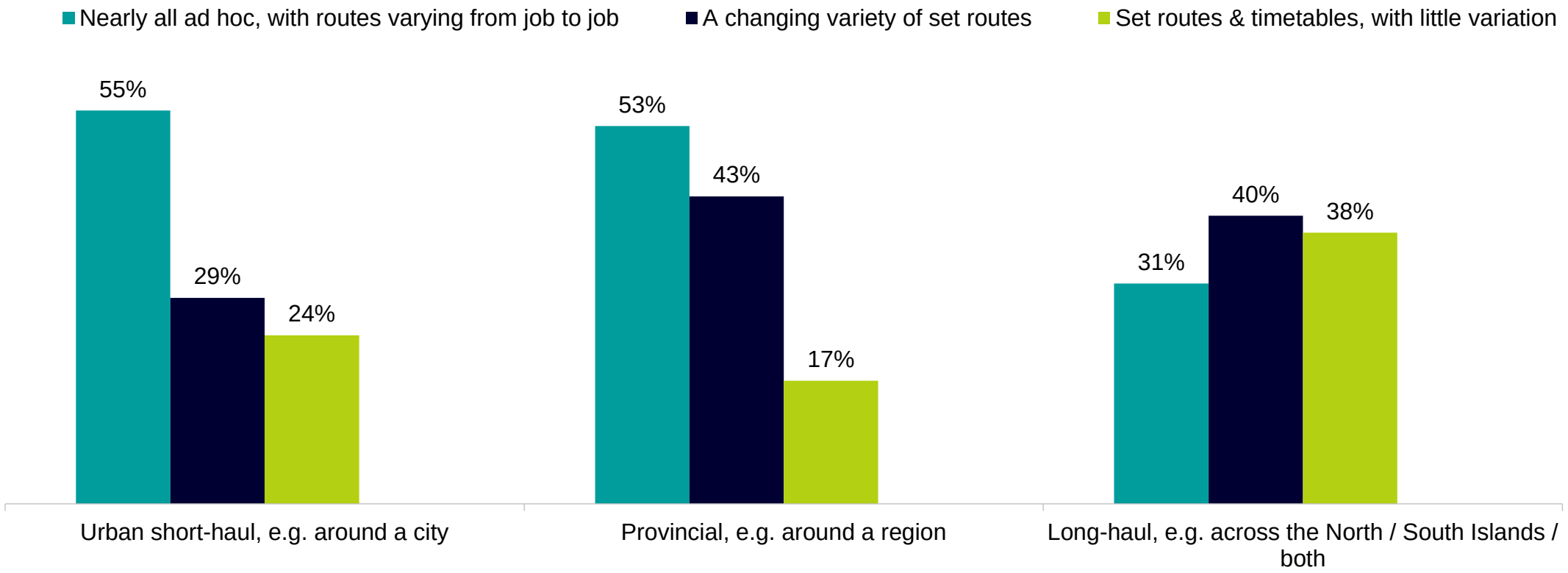
Q33: *Which of the following best describes your business' management of your fleet and drivers?* / ***Q7:*** *What kind of trips represent the majority of your truck fleet's mileage?* / ***Q8:*** *Which of the following types of trips does your truck fleet usually do?*

Base: *Total sample (n=161).* ****Note:*** *Defined in the questionnaire as 'around a region'.*

See Appendix 2 for breakdown of route variability by RUC and route variability by fleet size

Fleet profiles – Trip type by route variability

Most fleets travel on variable or ad hoc routes. Operators with fleets that tended to be utilised for long-haul had the highest percentage of their vehicles compared to others running on highly predictable set routes.

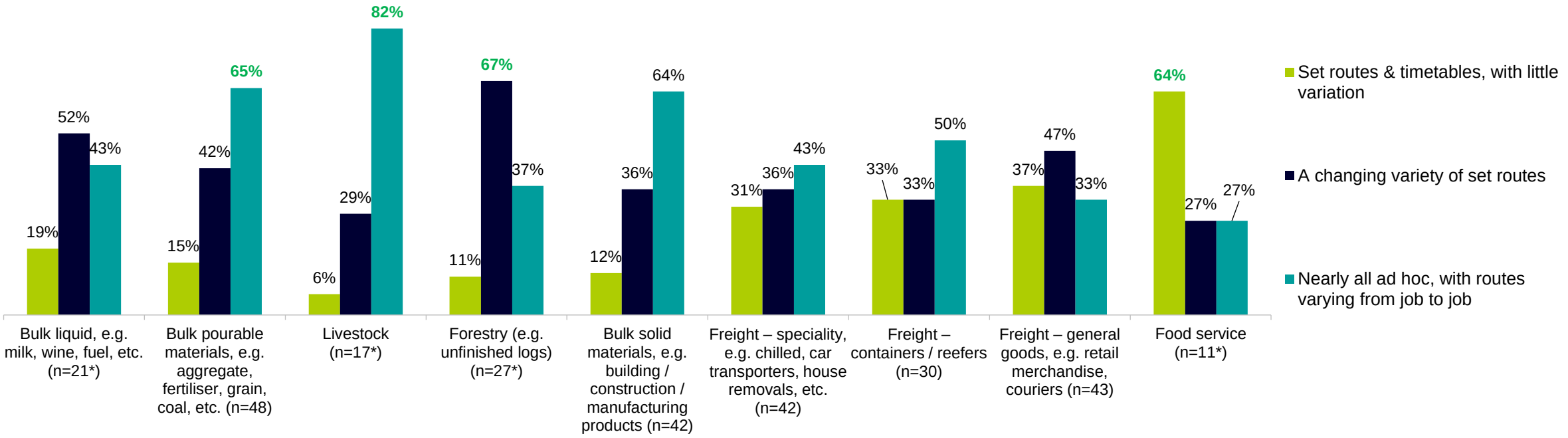


Q7: *What kind of trips represent the majority of your truck fleet's mileage?* / ***Q8:*** *Which of the following types of trips does your truck fleet usually do?*

Base: *Total sample (n=161)*

Fleet profiles – Route variability by freight type

Routes vary widely by freight type, with those transporting livestock and bulk pourables being more likely to follow nearly entirely ad hoc routes and food service being more likely to be following set routes and timetables.

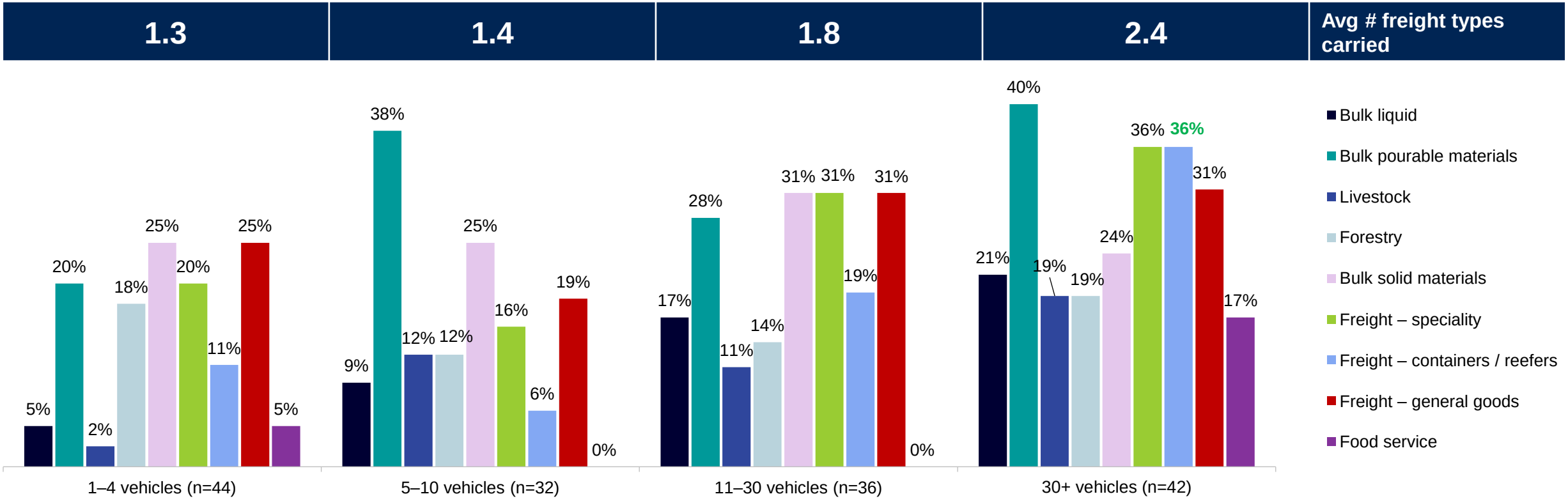


Q6: *Which of the following types of freight does your truck fleet usually carry?* / ***Q8:*** *Which of the following types of trips does your truck fleet usually do?*

Base: *Total sample (n=161)* ****Caution: Small number of respondents in this group.***

Fleet profiles – Freight type by fleet size

Some types of freight are more likely to be carried by businesses that have large (30+ vehicles) fleets, particularly containers and reefers. The diversity of freight types carried also increases with fleet size.

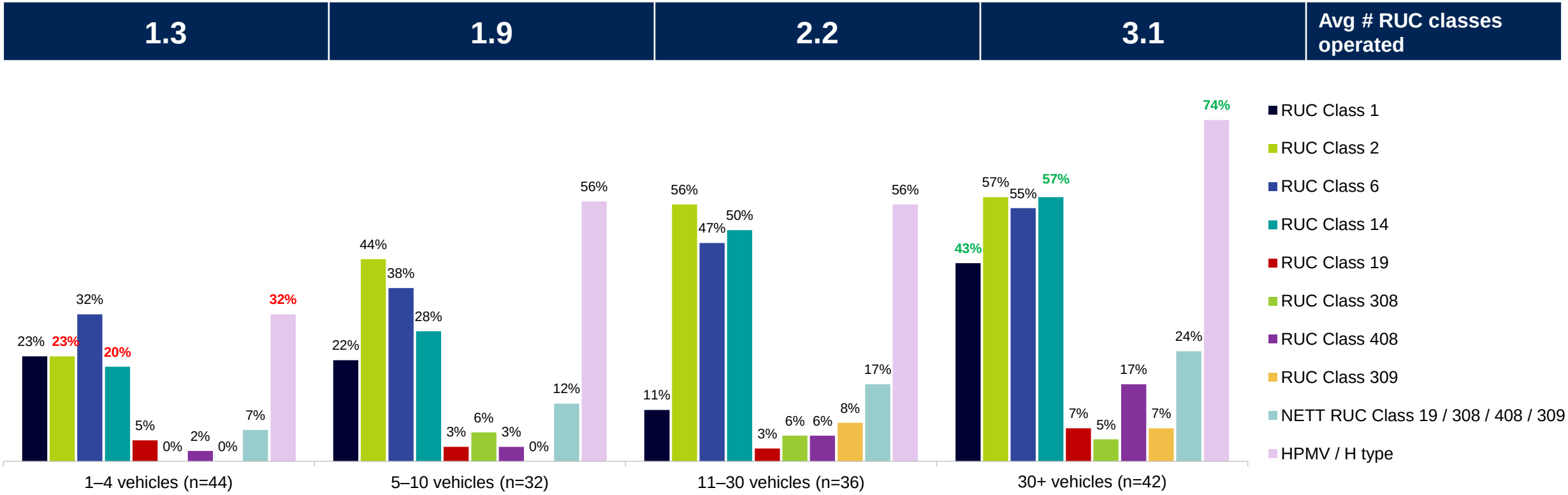


Q6: *Which of the following types of freight does your truck fleet usually carry?* / ***Q10:*** *Approximately how many of each type of truck does your business operate? If you are not sure, please give your best estimate.*

Base: *Each group in the total sample (see chart for base sizes); fleet-size data based on operators who know their fleet size (n=154).* ***Green*** */* ***red*** *indicates significantly* ***higher*** */* ***lower*** *than the total*

Fleet profiles – Fleet size by RUC class

HPMVs are the most common across fleets of all sizes in the survey sample, especially large fleets which also have significantly more than average vehicles with RUC class 1 and 14. Operators of larger fleets (30+ vehicles) had on average 3 different classes of vehicles, while small operators (1 – 4 vehicles) had on average just one type of truck in their fleet.

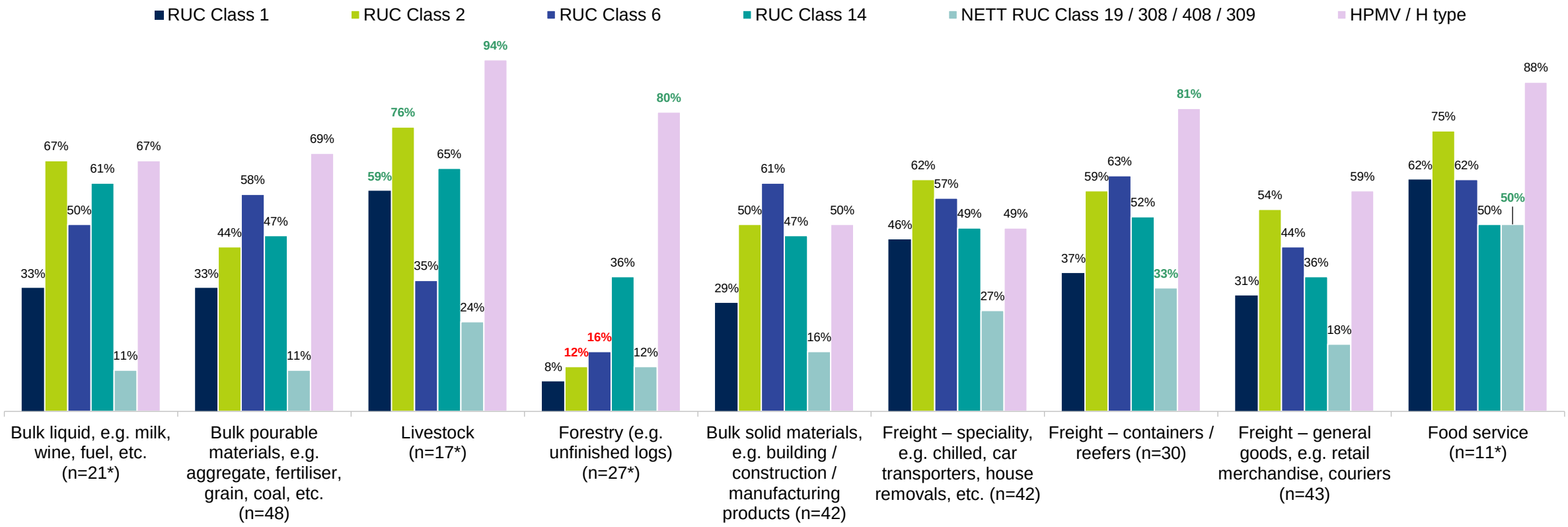


Q10: *Approximately how many of each type of truck does your business operate?* / ***Q11:*** *Thinking about the powered vehicles that you mentioned, how many do you have in each of the following RUC classes? If you are not sure, please give your best estimate.*

Base: *Each group in the total sample (see chart for base sizes); fleet-size data based on operators who know their fleet size (n=154).* ***Green*** */* ***red*** *indicates significantly* ***higher*** */* ***lower*** *than the total*

Fleet profiles – Freight type by RUC class

Different freight types use different RUC classes, e.g. forestry, livestock and container fleets are more likely to use HPMVs; livestock also uses more RUC class 2 vehicles and forestry uses significantly fewer RUC class 2 or class 6 vehicles.



Q11: *Thinking about the powered vehicles that you mentioned, how many do you have in each of the following RUC classes? If you are not sure, please give your best estimate. /* ***Q6:*** *Which of the following types of freight does your truck fleet usually carry?*

Base: *Operators in each RUC class (see chart for base sizes).* ****Caution: Small number of respondents in this group.*** ***Green*** */* ***red*** *indicates significantly* ***higher*** */* ***lower*** *than the total*

BUSINESS OPERATIONS

4

SECTION SUMMARY: BUSINESSES OPERATIONS

This section explores the operations of the businesses surveyed. It explores where transport fits within their business activities, how they feel about fuel efficiency and the factors that make planning for the future of the business especially difficult.

- **62% of operators focus solely on transportation**, while the remainder are involved in other business activities as well.
- Three quarters (76%) work directly with external customers, typically using a mix of short-term contracts and on-demand work.
- **Key challenges cited that make business planning difficult include *rising operating costs*** (82%), *government policy changes* (70%), and *driver retention issues* (57%).

Please note our sample over-represents larger vehicles (particularly HPMV RUC types) and under-represents RUC type 2 vehicles relative to the fleet (please see fleet profiles slide 22 and Appendix 4).

Qualitative observations of the people in these roles

For many operators we interviewed, trucks are considered ‘a way of life’, so they are interested in developments and new tech related to trucks for personal as well as professional reasons.

- Many fleet managers were found to be passionate about trucking and interested in a wide range of truck-related factors including both the technology and the culture. Most interviewees said they go to truck conferences, read the media, websites, and talk to others. The line between their jobs and their lifestyles is blurred. Hence, most are well aware of new tech and development, such as current hydrogen truck trials being run by NZ Post and Fonterra.
- Although this may reflect a self-selection bias of those electing to be interviewed, their senior roles appeared to reflect a self-confident, independent yet service-oriented attitude.

> *“It’s a family business, I run it with my brothers after our father retired.”*

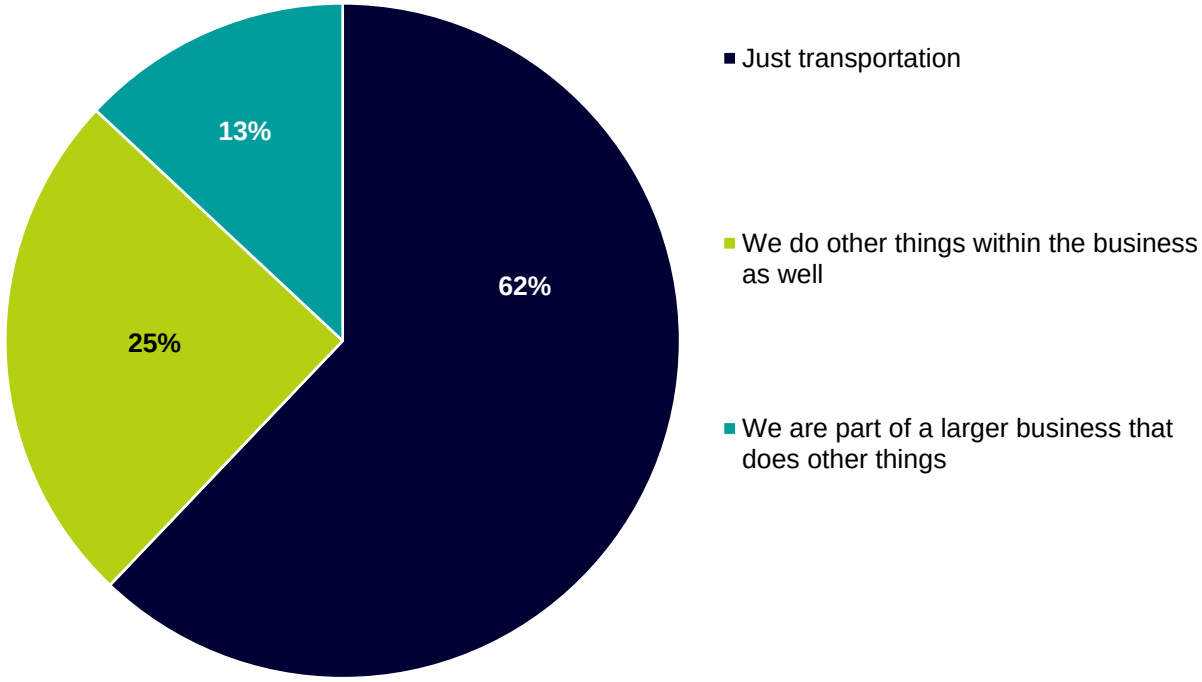
> *“I’m the third generation running the business.”*

> *“Trucking runs in the blood, I’m actually worried about the future because we’re not allowed to have our kids in the cab anymore, so they’re not growing up with it the way we all used to.”*

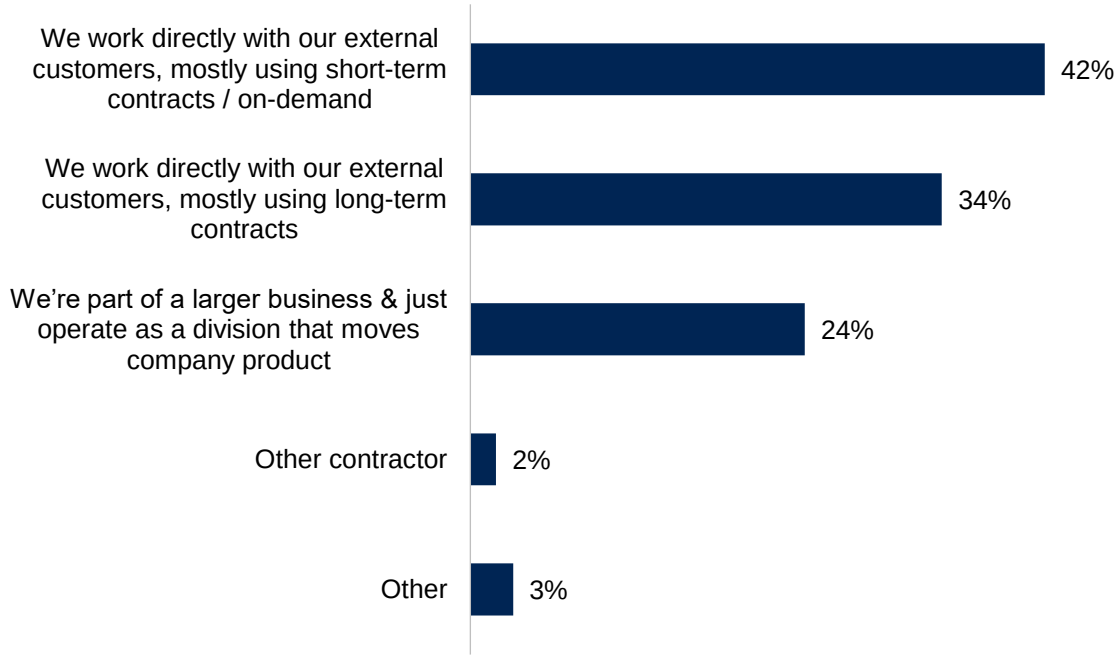
Business operations – Diversity of business activities and transportation's role

62% of the businesses surveyed focus just on transportation.
Most work directly with customers, on either short- or long-term contracts.

Diversity of activities



How transportation side of business operates

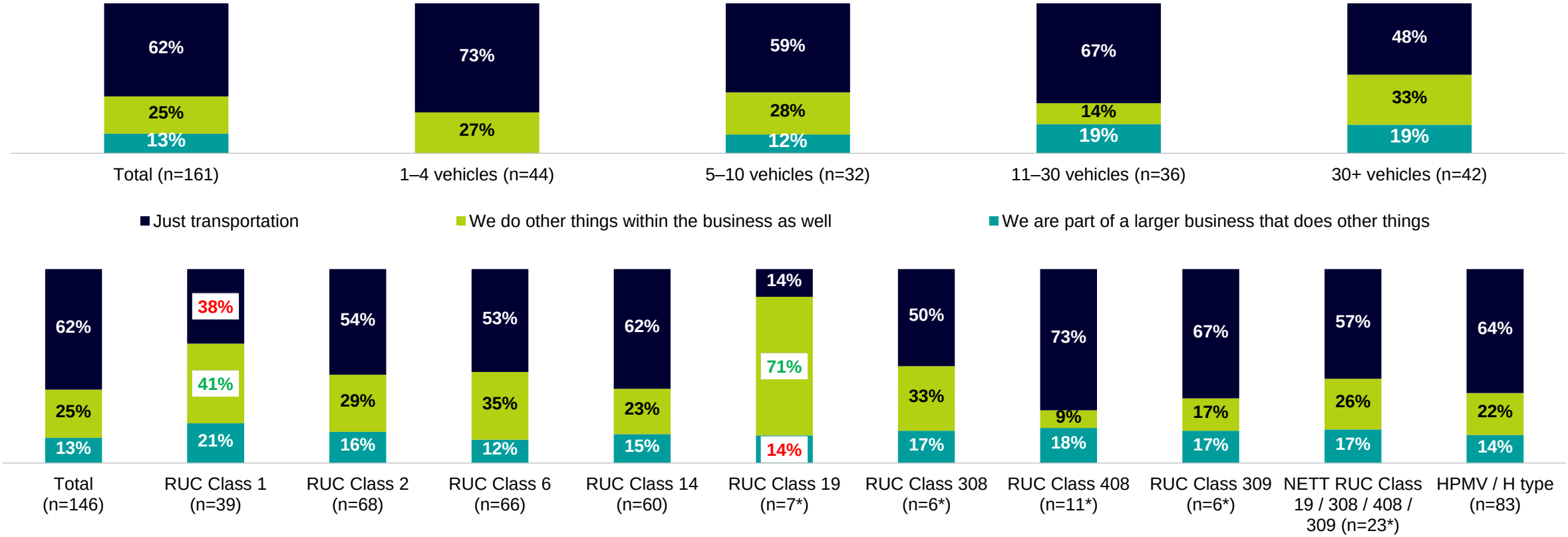


Q15: *Does your business only focus on transportation or does it do other things as well?* / ***Q16:*** *Which of the following describes how the transportation side of your business operates?*
Base: *Total sample (n=161)*

See Appendix 2 for further breakdown of diversity of activities by freight type

Business operations – Diversity of activity by fleet size and RUC class

Nearly 3 in 4 small-fleet operators (1–4 vehicles) surveyed are freight-only businesses. Those with RUC class 1 and 19 vehicles are significantly more likely to have operations outside of just transportation.



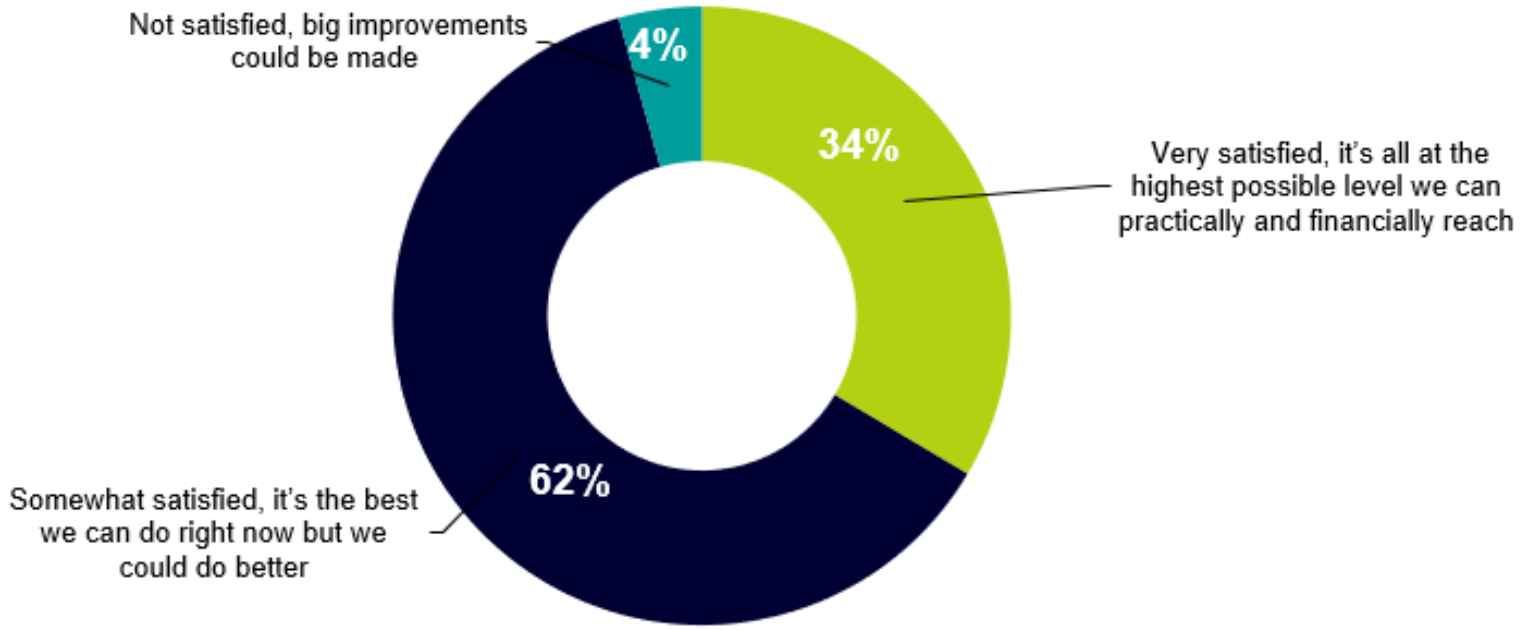
Q10: *Approximately how many of each type of truck does your business operate? If you are not sure, please give your best estimate. /* ***Q15:*** *Does your business only focus on transportation or does it do other things as well ? /* ***Q11:*** *Thinking about the powered vehicles that you mentioned, how many do you have in each of the following RUC classes?*

Base: *Total sample (n=161), operators who know their fleet's RUC classes (n=146), each group (see chart for base sizes); fleet-size data based on operators who know their fleet size (n=154).* ****Caution: Small number of respondents in this group.*** ***Green*** */* ***red*** *indicates significantly* ***higher*** */* ***lower*** *than the total*

Business operations – Current satisfaction with fuel efficiency

When asked about the fuel efficiency of their current fleet, almost two thirds (62%) said that they were “somewhat satisfied, it's the best we can do right now but we could do better”.

Note: *The qualitative stage found that improving fuel efficiency is a regular part of operating a fleet, and so most viable improvements will have been made already.*



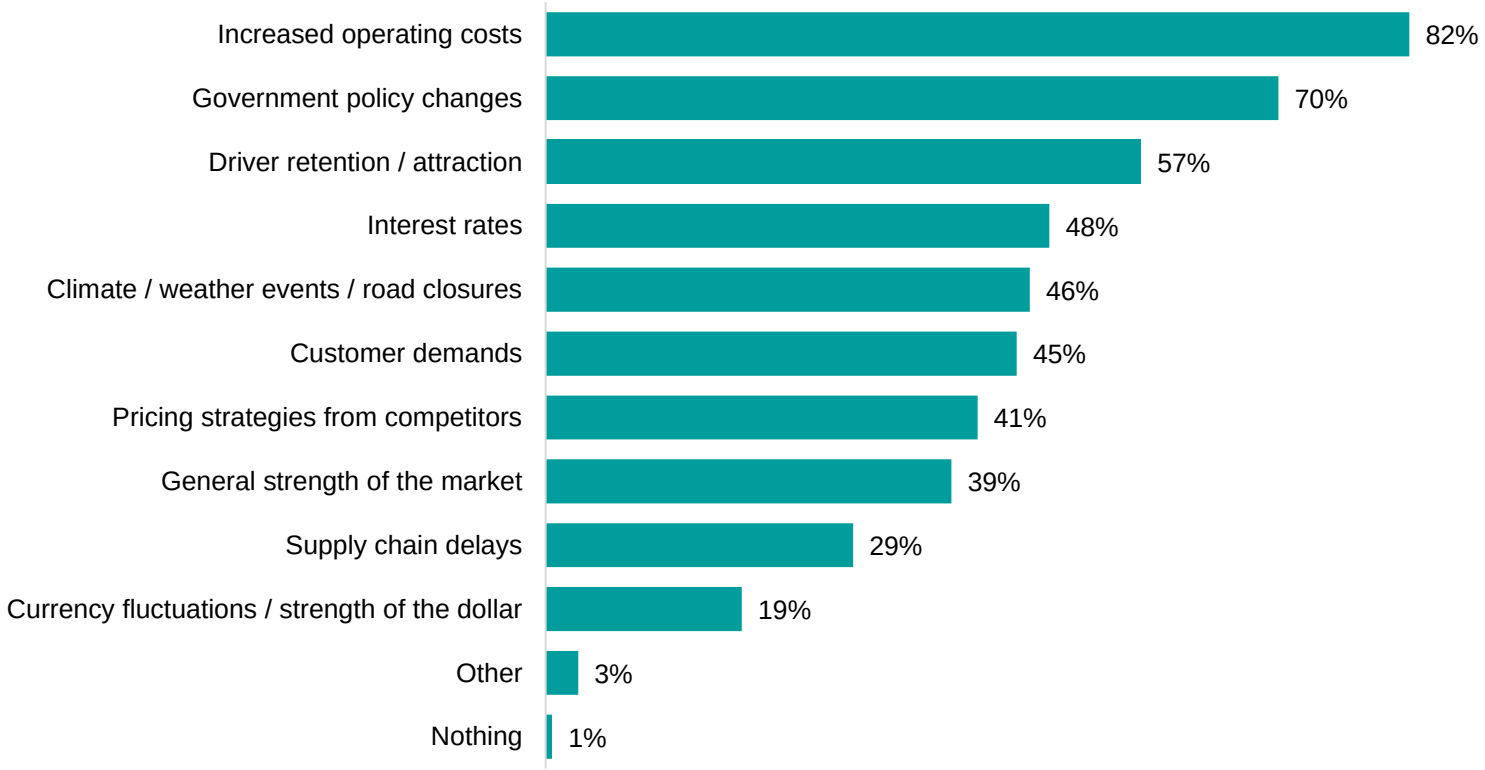
Q55: *How satisfied are you in the current fuel efficiency of your trucks?*

Base: *Total sample (n=161)*

See Appendix 2 for further breakdown of satisfaction of fuel efficiency by fleet size, freight type and RUC class

Business operations - Challenges in future business planning

On average, respondents cited 5 business planning challenges each. The most cited challenges to business planning are *increased operating costs* and *government policy changes*. Driver retention was the third most common issue, which was a common theme also found in the qualitative interviews and was said to have an influence truck selection and fit-out.



> *Employees want to get the good gear, it's a badge of honour. They don't want to drive the old trucks… Finding people who give a s***. They don't care about the next driver."*

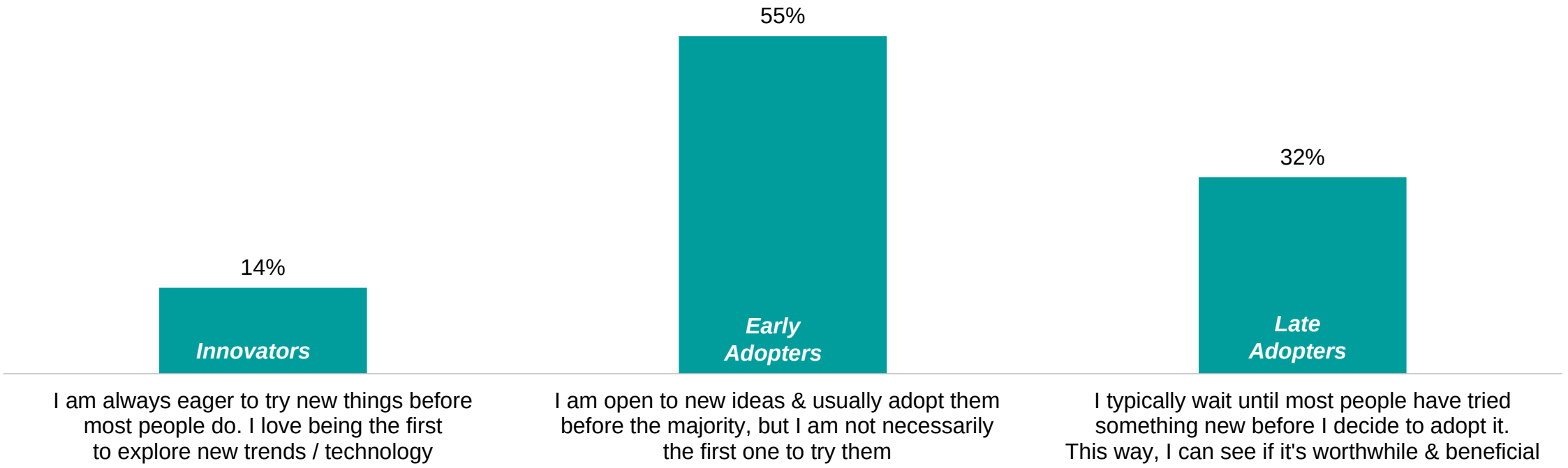
Q22: *Which, if any, of the following make planning for the future of the business especially difficult?*

Base: *Total sample (n=161).* ***Note:*** *Quotes based on findings from qualitative interviews with heavy-vehicle operators.*

See Appendix 2 for further breakdown of challenges in future planning by activity variability, fleet size and freight type

Business operations - Openness to new ideas

The majority of the sample see themselves as ‘Early Adopters’ or ‘Innovators’, with around 1 in 3 identifying themselves as ‘Late Adopters’.



Q3: *Firstly, how would you describe your approach to adopting new ideas, technologies, or trends?*

Base: *Total sample (n=161)*

PURCHASING VS LEASING

5

SECTION SUMMARY: PURCHASING VS LEASING

This section explores whether fleets are purchased or leased and the reasons why. It also looks at future purchase and leasing intent.

- **Fleet and driver management procedures are a blend of internal capacity and external contracting, with practices adapted to suit specific business needs and circumstances**. A significant majority (89%) of the businesses surveyed manage their fleets and drivers in-house. This may be higher than what actually occurs in the industry, given the under-representation of leasers in the sample, if fleet management impacts buying / leasing decisions.

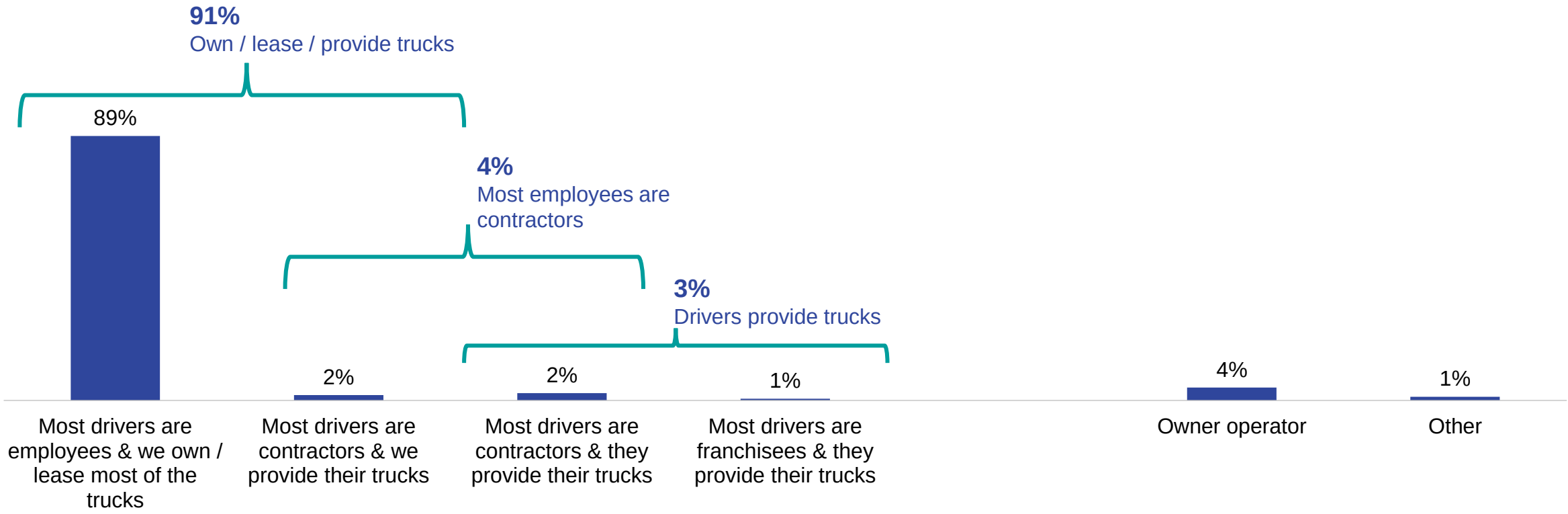
- Amongst our survey respondents, leasing is uncommon (13% leasing any vehicles). **The decision whether to buy or lease a fleet is often influenced by financial reasons:**
  - The most common reason for respondents owning their fleet is that it is financially better than leasing and retains the option to resell. The reasons are similar for all fleet sizes, although those with small fleet sizes (1-4 vehicles) are less likely than larger fleets to see a financial benefit over leasing.
  - The qualitative stage indicated that those that avoid leasing do so because of the ongoing cost obligations it imposes, whereas ownership provides more control over future financial flows (e.g. the ability to sell a truck should there be a business downturn). The qualitative interviews also included some who said that the last few years have reportedly led to an increase in their leasing and used truck purchasing due to global COVID-19 supply chain problems.
  - The number of leasers in the sample was small, so results are indicative, but one of the most common reasons for leasing being seen to be financially better for their business than buying outright, along with meeting short-term needs.

- When asked about **future intention,** close to three-quarters (73%) of respondents intend to purchase at least one new truck in the next 2-3 years. Intention to purchase used trucks is significantly lower (29%). It should be noted that as our sample had a high, non-representative proportion of HPMV vehicles, interest and purchase of used trucks will be low, as importing used HPMV vehicles is uncommon.

Please note our sample over-represents larger vehicles (particularly HPMV RUC types) and under-represents RUC type 2 vehicles relative to the fleet (please see Fleet profiles slide 22 and Appendix 4).

Purchasing vs leasing – Driver / truck ownership model

A significant majority (89%) of businesses surveyed manage their fleet and drivers in-house. This includes both ownership and leasing of most of their trucks. Because of the under-representation of leasers in the sample, this degree of in-house management may be higher than what actually occurs in the industry if fleet management impacts buying / leasing decisions.

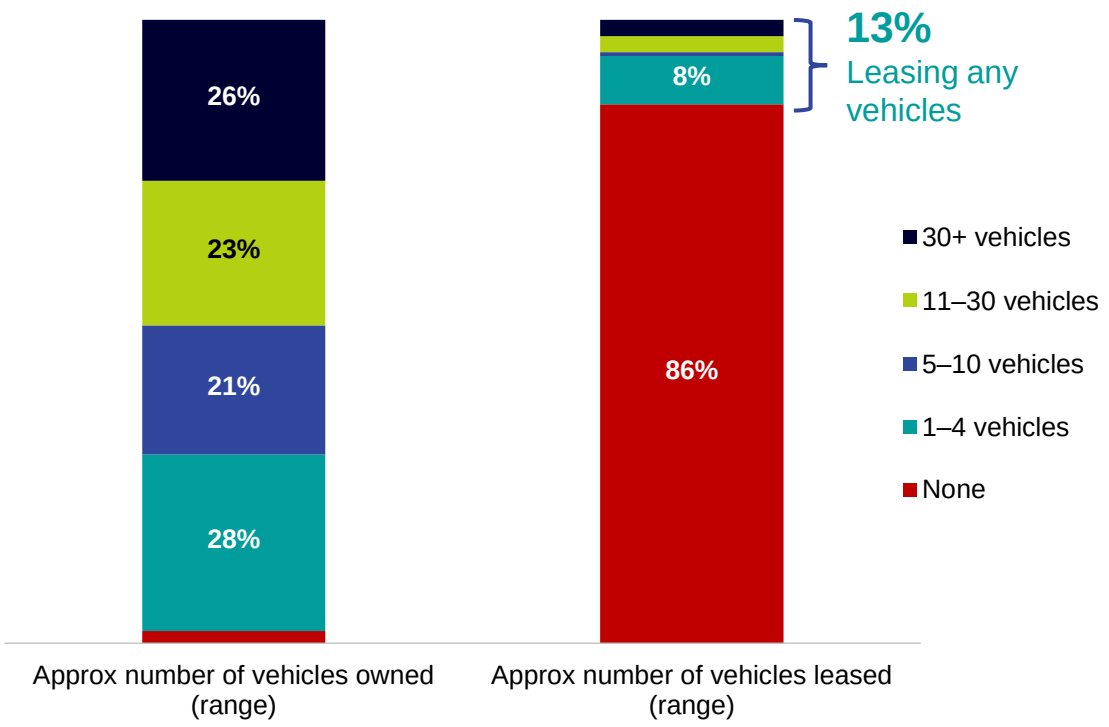


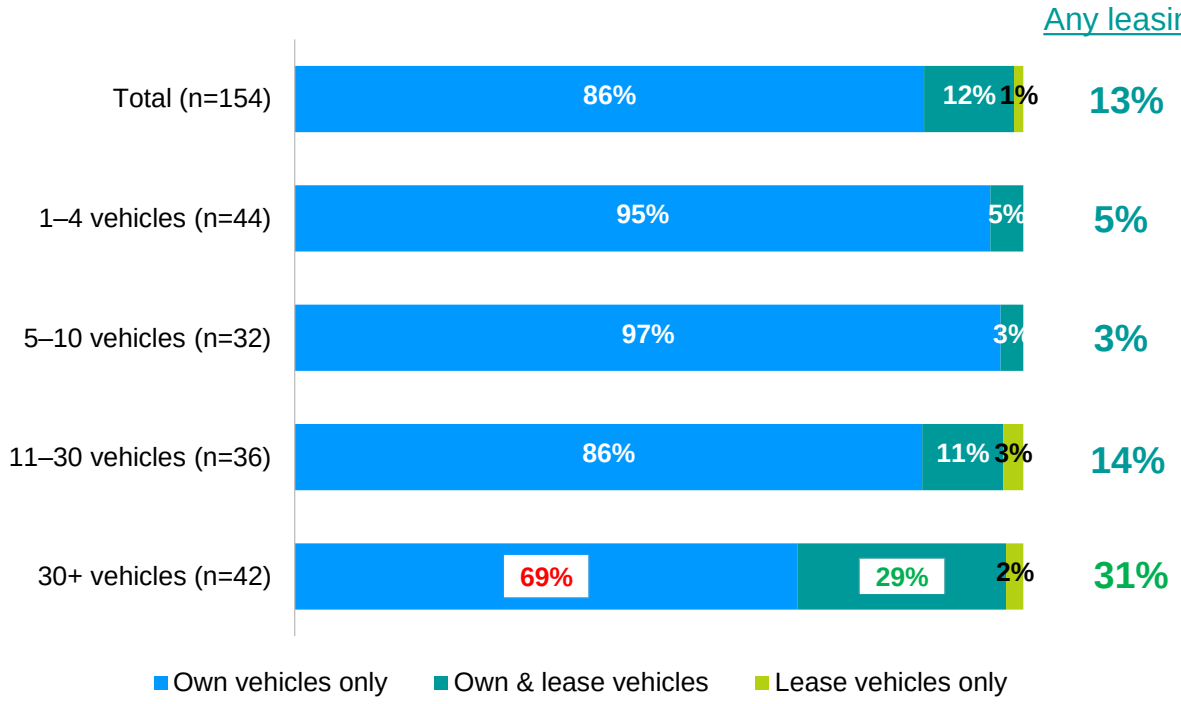
Q33: *Which of the following best describes your business' management of your fleet and drivers?*

Base: *Total sample (n=161)*

Purchasing vs leasing – Fleet size owned and leased

Most of those surveyed are not leasing any of their fleet and 1% indicated that they have lease-only fleets. Larger-fleet operators are more likely to have leased vehicles in their fleet.





> *Some companies are propping up people who shouldn't be in business. I am not a fan of leasing, to be fair."*

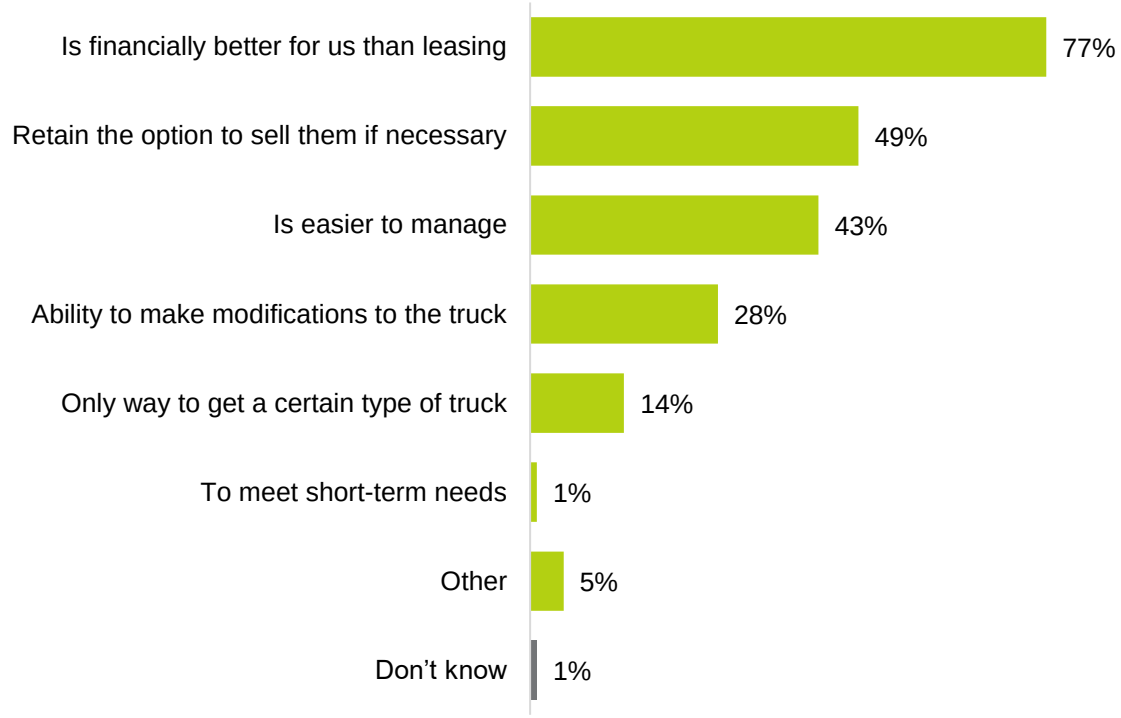
> *Sometimes we make a decision to lease even if the cost is more, as we avoid the expense upfront."*

Q10: *Approximately how many of each type of truck does your business operate?*
Base: *Base: Fleet owners / leasers who know their fleet size (n=154).*
***Green** / **red** indicates significantly **higher** / **lower** than the total*
Note: *Quotes based on findings from qualitative interviews with heavy-vehicle operators.*

Purchasing vs leasing – Reasons for buying

Those who purchase rather than lease trucks are primarily motivated by *financial advantages*, *retaining the option to resell* and *it being easier to manage*.

Reasons for buying instead of leasing vehicles (n=152)



> *No reason why. It's just what we do in our company."*

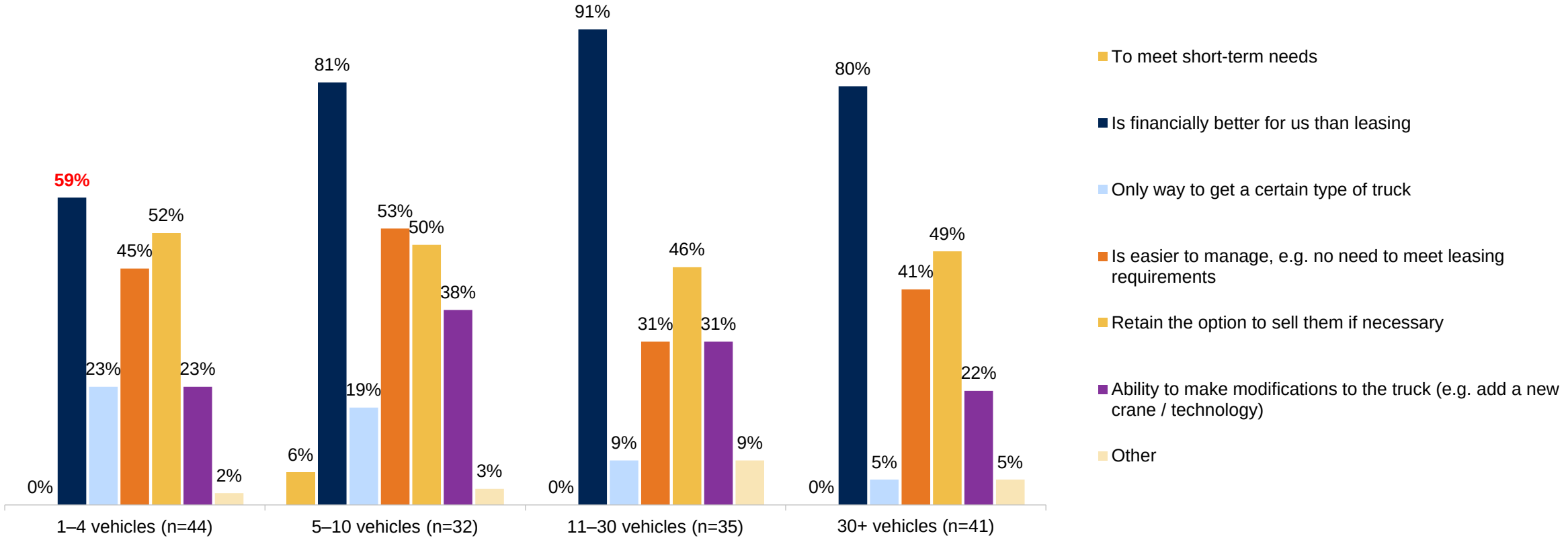
> *We are from a business that's old school, the owner doesn't believe in leasing. You have to give it back in pristine condition, yet you have nothing to show for it."*

Q32: *What are the reasons why you have chosen to buy instead of lease these vehicles?*

Base: *Operators who buy any of their vehicles (n=152).* ****Caution: Small number of respondents in this group. Note:*** *Quotes based on findings from qualitative interviews with heavy-vehicle operators.*

Purchasing vs leasing – Reasons for buying by fleet size

The most mentioned reason for buying is *financial benefits* across all fleet sizes. However, those with smaller fleets are significantly less likely to mention financial reasons, although these remain their most common reason for buying.



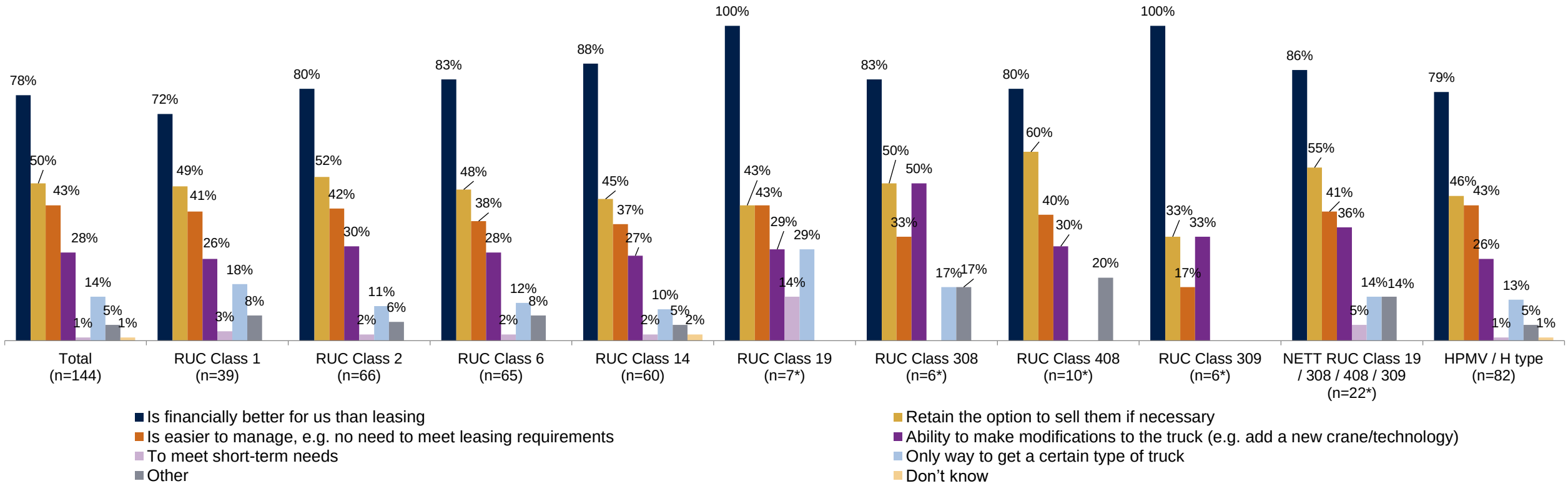
Q32: *What are the reasons why you have chosen to buy instead of lease these vehicles?* / ***Q10:*** *Approximately how many of each type of truck does your business operate?*

Base: *Each group in the sample of truck-owning operators (see chart for base sizes); fleet-size data based on operators who know their fleet size (n=154).* ***Green*** */* ***red*** *arrows indicate significantly* ***higher*** */* ***lower*** *than the total*

Purchasing vs leasing – Reasons for buying by RUC Class

Financial benefits is also the most common reason for buying across all RUC classes. There were no statistically significant differences in reasons between RUC Classes.

Reasons for buying trucks rather than leasing; by RUC classes operated

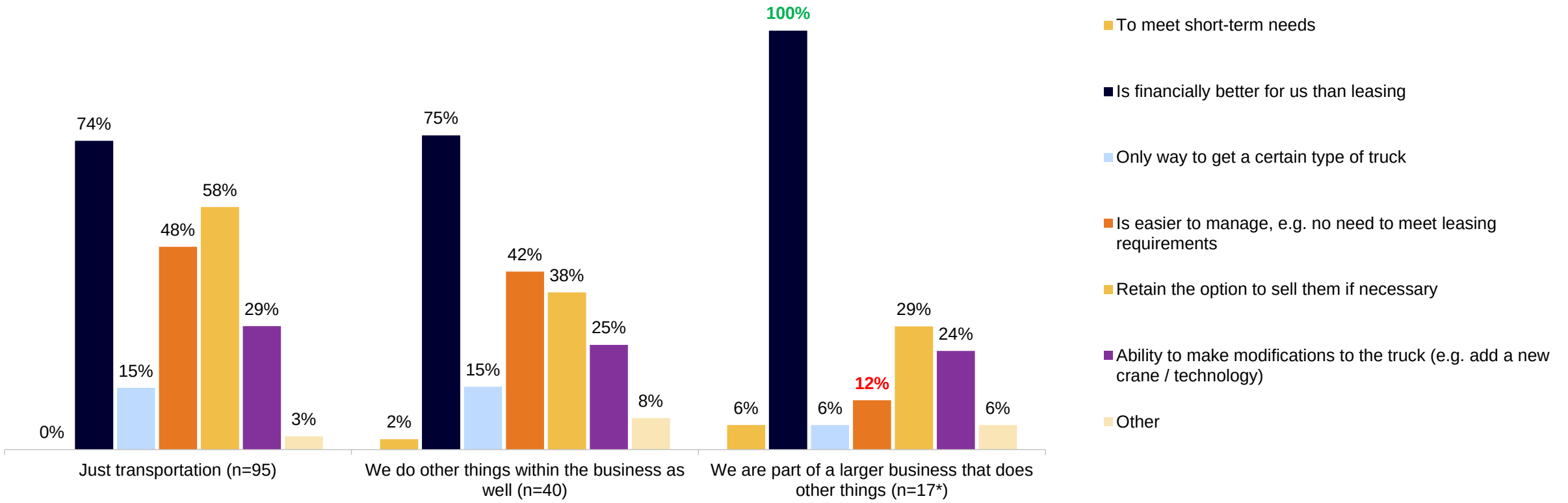


Q32: *What are the reasons why you have chosen to buy instead of lease these vehicles?* / ***Q10:*** *Approximately how many of each type of truck does your business operate?*

Base: *Total sample (n=161), operators who know their fleet's RUC classes (n=146), each group (see chart for base sizes); fleet-size data based on operators who know their fleet size (n=154).* ****Caution: Small number of respondents in this group.***. ***Green*** / ***red*** *arrows indicate significantly* ***higher*** / ***lower*** *than the total*

Purchasing vs leasing – Reasons for buying by activity variability

Respondents whose transport operations were part of a larger business were significantly less likely to buy because it is *easier to manage* and more likely to cite the *financial benefits*. However, *financial benefits* are most common across all activities.



Q32: *What are the reasons why you have chosen to buy instead of lease these vehicles?* / ***Q15:*** *Does your business only focus on transportation or does it do other things as well?*

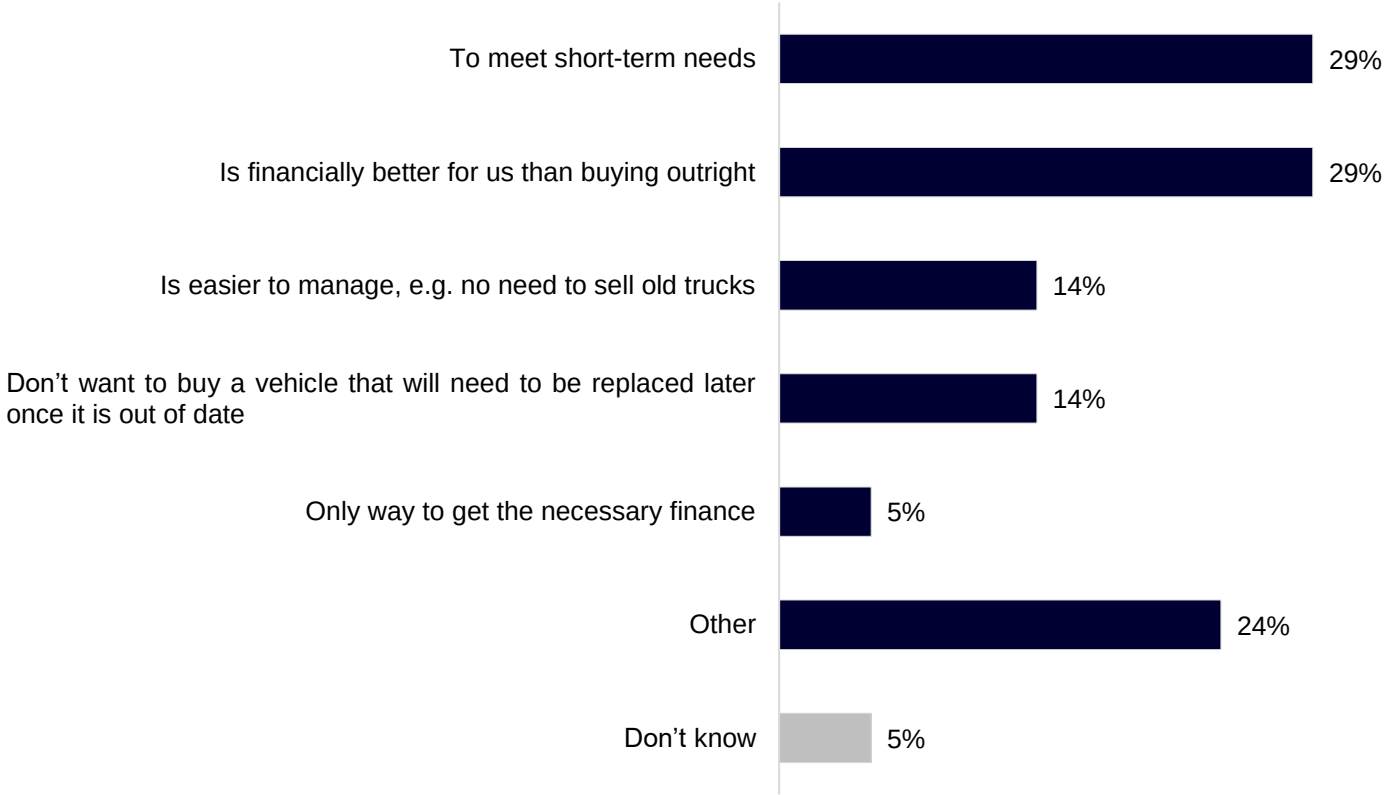
Base: *Each group in the sample of truck-owning operators (see chart for base sizes).* ****Caution: Small number of respondents in this group.*** ***Green*** */* ***red*** *indicates significantly* ***higher*** */* ***lower*** *than the total*

See Appendix 2 for further breakdown of reasons for truck ownership by transport operation

Purchasing vs leasing – Reasons for leasing

For the 13% of operators who lease at least one truck (cf. slide 31), the reason is often solving immediate *short-term needs* or *financial motivations*. Few leasers report *inability to secure financing*. Note that the sample included 21 leasers, so these results cannot be assumed to be representative of all leasers.

Note: *A number operators in the qual said that leasing in recent years was to overcome availability / delivery problems arising from COVID-19.*



> *"Capital from company is used for plant, not vehicles."*

> *"We do not have a dedicated fleet manager. We effectively outsource some portion of the fleet manager role to our lease companies."*

> *"At the time of the lease the company was capital poor. We have since gone back to buying our own trucks."*

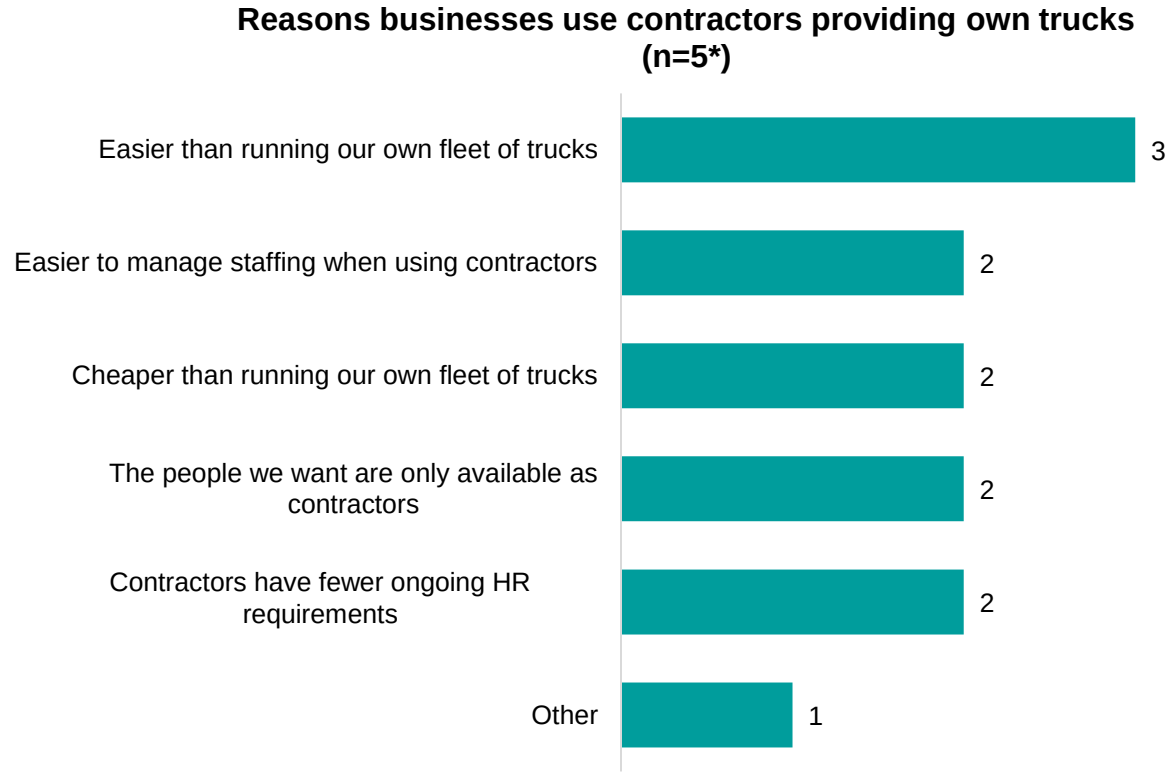
> *"We inherited them."*

Q31: *What are the reasons why you have leased these vehicles instead of buying them?*

Base: *Operators who lease any of their trucks (n=21*).* ****Caution: Small number of respondents in this group. Note:*** *Quotes based on findings from qualitative interviews with heavy-vehicle operators.*

Purchasing vs leasing – Reasons for having contractors provide own trucks

The sample included 5 businesses that use contractors who supply their own trucks, with the primary reasons related to *ease of management.*



Due to small base size the chart shows numbers, not percentages.

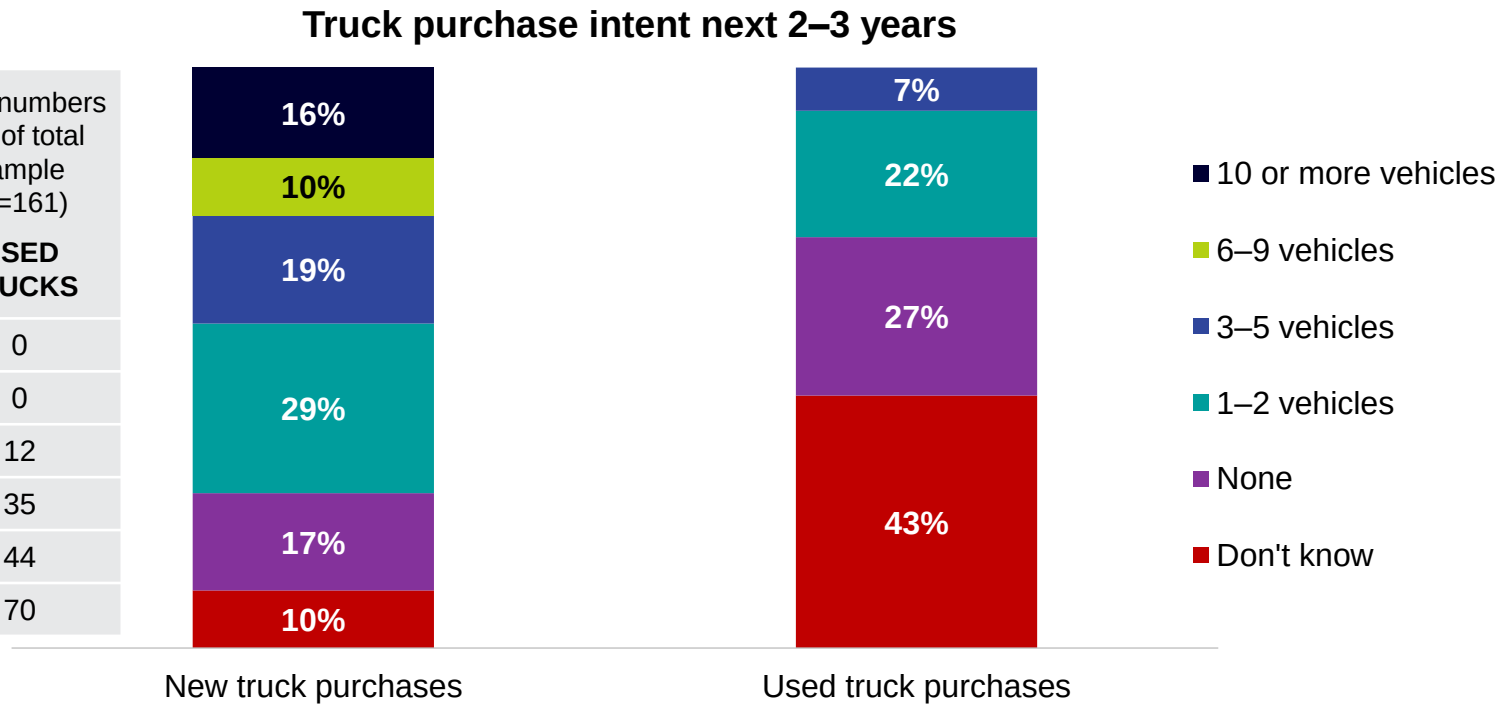
Q32: *What are the reasons why you have chosen to buy instead of lease these vehicles? /* ***Q34:*** *What are the main reasons why your business chooses to use contractors who provide their own trucks?*

Base: *Operators using contractors providing own trucks (n=5*).* ****Caution: Small number of respondents in this group. Note:*** *Quotes based on findings from qualitative interviews with heavy-vehicle operators.*

Purchasing vs leasing – Future purchase intent

Almost half of respondents expect to buy 3 or more new trucks in the next 2–3 years. Planned used-truck purchases are lower than new trucks. It should be noted that these results could be impacted by the sample having a high proportion of HPMV vehicles, as importing these used is uncommon.

	Raw numbers out of total sample (n=161) **NEW TRUCKS**	Raw numbers out of total sample (n=161) **USED TRUCKS**
10+	25	0
6–9	16	0
3–5	30	12
1–2	47	35
None	27	44
Don't know	16	70



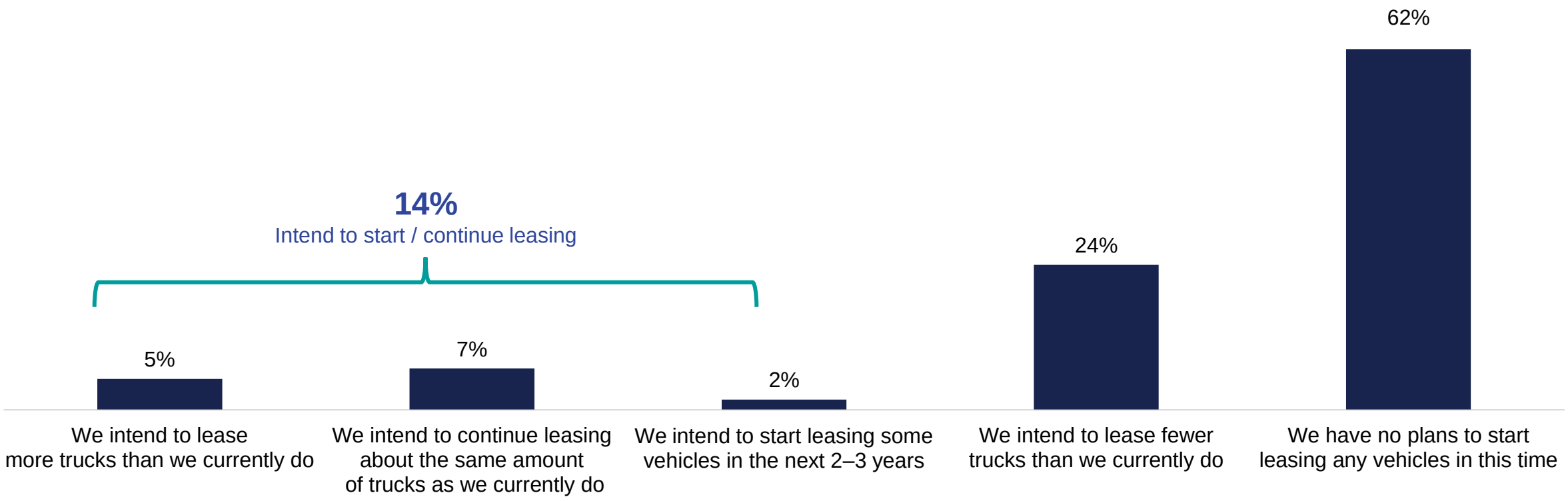
> *We bought one used truck during Covid, when it was hard to get new stock. It's not what we normally do."*

Q40_LEASE: *Approximately how many new trucks do you anticipate buying over the next 2–3 years?* / ***Q40:*** *And approximately how many used trucks do you anticipate buying over the same period?*

Base: *Total sample (n=161)*

Purchasing vs leasing – Future leasing intent

Around a third of respondents were able to comment on the lease status of their fleet – the majority having no plans to start leasing, the remainder being most likely to reduce their leased fleet.



Q40_LEASE: *And which of the following applies to your intended truck leasing in the next 2–3 years?*

Base: *Operators who know the current size of their leased fleet (n=58)*

PURCHASING PRACTICES

6

SECTION SUMMARY: HEAVY-VEHICLE PURCHASING PRACTICES

This section explores truck purchasing practices. It investigates procurement practices, when and why a new truck might be purchased, and the key factors considered during the section process.

- The **truck purchasing process skews slightly to being informal**, with a little over a third of those surveyed having a more informal approach to purchasing trucks.
  - **Procurement formality tends to increase with fleet size**, as it does also in relation to **openness to new ideas** – increasing openness and formality.
- The most common factors that lead to truck purchase are the milage and condition of the current truck(s) in the fleet.
- When deciding upon which truck to get, the **selection criteria** skew towards **the need for the truck functionality**: *reliability*, *engine performance*, *past experience*, *brand / supplier preferences*, *model*, *size and driver safety*. Also important are *supplier relationships / service, driver comfort*, and *the overall price.*
  - **Emission performance has some influence but ranks below operating costs and other functionality** considerations for most operators.

Please note our sample over-represents larger vehicles (particularly HPMV RUC types) and under-represents RUC type 2 vehicles relative to the fleet (please see Fleet profiles slide 22 and Appendix 4).

Qualitative observations of truck-purchasing practices (1)

Detailed business cases and cost scenarios are not always done.

- The business cases made for boards, managers, or financiers was said by most of our respondents to be fairly simple, especially for companies or people with proven track record. General criteria considered were mainly said to be:
  - Anticipated need and reason (e.g. is this replacing a truck, meeting growing needs, etc.)
  - State of current fleet / truck(s) to be replaced, cost of retention / value in selling
  - Predicted revenue / past records to cite (i.e. to indicate debt-servicing capability)
  - Anticipated resale value (current trucks to be sold and/or forecast resale value of new truck).
- The term ‘Total cost of ownership’ was seldom referred to in this way or thoroughly analysed in great depth, with some summarising the calculation as mainly a case of ‘does a truck earn you more than it costs?’ However, this was not borne out in the quantitative survey results, where total cost of ownership calculations were shown to be more prevalent.
- Some of those we interviewed actively looked for new ways to gain business improvements. For some, technology was particularly desirable for cost reduction, but this could be tempered against brand loyalty, as familiarity aids fleet uniformity, flexibility, parts management, and driver satisfaction. Hence, there were many arguments presented by respondents both for and against adopting new technology.

> *“You have to weigh up the options of the price and the return and how long does it take to pay for itself or if there’s a market out there for it for them for that scenario.”*

Qualitative observations of truck-purchasing practices (2)

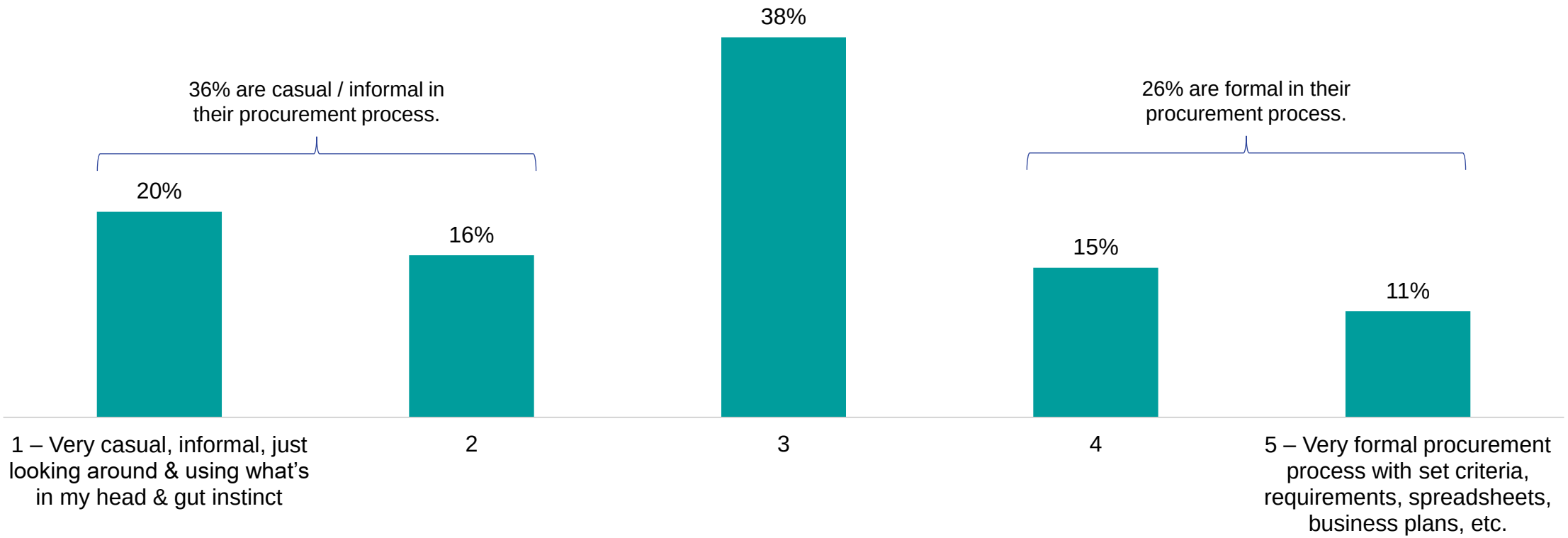
Larger operators tend to rely upon their own knowledge of what vehicle upgrades are needed

- For some larger fleet operators (whose purchase volumes reportedly earnt them extra influence), suppliers were said almost to be simply ‘order-takers’ as opposed to ‘selection consultants’. Such buyers said they tended not to quiz their suppliers in depth, as they already had strong opinions on what they wanted, especially to fit in with the existing fleet. Manufacturers also provide much information online for potential customers to access independently.
- The size of the purchase combined with the lead-times mean that new truck purchase decisions are usually made well in advance, and timed so that the truck being replaced is likely to be reaching its limit when the new truck arrives (typical reported ages of new-truck replacement is 3–7 years / 1 million km, and purchase decisions made around a 12–24 months before the anticipated replacement time).
- The last few years were said by some participants to have led to an increase in leasing and used truck purchasing due to global COVID 19 supply chain problems, but that these constraints are now easing.

> *“We’re constantly monitoring what’s going on, constantly in contact with the suppliers, as they know what’s available, they know what the market looks like, they know what other people are buying and they know what payload they want to get out of it, so they know what they need to do to make it work.”*

Purchasing practices - Formality of procurement process

The sample skews slightly towards a more casual process for truck procurement; respondents were twice as likely to be ‘very casual’ than ‘very formal’ with their procurement process.

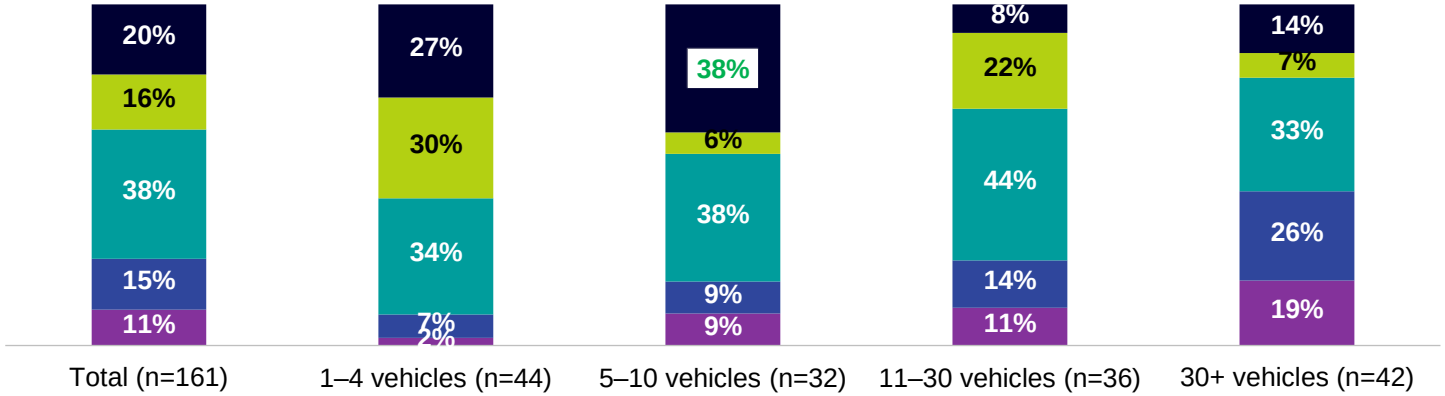


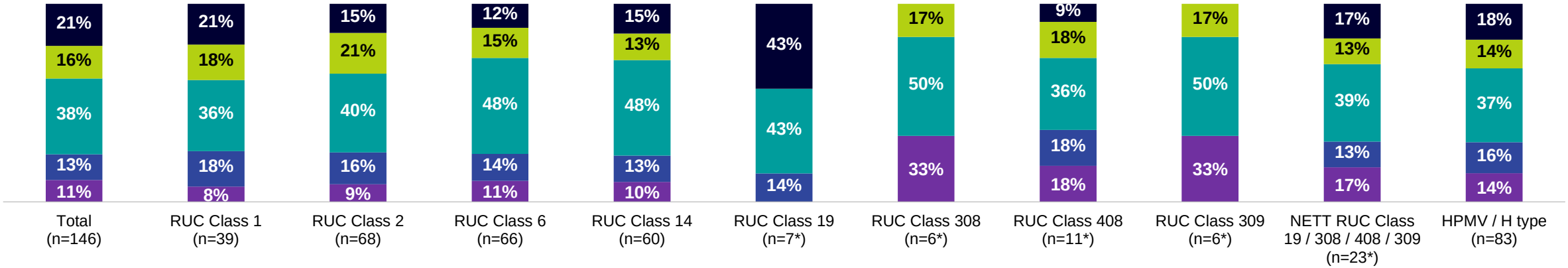
Q43: *Thinking about your normal process of evaluating what trucks to buy or lease, how formal is the process you usually go through?*

Base: *Total sample (n=161)*

Purchasing practices - Procurement formality by fleet size and RUC class

Although there are few statistically significant differences, there does appear to be a relationship between fleet size and procurement formality – the larger the fleet, the more formal the process. Conversely, there is little relationship between RUC class and procurement formality.



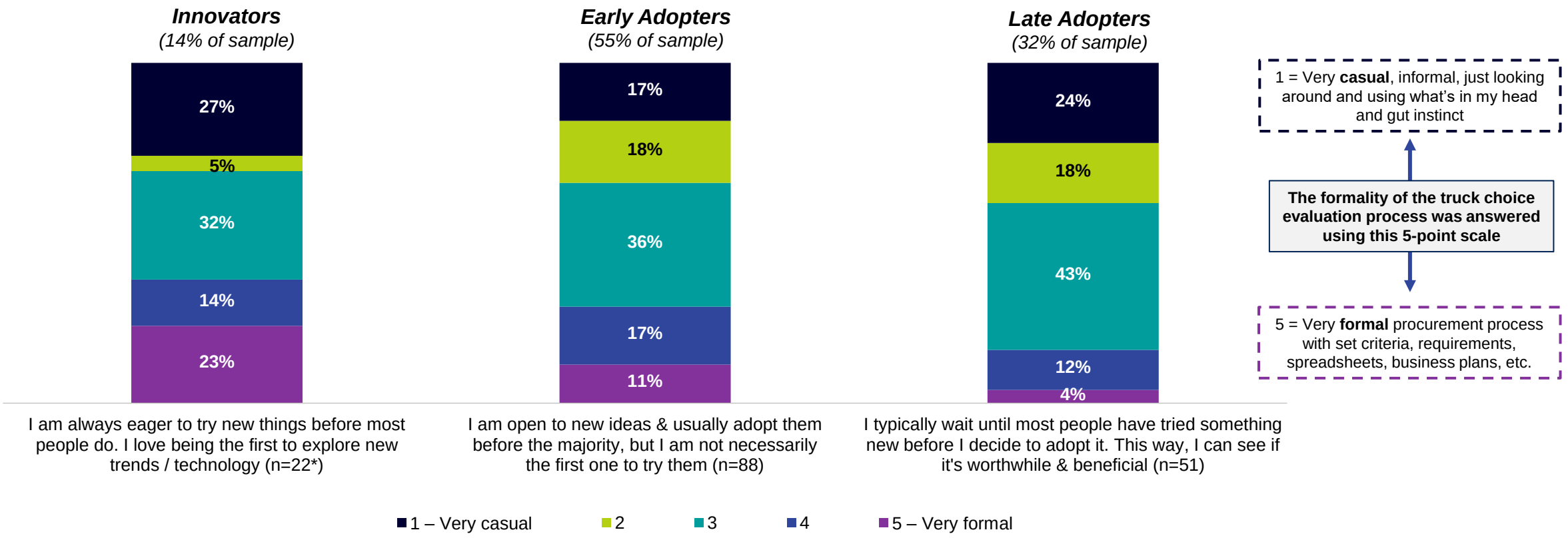


Q43: *Thinking about your normal process of evaluating what trucks to buy or lease, how formal is the process you usually go through?* / ***Q10:*** *Approximately how many of each type of truck does your business own?* / ***Q11:*** *Thinking about the powered vehicles that you mentioned, how many do you have in each of the following RUC classes?*

Base: *Total sample (n=161), operators who know their fleet's RUC classes (n=146), each group (see chart for base sizes); fleet-size data based on operators who know their fleet size (n=154).* ****Caution: Small number of respondents in this group.*** ***Green*** / ***red*** *indicates significantly* ***higher*** / ***lower*** *than the total*

Purchasing practices - Procurement formality by openness to new ideas

In general, the more open a business is to new ideas, the more formal their procurement process tends to be. Almost 1 in 4 ‘Innovators’ had a ‘very formal’ procurement process in place, compared to 1 in 10 ‘Early Adopters’ and less than 1 in 20 ‘Late Adopters’.



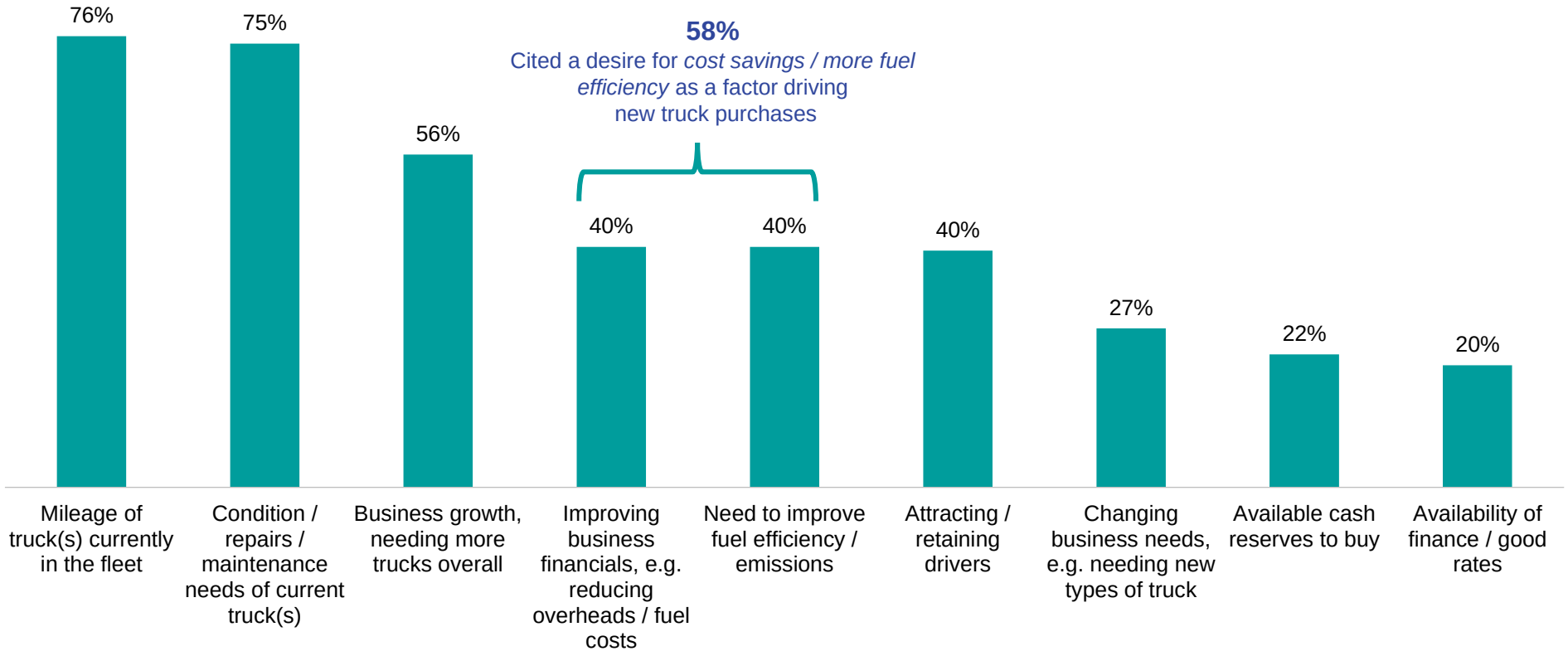
Q43: *Thinking about your normal process of evaluating what trucks to buy or lease, how formal is the process you usually go through? /* ***Q3:*** *Firstly, how would you describe your approach to adopting new ideas, technologies, or trends?*
Base: *Each group in the total sample (see chart for base sizes).* ****Caution: Small number of respondents in this group.***

See Appendix 2 for further breakdown of procurement formality by freight type

Purchasing practices– Factors leading to getting a truck

Mileage and *general condition* are the factors most likely to be considered when planning to replace an existing truck.

The qualitative stage found that most new truck purchases are planned some time in advance, based on the time at which a current truck is expected to reach its replacement mileage.



> *"We have a budget every year. We know what we're working towards, and I can look ahead and I'm thinking, 'yeah, we're probably going to need to replace this four-wheeler'."*

> *"You might want to think about, you know, there's a bit of rust starting to form on this vehicle, and that's probably going to turn into an issue in the next year or two."*

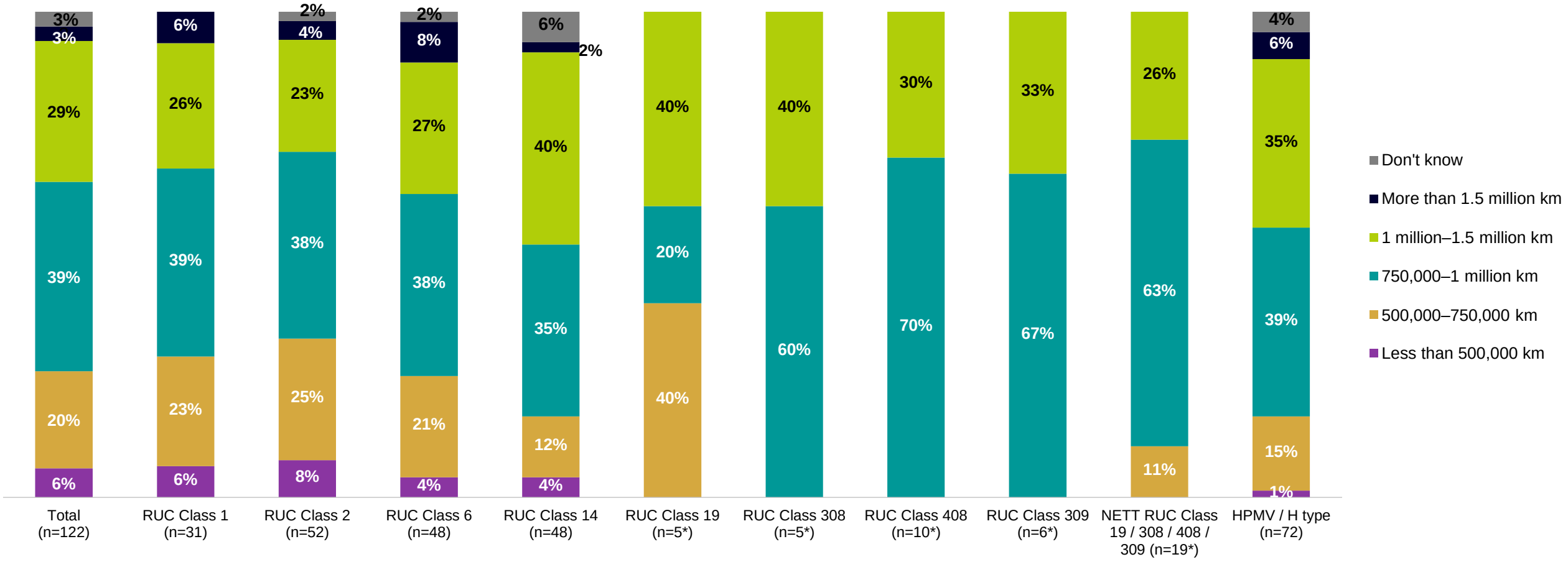
Q41: *Regardless of whether they are new, used, bought or leased, what factors generally lead to getting a new truck?*

Base: *Total sample (n=161)*

See Appendix 2 for further breakdown of factors leading to getting a new truck by fleet size and RUC class and freight type

Purchasing practices – Truck replacement mileage by RUC class

The majority look to replace or downgrade a truck once it has reached around 1 million km. Variations across RUC classes are not significant.

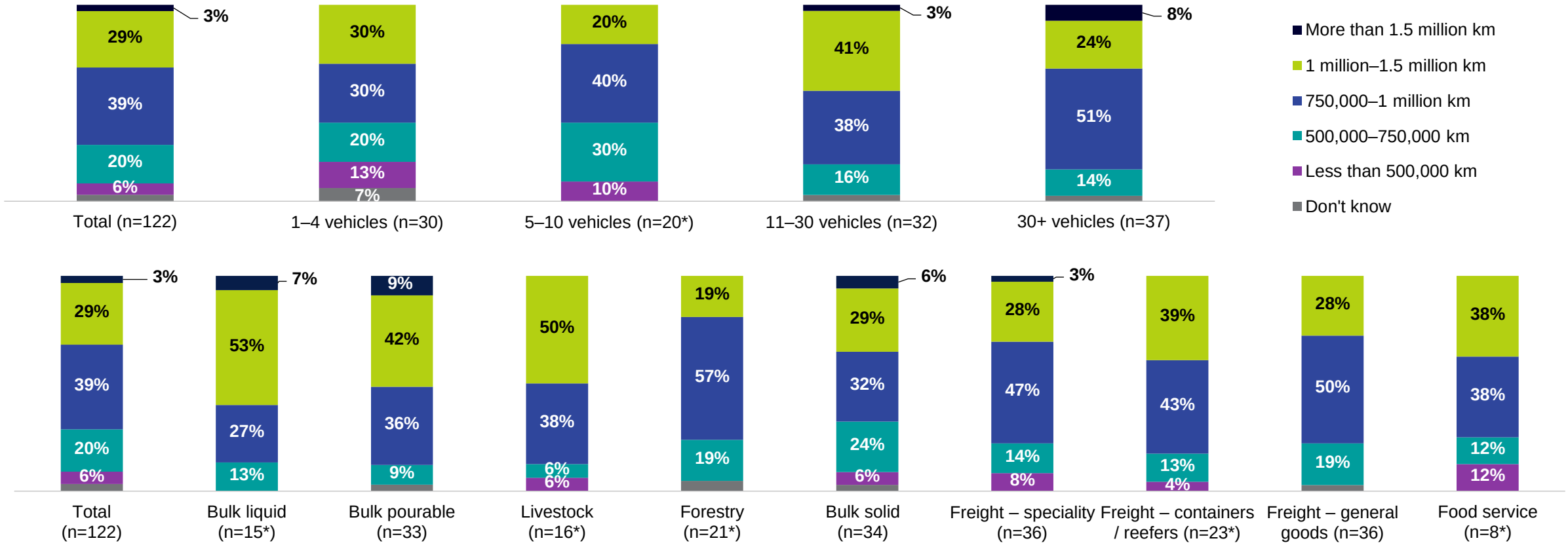


Q42: *At what mileage do you usually replace a truck or put it onto lighter duties?* / ***Q11:*** *Thinking about the powered vehicles that you mentioned, how many do you have in each of the following RUC classes?*

Base: *Operators who state* mileage *is a factor in getting a new truck and know their fleet's RUC classes (n=114), each group (see chart for base sizes).* ****Caution: Small number of respondents in this group.***

Purchasing practices – Truck replacement mileage by fleet size and freight type

Operators with larger fleets (11+ vehicles) tend to replace or downgrade their trucks at higher mileages. Those transporting bulk solids or in forestry tended to replace their trucks earlier, while bulk liquid and livestock carriers change later.



Q42: *At what mileage do you usually replace a truck or put it onto lighter duties?* / ***Q10:*** *Approximately how many of each type of truck does your business own?* / ***Q6:*** *Which of the following types of freight does your truck fleet usually carry?*
Base: *Operators who state* mileage *is a factor in getting a new truck (n=122), each group (see chart for base sizes); fleet-size data based on operators who know their fleet size.* ****Caution: Small number of respondents in this group.***

Qualitative observations of truck selection practices

Minimising brand variation amongst a fleet is desirable.

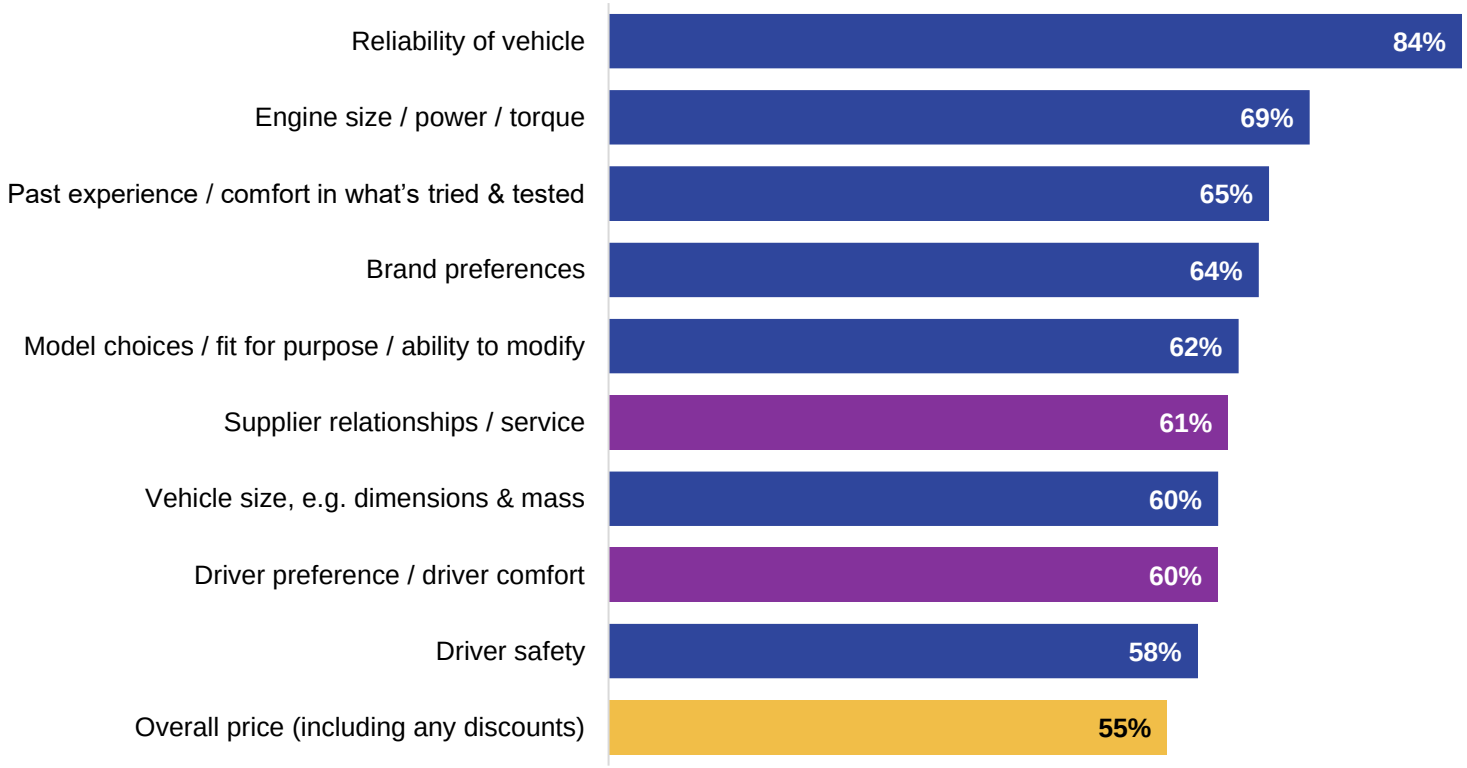
- Brand loyalty is evident; when a brand performs well, some see little need to change for the sake of it, unless other factors strongly override this (typically price, availability, or specific configurations). Brand loyalty is also reflected in loyalty to a given supplier, and the better servicing and support that comes from a strong supplier relationship.
- Maintaining brand similarity across trucks in a fleet was said to make it easier for drivers to be allocated across different trucks, as well as improving parts availability and ease of servicing.
- Truck choice is also influenced by the need to keep drivers satisfied, as participants reported there being a shortage of quality drivers. This can lead to truck selection being influenced by factors related to driver comfort.

> *We picked the new Scania, you can run the aircon or heater all night long, which is really important when drivers are expected to sleep in them."*

> *Ninety percent of the fleet is Volvo, for two reasons. They're easy to drive, and over the years I've gathered up enough spare bits that we can fix most things."*

Purchasing practices – Top-10 truck selection factors

Overall, the factors considered in selecting a new truck relate to perceptions of the **vehicle** itself – *reliability*, *engine*, *brand* and *past experience*. Practical and financial considerations are generally of lower importance compared to the functionality of the vehicle itself.



Vehicle considerations

Financial considerations

Practical considerations

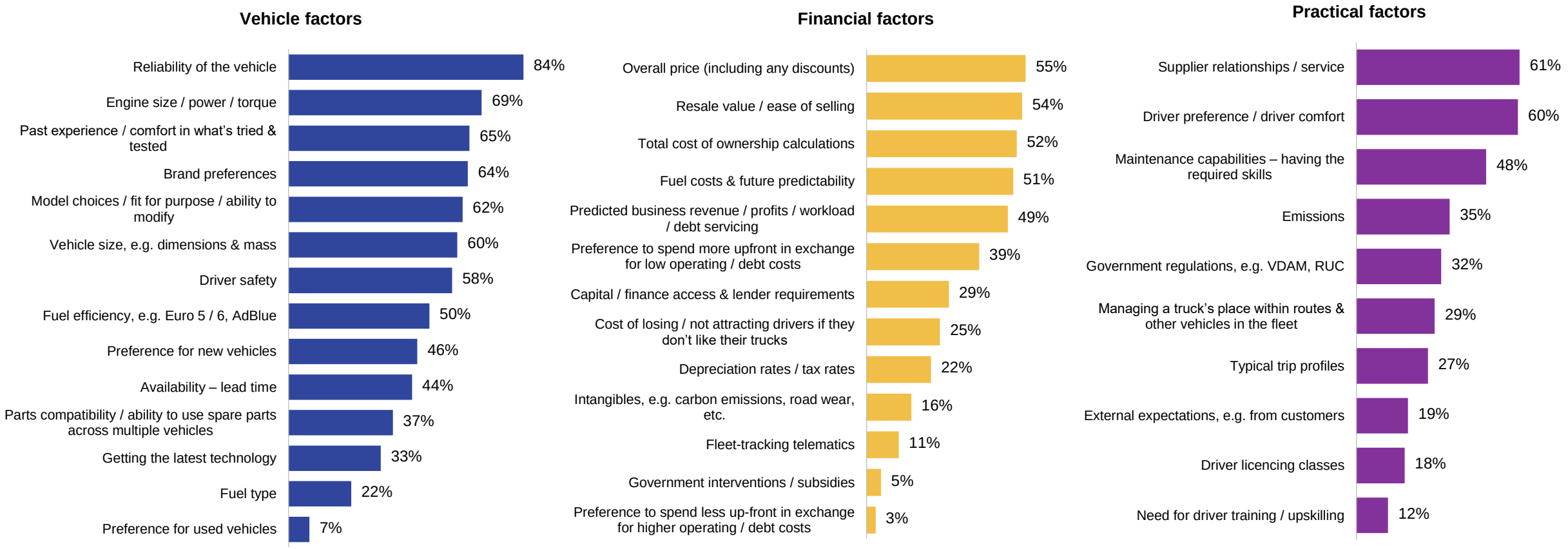
"Employees want to get the good gear, it's a badge of honour. They don't want to drive the old trucks. The new got the bells and whistles, nice, and you can kind of go to sleep in it."

Q47 / Q48 / Q49: *Which of the following vehicle / financial / practical factors are seriously considered when deciding upon what truck to get?*

Base: *Total sample (n=161)*

Purchasing practices – Truck selection factors

When all the factors that were rated are ranked, *emissions reduction* was mentioned by 35%, behind 21 other factors.



Q47 / Q48 / Q49: *Which of the following vehicle / financial / practical factors are seriously considered when deciding upon what truck to get?*

Base: *Total sample (n=161)*

FLEET MANAGEMENT AND MAINTENANCE

7

SECTION SUMMARY: FLEET MANAGEMENT AND MAINTENANCE

This section explores fleet management practices relating to management and maintenance including maintenance practices and the storage of fleet management information.

- Just **over half of truck fleet maintenance is handled in-house**, with 46% of operators contracting all maintenance externally. In-house capability is highest amongst businesses with larger fleets (those with 30+ vehicles).

- **Fleet maintenance usually has a degree of formal management,** with 80% of respondents keeping fleet management notes to some degree, with the balance claiming to keep all their fleet management information 'in their head'.

- The **main sources of information about new technological innovations are *general industry media*, *suppliers / manufacturers,* and *business groups***. Those with larger fleets are especially likely to get information from *suppliers and manufacturers.*

Please note our sample over-represents larger vehicles (particularly HPMV RUC types) and under-represents RUC type 2 vehicles relative to the fleet (please see Fleet profiles slide 22 and Appendix 4).

***Note:** Defined in the questionnaire as 'around a region'.*

Qualitative observations of fleet maintenance practices (1)

Fleet maintenance is a high-involvement subject.

- For the majority of respondents, truck purchases are high-involvement, high-cost purchases that fleet managers clearly remember making, and some still regularly use the trucks personally (more likely in smaller businesses). This helps managers easily keep track of their usage, route assignation, repairs and maintenance.
- As a result, some managers tacitly know the age and usage levels of each truck and simply ‘keep an eye’ on what’s happening. Some will just keep informal notes for their own use, e.g. projecting trucks’ mileage based on their normal use, so that they have an idea of when replacements are likely to be necessary and can diarise when a new truck purchase should be initiated.
- Of those surveyed in the quantitative analysis, 20% said that they kept track of their fleet “in their head”, whereas 33% indicated that they kept track “mostly in their heads with some notes and records“.
- Detailed analytics and record-keeping is not front of mind for some; in the main telematics was reportedly used for RUC management and occasionally for comparing metrics across trucks and reviewing driver behaviour.

> *“Everything I do is in my head. I am small enough to remember just about everything.”*

> *“This spreadsheet tells me when each truck is likely to reach 750,000km. When they do, it’s time to plan for a new one.”*

Qualitative observations of fleet maintenance practices (2)

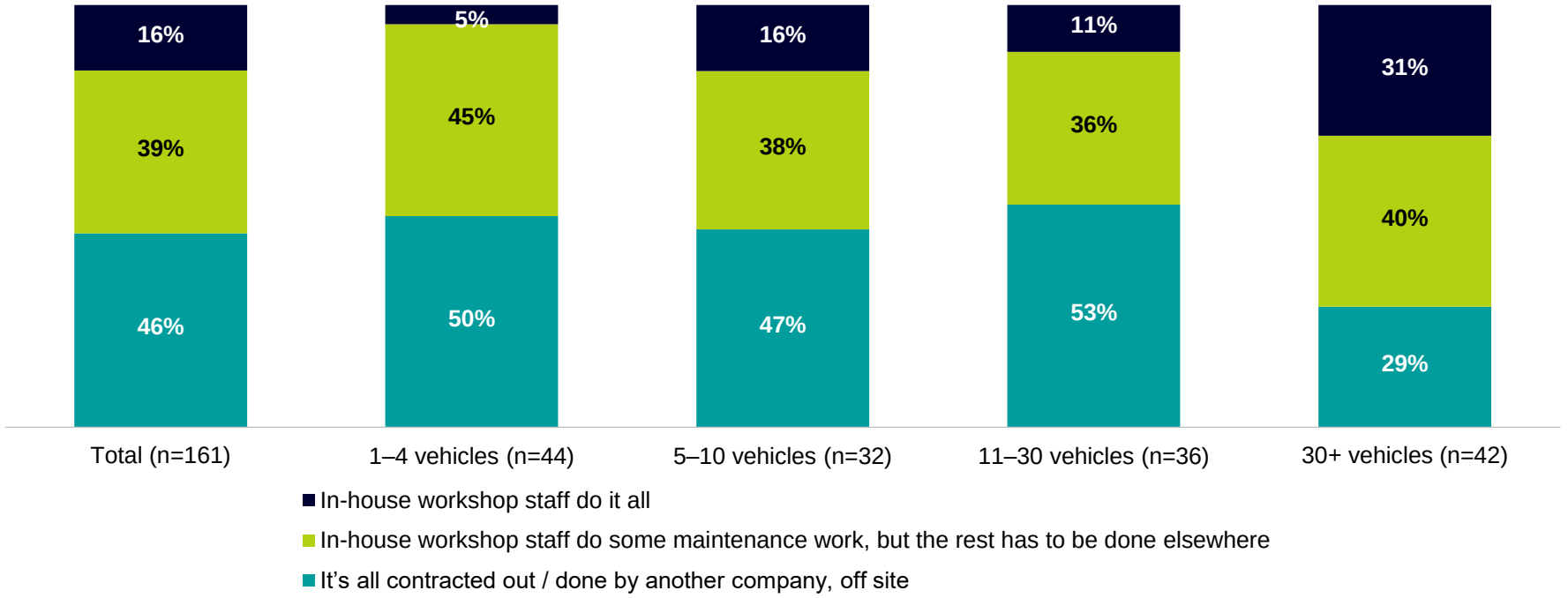
Repairs and maintenance habits influence truck management.

- Some respondents reported that the newer the truck, the more likely that its maintenance will be outsourced – this reflects supplier warrantee / service arrangements, plus the increasing complexity of trucks (especially for computer maintenance).
    - Some use established programmes for their brand, e.g. from the manufacturers or lease companies, that simplify servicing and breakdown repairs.
    - Mechanic shortages also influence management, especially in provincial areas. This encourages in-house maintenance, which was felt to be more reliable.
- Owners of older fleets tended to retain more of their fleet maintenance in-house'. Some claimed that this was because older trucks were mechanically easier to maintain and had stored spare parts for this.
- Some businesses reported that they managed their trucks according to the status of their drivers and their likelihood of breaking down, e.g. older trucks stay closer to home and do less demanding / critical work, while high-status drivers (experience, skills, etc.) tend to be assigned the newer trucks.
- Some operators were highly interested in new technology, stating that they did not want to miss any opportunities for improving efficiency and competitiveness.

> *"If we were to blow an engine in a truck today, chances are they'll have one in the storeroom, and our lease company can shoot it straight up to us."*

Fleet management - Maintenance practices by fleet size

Overall, 46% of businesses contracted out all their maintenance. There are no statistically significant differences between in-house workshop usage and fleet size, although operators with 30+ vehicles had the highest proportion of in-house maintenance.



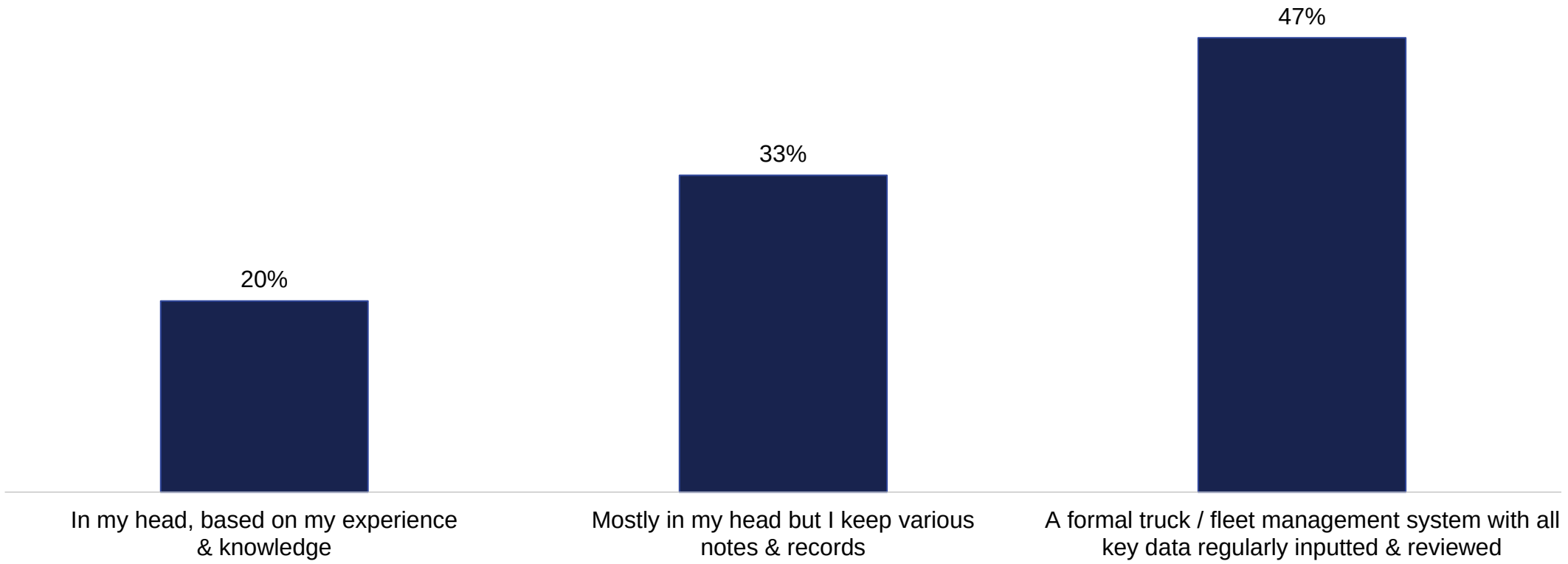
Q30: *How does the day-to-day maintenance of your business' trucks get done?* / ***Q10:*** *Approximately how many of each type of truck does your business own?* / ***Q11:*** *Thinking about the powered vehicles that you mentioned, how many do you have in each of the following RUC classes?*

Base: *Total sample (n=161), operators who know their fleet's RUC classes (n=146), each group (see chart for base sizes); fleet-size data based on operators who know their fleet size (n=154).* ****Caution: Small number of respondents in this group.***

See Appendix 2 for breakdown of maintenance practices by RUC class and freight type.

Fleet management – Storage of information

80% of respondents kept fleet management notes to some degree, with the balance claiming to keep all their fleet management information ‘in their head’.

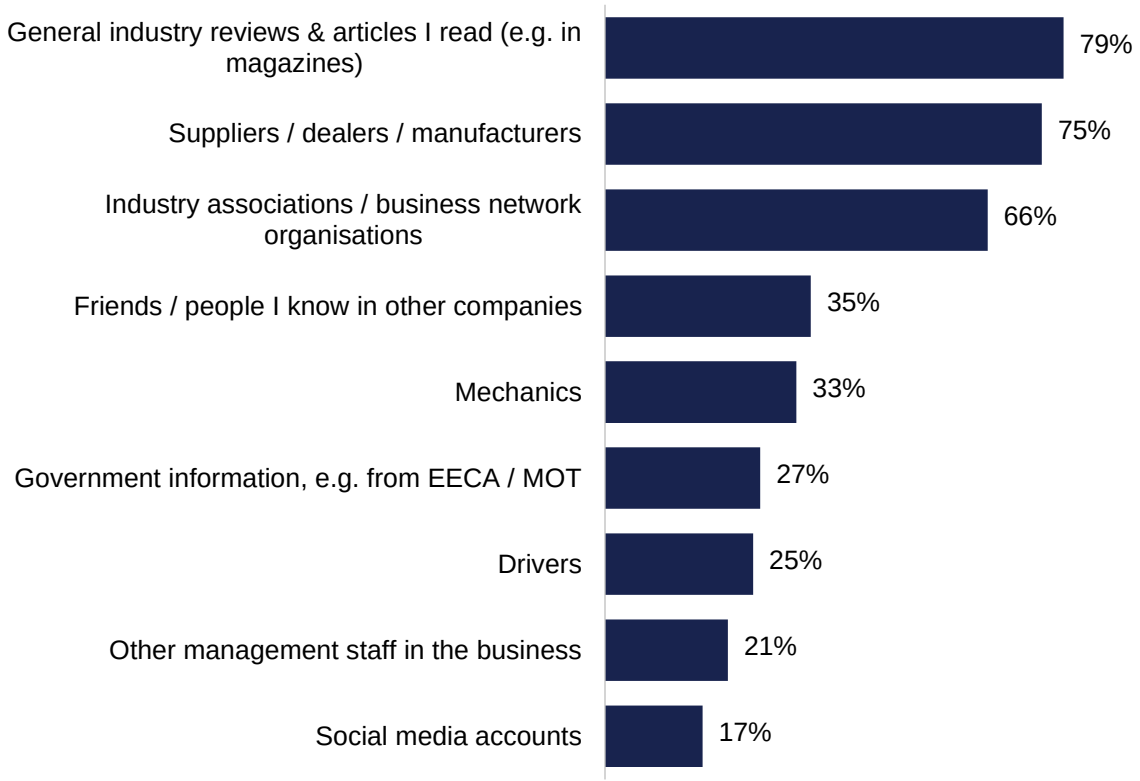


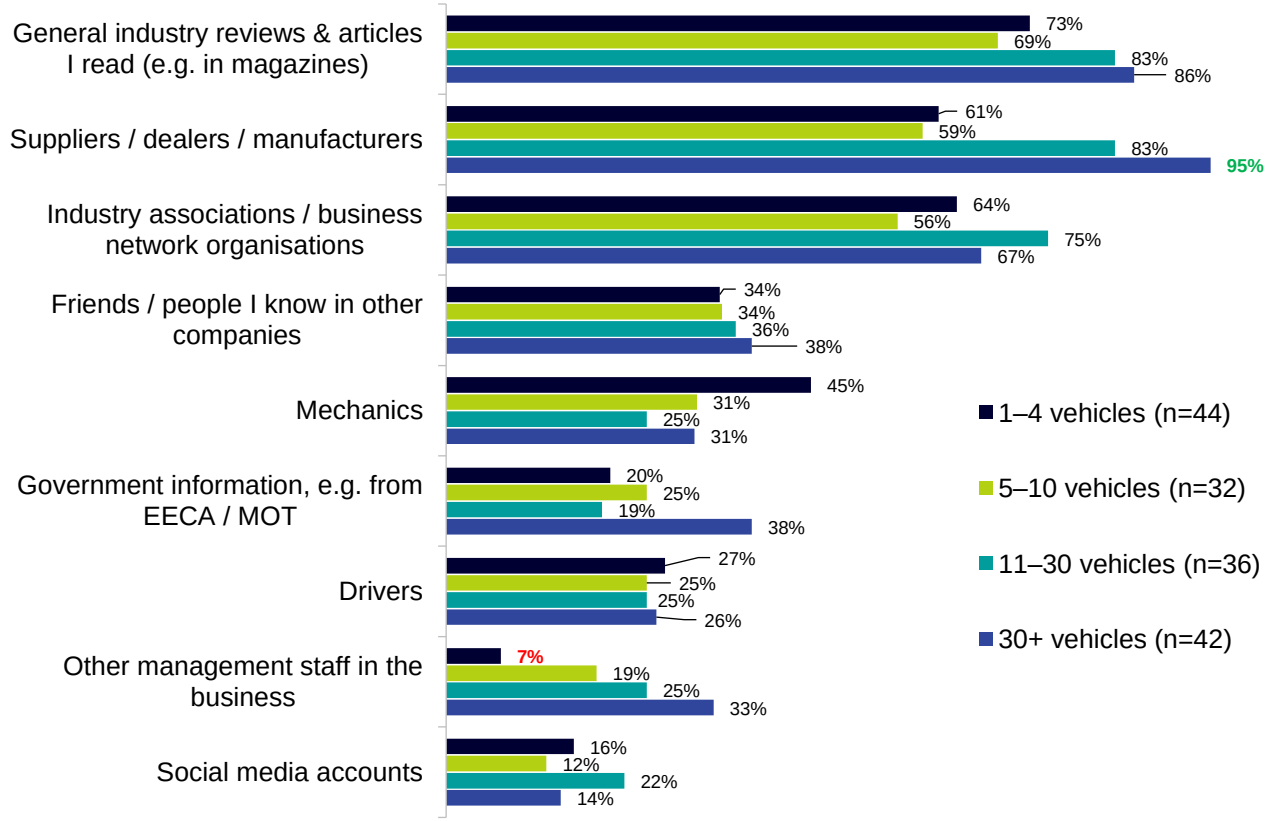
Q44: *Where is most of your truck management information kept?*
Base: *Total sample (n=161)*

See Appendix 2 for further breakdown of storage of information by openness to new ideas.

Fleet management – Information sources

The main sources of information about new technological innovations are *general industry media*, *suppliers / manufacturers* and *business groups*. Those with larger fleets (30+ vehicles) are more likely to get information from *suppliers / manufacturers.* Of note is that 27% cited *government sources*.





Q36: *Which, if any of the following sources does your organisation use to keep up with technological innovations in vehicles?* / ***Q10:*** *Approximately how many of each type of truck does your business own?*

Base: *Total sample (n=161), each group (see chart legend for base sizes); fleet-size data based on operators who know their fleet size (n=154).* ***Green*** */* ***red*** *indicates significantly* ***higher*** */* ***lower*** *than the total*

LOW-EMISSION VEHICLE PERCEPTIONS

8

SECTION SUMMARY: LOW EMISSIONS VEHICLE PERCEPTIONS

This section explores usage and perceptions of low-emission heavy vehicles. It explores the barriers and challenges to using or considering, including amongst those currently using low-emission vehicles. It also looks at what government can do to help with uptake.

- ***Cost* and *insufficient information* are the key barriers to heavy-electric-vehicle adoption** – compounded by *uncertain resale value* and an expectation that *customers would not want to pay the extra cost* for such vehicles.
    - Many also cited the need for *more information* on usage, maintenance, longevity, and return on investment. Practical factors such as *charging* and *route suitability* were also key factors reducing the opportunities for usage.

- Of the 161 operators surveyed, 11 currently use electric or hydrogen vehicles. This sample size has limited use; however, the 11 respondents that use electric and hydrogen vehicles considered *total cost of ownership*, *lower fuel cost*, *owner and shareholder preferences*, as well as *EECA funding* in their decision to purchase a low-emission vehicle.

- When asked how government can best support uptake of low emissions vehicles, financial incentives (e.g. tax breaks) and roading infrastructure were the two most common responses.
    - Lowering the prices of low emission vehicles so they are similar to diesel trucks and providing subsidies to reduce ongoing operating costs (such as access to maintenance and meeting requirements for compliance), were seen to be the most useful from a list provided to respondents.

Please note our sample over-represents larger vehicles (particularly HPMV RUC types) and under-represents RUC type 2 vehicles relative to the fleet (please see Fleet profiles slide 22 and Appendix 3).

Qualitative observations of low-emission heavy-vehicle perceptions (1)

There is high awareness and interest in the concept, but it is felt to be currently unsuitable.

- There is widespread awareness and interest in electric heavy vehicles, with most able to cite trials in New Zealand and overseas regarding new trucks and tech.
- Acceptance and usage of small electric ‘town’ vehicles are becoming more common, proving that these operators will use them if they suit (although problems remain with staff electric vehicles, e.g. reimbursing home charging).
- The challenges cited to overcome non-usage were many, including:
  - Unproven and fast-changing tech raises the risk of making the wrong decisions
  - Current tech is not felt to be fit for purpose
  - High capital expenditure is difficult to accept when higher costs cannot be passed on to customers
  - Lack of charging infrastructure makes operational viability difficult to prove
  - Slow charging has the potential to reduce efficiency and punctuality
  - Vehicle weight restrictions mean switching to heavier electric trucks will imply carrying less payload per trip, necessitating more trips and reduced efficiency
  - Fire / safety issues were a concern for some (especially in forestry)
  - Uncertain resale value
  - Reputational risk.

> *“Our trucking groups, manufacturers, Waka Kotahi… until they get proactive, get on board and make a decision. nothing will happen… Once the infrastructure is sorted and they make a decision we will all get on board.”*

Qualitative observations of low-emission heavy-vehicle perceptions (2)

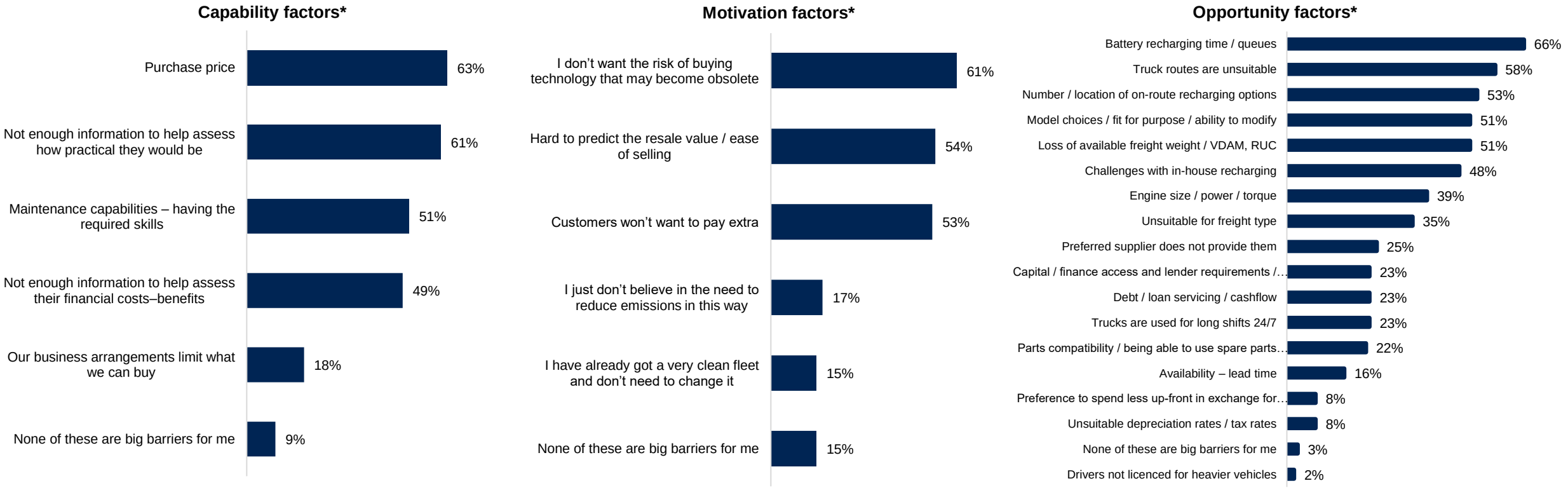
Given the practical and financial gaps, those opting for low-emission heavy vehicles are defined more by personality than by circumstance.

- To trial new technology is seen by some as requiring some financial and possibly reputational risk.
- The barriers stopping interest translating into action remain the practical and financial factors that are preventing such changes being judged as viable.

> *You gotta take a gamble to get a foot in the door."*

Barriers to consideration / usage of electric / hydrogen trucks

Cost and *insufficient information* are the key barriers to heavy electric vehicle adoption – compounded by *uncertain resale value* and an expectation that *customers would not want to pay the extra cost* for such vehicles. Many also cited the need for more *information* on *usage*, *maintenance*, *longevity* and *cost–benefits (return on investment)*. **Practical** factors such as *charging* and *route suitability* were also key factors reducing the opportunities for usage.
Of the 34 possible barriers included in the questionnaire, Respondents selected 7.2 barriers each on average.

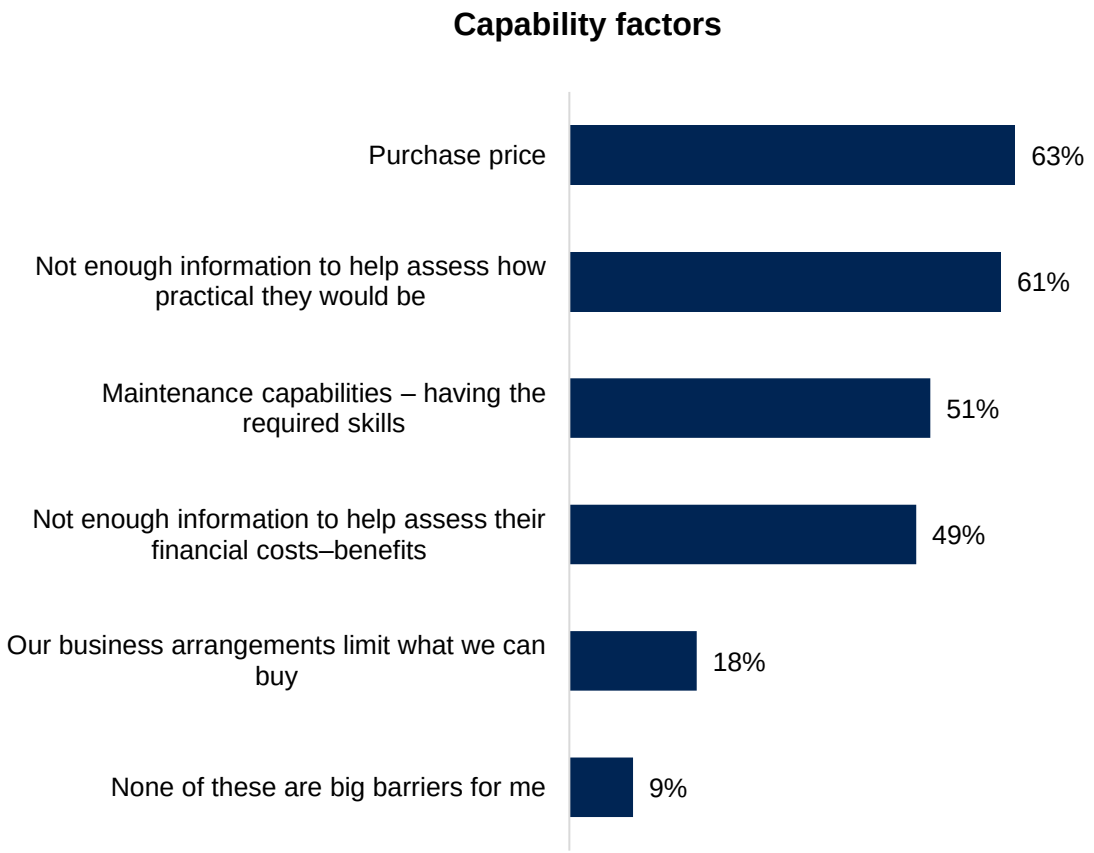


Q75: *Which, if any, of the following factors listed below are especially big barriers stopping your business from considering or using electric or hydrogen trucks in your heavy vehicle fleet? /* ***Q76:*** *And which other factors are barriers to considering or using electric or hydrogen trucks in your fleet? /* ***Q77:*** *And finally, which, if any, of these are barriers to considering or using electric or hydrogen trucks in your fleet?*

Base: *Low-emission vehicle non-users (n=142).* ****Note:*** *These factors relate to the COM-B Model. See Appendix 1 for details.*

Barriers to consideration – Capability factors

The nature of the ‘capability’ barriers varied little by business profile, indicating that the key barriers are mostly uniformly applicable across the industry.

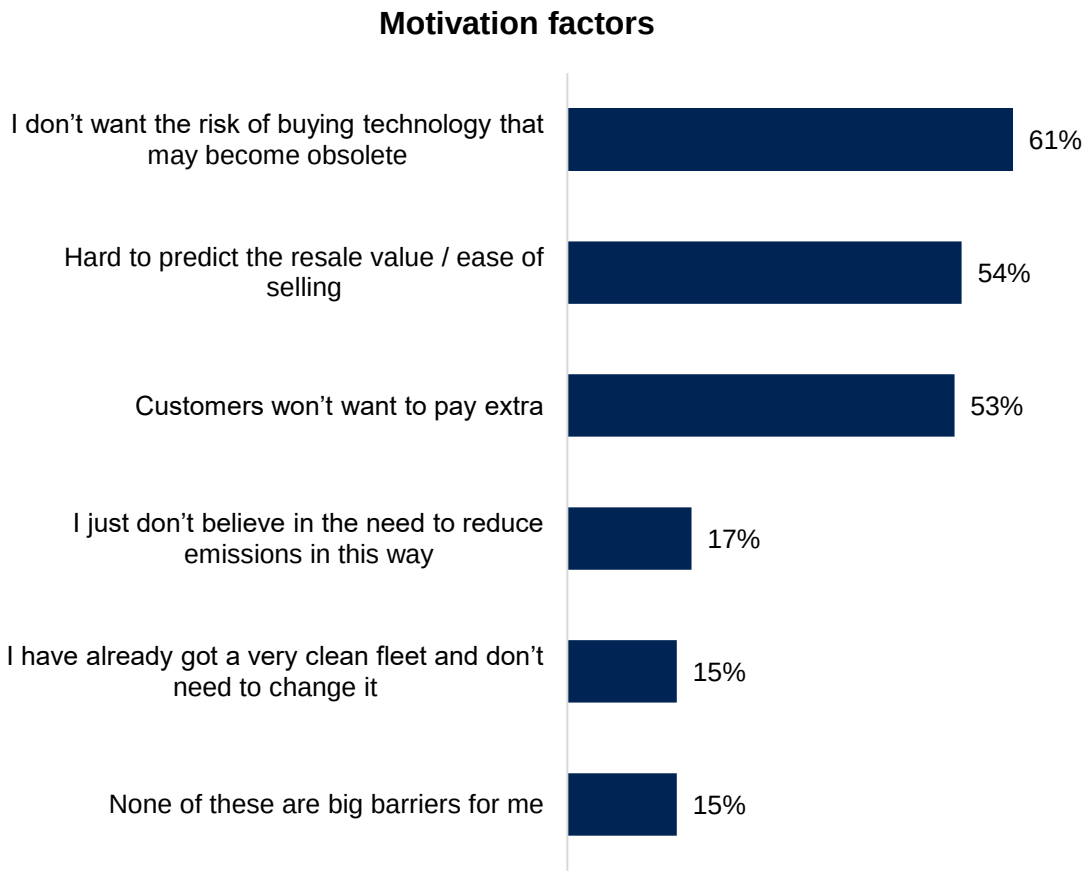


- Those carrying speciality freight were significantly less likely to cite a *lack of information about practicality* (**40%** c/f 61%).

Q75: *Which, if any, of the following factors listed below are especially big barriers stopping your business from considering or using electric or hydrogen trucks in your heavy vehicle fleet?*
Base: *Low-emission vehicle non-users (n=142).* ****Note:*** *These factors relate to the COM-B Model. See Appendix 1 for details.* ***Green*** */* ***red*** *indicates significantly* ***higher*** */* ***lower*** *than the total*

Barriers to consideration – Motivational factors

The nature of the ‘motivational’ barriers varied little by business profile, indicating that the key barriers are mostly uniformly applicable across the industry.



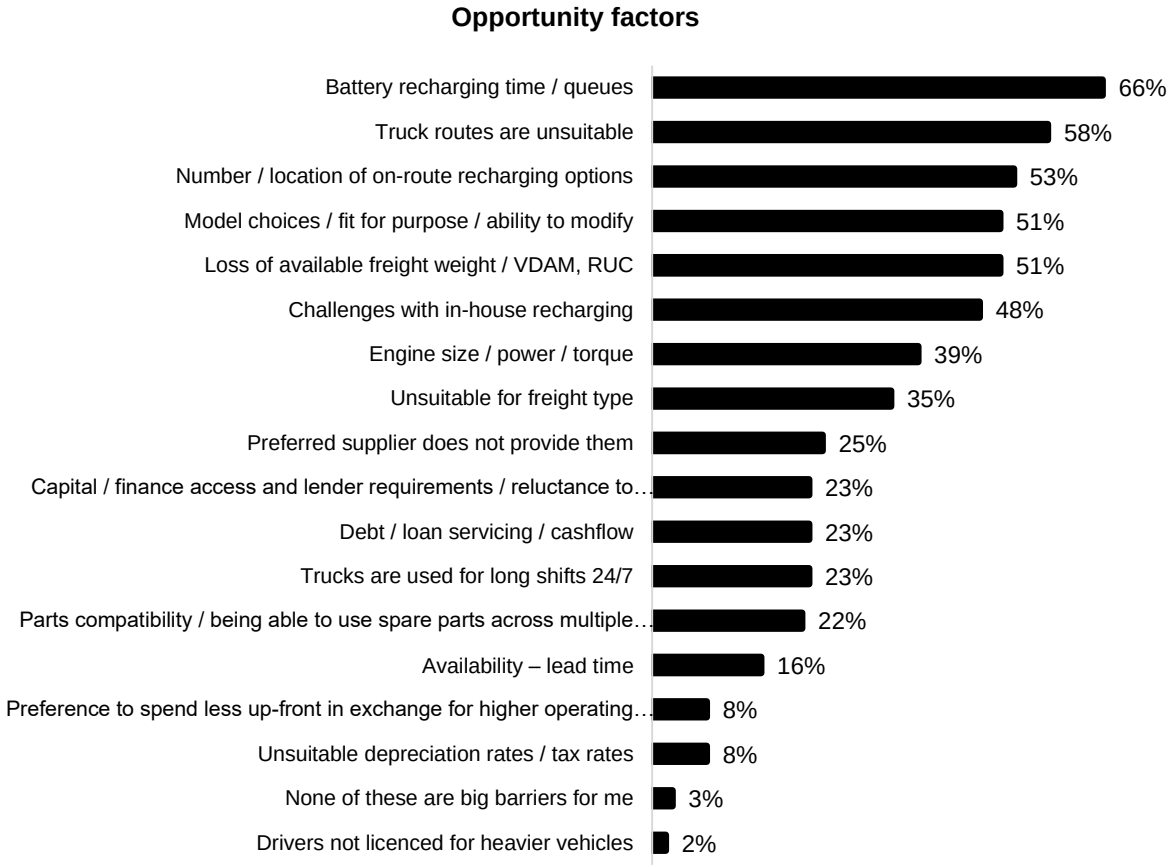
- Those carrying bulk liquids and bulk solid materials were significantly more likely to be demotivated by the *risk of buying technology that may become obsolete* (**89%** and **85%** respectively, c/f/ 61%).
- Those in food services were significantly less likely to cite *customer reticence to pay extra* (**0%** c/f/ 53%).

Q76: *And which other factors are barriers to considering or using electric or hydrogen trucks in your fleet?*

Base: *Low-emission vehicle non-users (n=142).* ****Note:*** *These factors relate to the COM-B Model. See Appendix 1 for details.* ***Green*** */* ***red*** *indicates significantly* ***higher*** */* ***lower*** *than the total*

Barriers to consideration – Opportunity factors

The nature of the ‘opportunity’ barriers varied by business profile.



Significant differences of note:

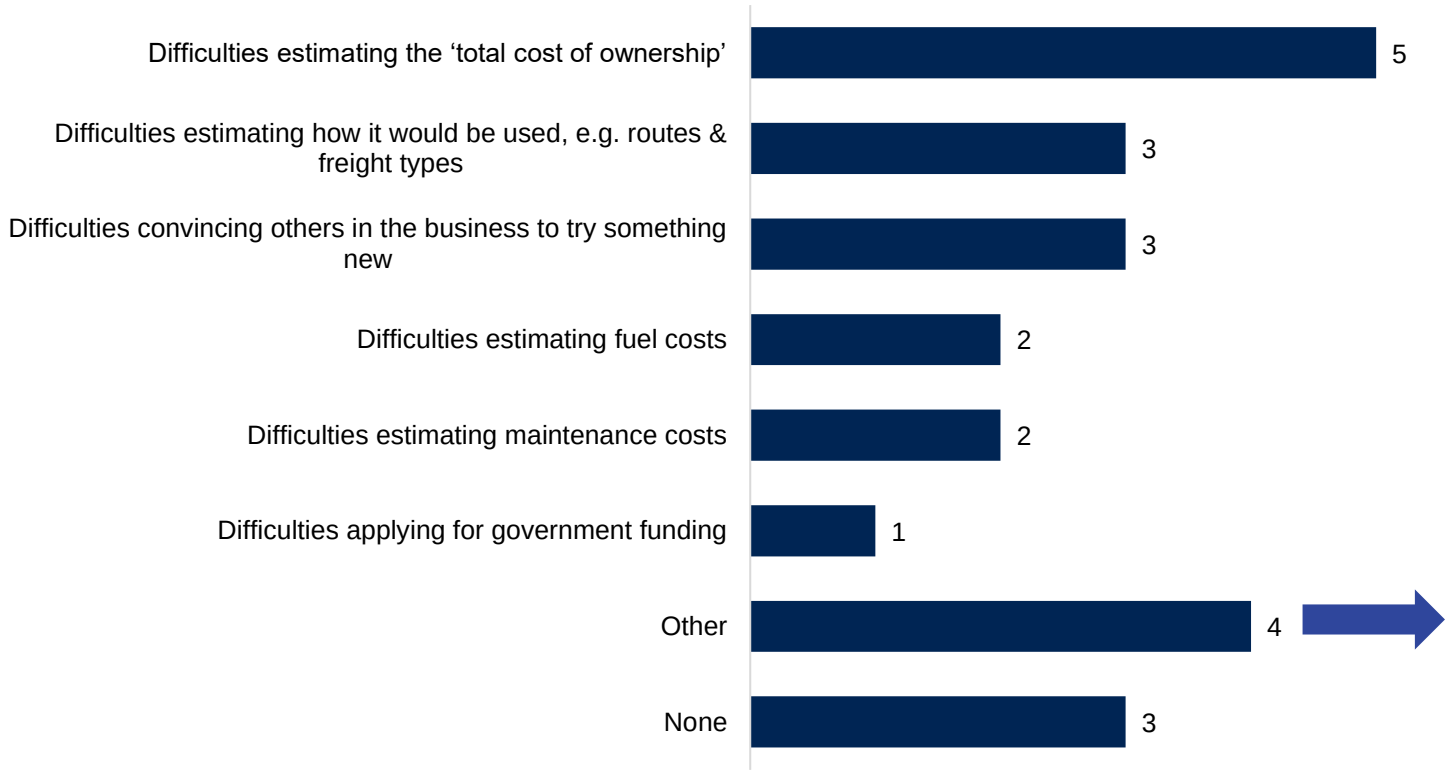
- Those in forestry were more likely to cite *insufficient engine performance* (**74%** c/f 39%) and *unsuitable freight types* (**61%** c/f 35%).
- Those carrying livestock were more likely to cite unsuitable routes (**88%** c/f 58%) and *unsuitable freight types* (**88%** c/f 35%).
- Those carrying speciality freight were less likely to cite *unsuitable freight types* (**17%** c/f 35%).
- Those carrying bulk solid materials were less likely to cite their *trucks being used for long shifts* (**8%** c/f 23%).
- Those with large fleets (30+) were more likely to cite a *lack of suitable model / truck choices* (**77%** c/f 51%).
- Businesses that were part of larger business were more likely to cite *insufficient on-road recharging options* (**88%** c/f 53%).

Q77: *And finally, which, if any, of these are barriers to considering or using electric or hydrogen trucks in your fleet?*

Base: *Low-emission vehicle non-users (n=142).* ****Note:*** *These factors relate to the COM-B Model. See Appendix 1 for details.* ***Green*** */* ***red*** *indicates significantly* ***higher*** */* ***lower*** *than the total*

Low-emission vehicle users' views: challenges in getting electric / hydrogen trucks

The sample included 11 operators who had bought / leased an electric / hydrogen truck and so their opinions cannot be said to be truly representative of all electric / hydrogen truck operators. The main challenges of the acquisition process cited by these respondents lay in *estimating the total cost of ownership* (to assess financial viability), *how the trucks would be used* and *convincing others in the business to agree*.



Numbers shown are the actual numbers out of the 11 low-emission truck owners in the sample.

> *"Lack of options and huge cost and lack of range."*

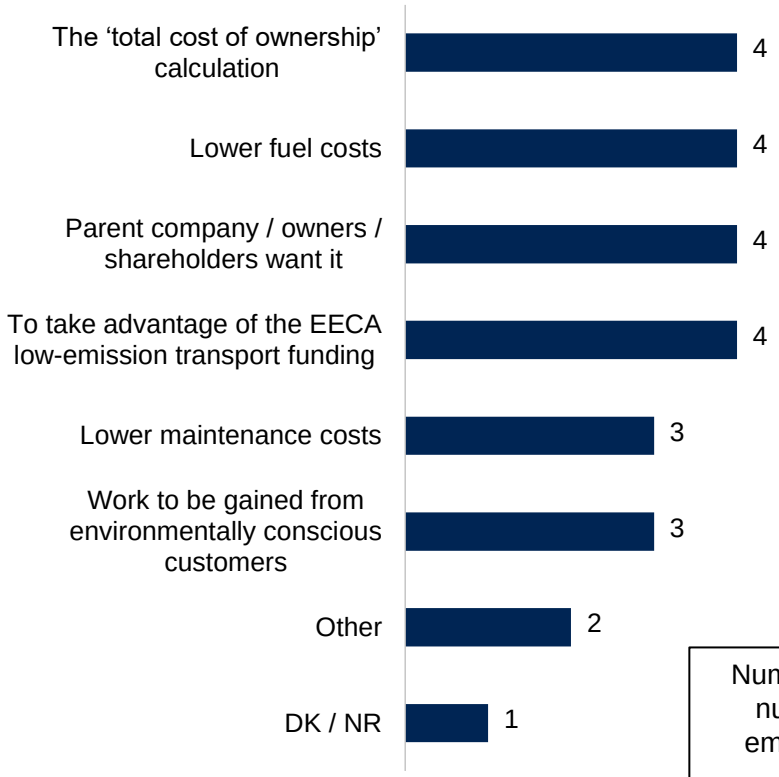
> *"Cost of setting up on-site charging stations."*

Q66: *Were there any frustrations or notable challenges when judging whether to buy or lease your company's electric or hydrogen trucks?*
Base: *Low-emission vehicle usrs (n=11*).* ****Caution: Small number of respondents in this group.***

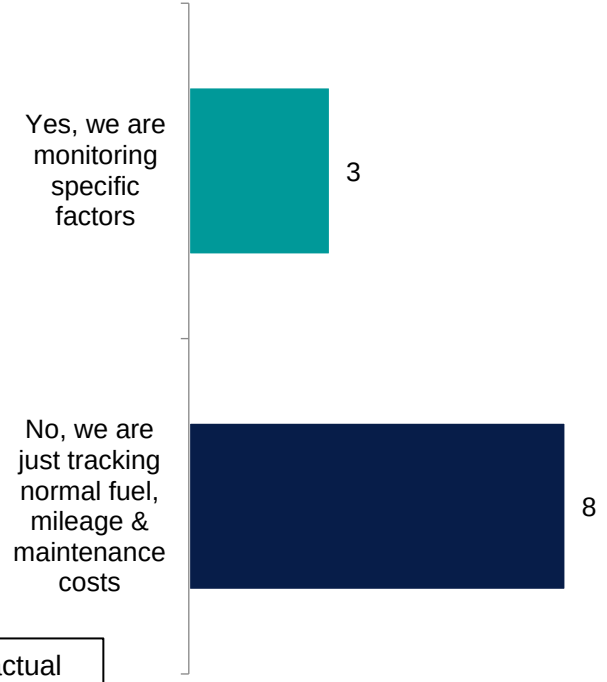
Low-emission vehicle users' views: consideration factors

Low-emission vehicles were considered largely in relation to the total cost of ownership calculations (including lower fuel and maintenance costs). Some mentioned external pressures to change and the availability of EECA funding.

Consideration factors in low-emission vehicle adoption



Performance monitoring



Numbers shown are the actual numbers out of the 11 low-emission truck owners in the sample.

Factors used for emission monitoring

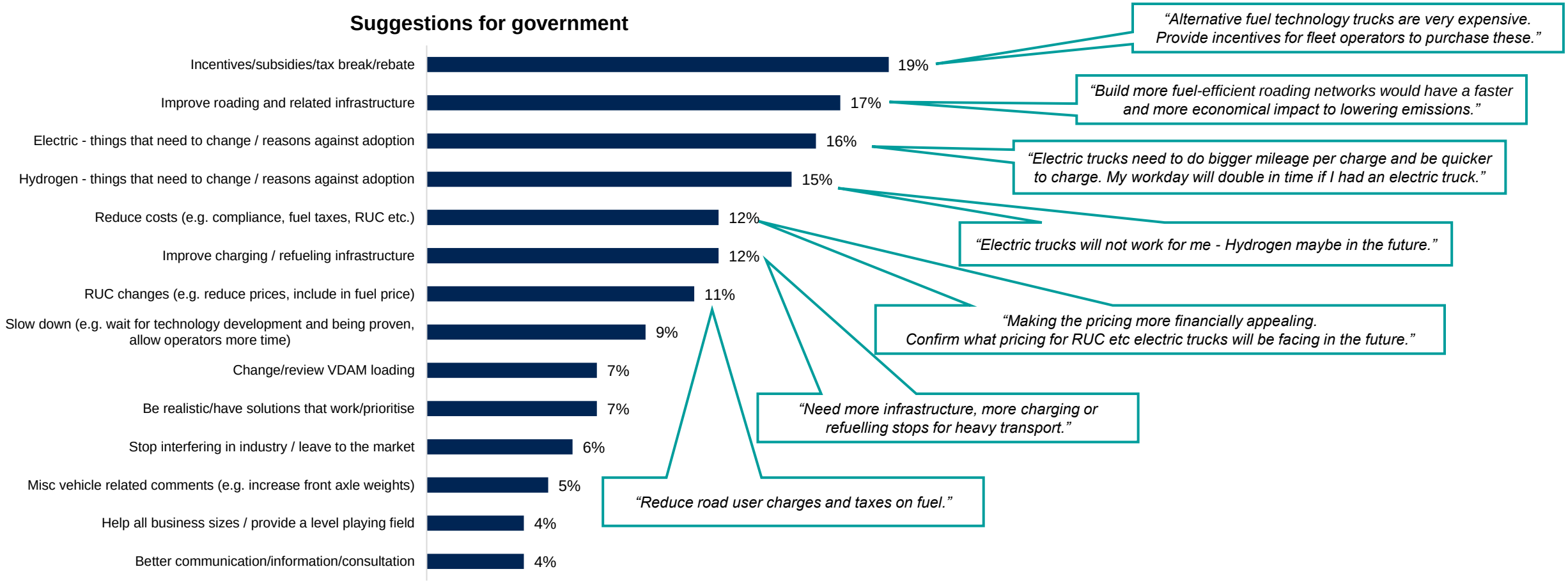
> *"Range, battery, deregulation, charging times and cost and availability, TCO."*

> *"Uptime, utilisation."*

Q65: *What were the main factors that were considered when judging whether to get (buy or lease) your company's electric or hydrogen trucks?* / ***Q67:*** *Beyond normal running costs, are you monitoring the performance of your electric, hydrogen or hybrid truck(s) in any special ways to see how well they are performing?* / ***Q68:*** *What other special factors are you monitoring? What are the key things you're looking for to assess the performance of the vehicle(s)?*
Base: *Low-emission vehicle owners (n=11*), low-emission vehicle owners who are monitoring specific factors (n=3*).* ****Caution: Small number of respondents in this group.***

How government could help freight businesses use more electric / hydrogen trucks

Reducing prices was the main suggestion given, but many other comments referred to *vehicle technology*, *supporting infrastructure and regulations*.



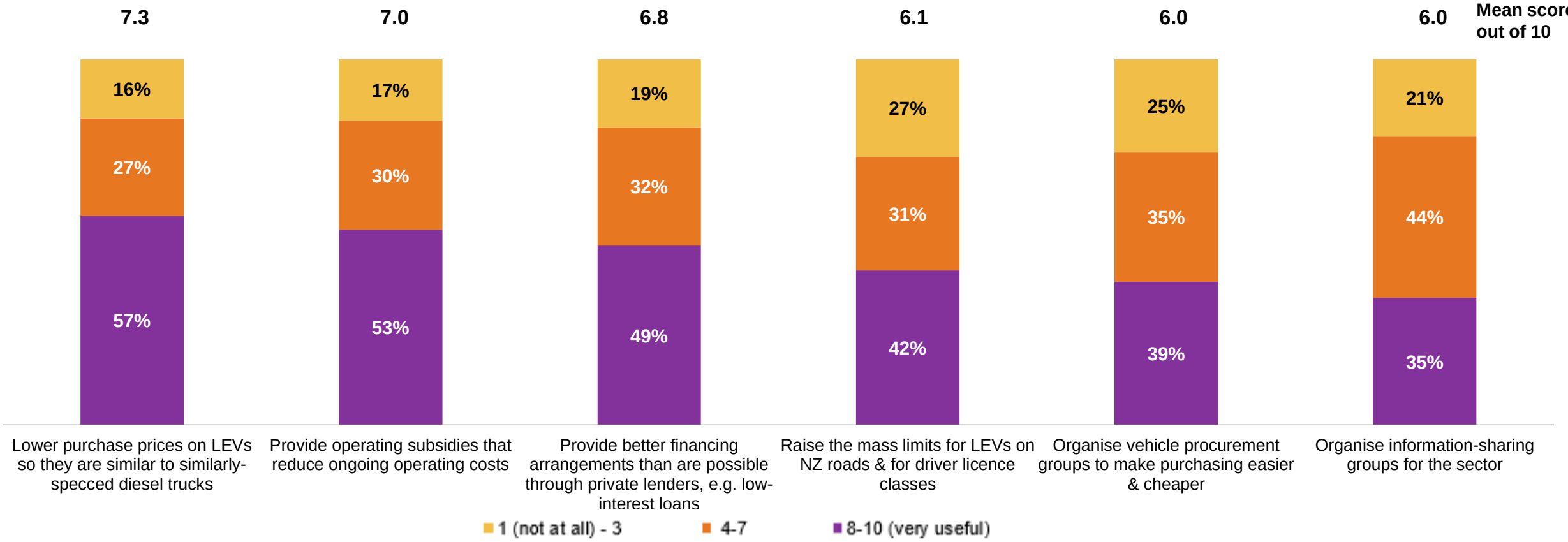
Q80: *There are always things that governments can do to help industries adapt to changing times. To help heavy freight businesses overcome the barriers you have just indicated, what do you suggest the government does? (OPEN-TEXT RESPONSE) – Only responses over 2% have been shown*

Base: *Total sample (n=161)*

The dialogue boxes show an example of verbatim comments only.

Possible government actions to help overcome barriers to adopting more low-emission vehicles

More than half of respondents consider *lowering purchase prices* and *providing operating subsidies* as very useful scoring (8-10 out of 10). While 42% of respondents consider *raising the mass limits for EVs* as very useful, it is also the action with the highest rating of between 1 (not at all useful) and 3 out of 10.



Q81: *Some possible things the government could do to help heavy freight businesses overcome these barriers are listed below. Please indicate how useful you think each of these could be for a business like yours wanting to use more electric, hydrogen or hybrid trucks.*

Base: *Total sample (n=161)*

EMISSIONS REDUCTION VIEWS AND BEHAVIOURS

9

SECTION SUMMARY: EMISSIONS REDUCTION VIEWS AND BEHAVIOURS

This section explores respondents' awareness of New Zealand's emission reduction commitments. It looks at attitudes towards emissions reduction, what, if anything, they have already done to reduce fuel efficiency and the reasons for doing so.

- The majority of respondents had heard of at least one of New Zealand's emission reduction commitments, with the Paris Agreement being the most common, at nearly three-quarters of respondents (72%).
- Some 89% of surveyed operators have already started emissions reduction efforts or are open to doing so, and within this, 42% have taken tangible actions so far, primarily by acquiring newer / cleaner diesel engines[1].
- Among those who have taken action to reduce emissions, the most common (93%) was using newer trucks with cleaner diesel engines. This was followed by using telematics data to improve driver behaviour (56%), reviewing routes (38%) and modifying vehicles or changing truck types to allow for more freight over fewer trips (35%).
- The most common reason for making emissions reductions is to be environmentally better and to reduce fuel costs. Just over half (56%) were driven by their customers' needs or being part of their brand.
- **One third of those surveyed were aware of Aotearoa New Zealand's First Emissions Reduction Plan** (that aims to reduce emissions from freight transport by 35% by 2035 compared to 2019 levels), although awareness was higher (48%) amongst those with the larger fleets.
- **Most of the qualitative respondents agreed that carbon emissions do need to be reduced** (although some questioned the impact that NZ businesses could achieve).

[1] We note that a cleaner diesel engine can refer to an engine that produces lower harmful emissions such as nitrous oxides and particulate matter. This can, but does not always, mean that the engine produces fewer carbon emissions. In addition, industry bodies note that there is some lack of understanding on the difference between carbon and harmful emissions among vehicle operators. However, newer engines are generally more efficient and thus produce fewer carbon emissions.

Please note our sample over-represents larger vehicles (particularly HPMV RUC types) and under-represents RUC type 2 vehicles relative to the fleet (please see Fleet profiles slide 22 and Appendix 4).

Qualitative observations regarding decarbonisation (1)

Despite questions about the impact of NZ actions, nearly all are behind the idea in principle.

- The need for emissions reduction was largely agreed upon and approved by those we interviewed.
- However, some said that the options for emissions reduction are not currently practically or financially viable, and so some operators resented the implication that they are being slow to act – they felt that they will act when it 'makes sense', but at present it doesn't.
- Some also noted that every new truck purchase improves the cleanliness of their fleet when it replaces an older truck anyway, so they are progressively cleaning their fleet with every purchase.
- Few reported instances of customers requesting or asking about emission levels. Public sector clients were said by some to be more likely to ask for this.
- There was agreement by many respondents about the need for decarbonisation, but they felt there were no viable alternatives at present.

> *"Having one electric vehicle in the fleet would keep the wolf from the door, but they are too expensive."*

> *"I haven't looked into hydrogen, but there's just not the infrastructure behind electric at the moment. I think it has to be filling a gap."*

Qualitative observations regarding decarbonisation (2)

Fleet managers cannot rely as much on their past experience when considering new technologies.

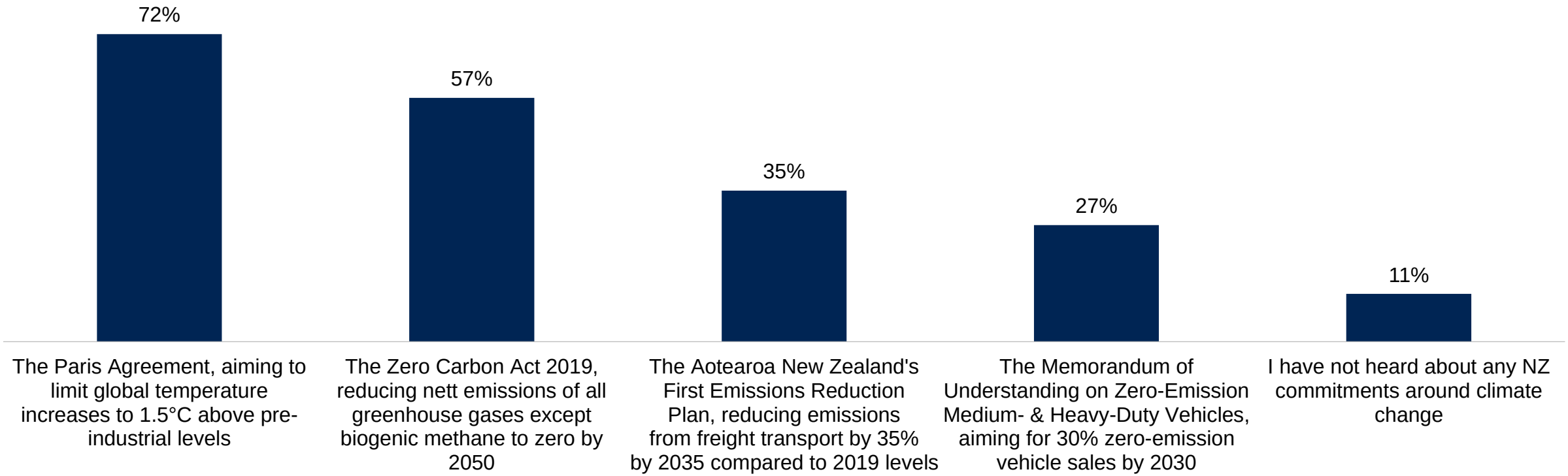
- Depreciation rates were thought by some to be too low for low-emission vehicles.
- Because much of the purchase process is based on past experience, gut knowledge, and proven metrics, considering a different fuel type put some of the respondents outside their comfort zone Some raised issues such as operational disruptions and a heightened risk to their business and personal reputation.
    - For those who had looked into such a change, the level of detail required to prove the case was said to be beyond, and more difficult than, what is normally done.
- Known-unknowns like possible RUC changes also raised the fear of changing operational or financial parameters, which increased the likelihood of any financial modelling becoming outdated.
- The fast-changing nature of the technology also stands to make new purchases obsolete, further undermining their attraction.

> *"To justify spending 150 grand to convert to a hydrogen truck… that's a long payback period."*

> *"People love the smell of diesel; their whole life revolves around things that have combustion engines."*

Emissions reduction – Awareness of global emissions agreements

Almost three quarters had heard of the Paris Agreement and 35% of respondents had heard of New Zealand's own Emissions Reduction Plan (published in 2022).



Q54: *Before today, which, if any of the following commitments had you heard of?*

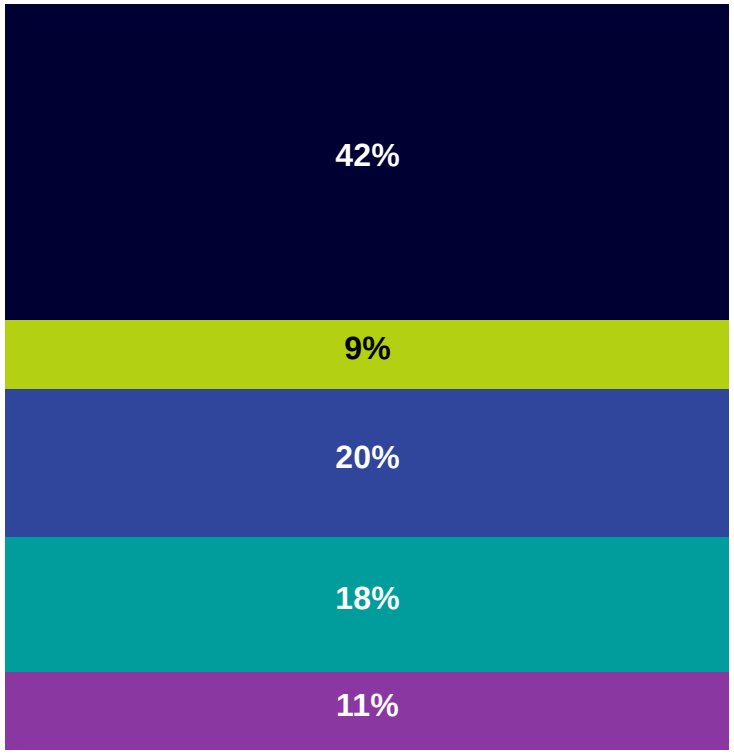
Base: *Total sample (n=161)*

See Appendix 2 for further breakdown of awareness by fleet size.

Emissions reduction – Attitudes and behaviours

89% of surveyed operators have either started reducing emissions or are open to doing so, 11% are disinterested.
42% of surveyed operators have already taken steps to reduce their carbon emissions.
29% of surveyed operators have not actively tried to reduce emissions but can be considered ‘open’ to taking action.

> *About 8 years ago I went through the process of seeing what my carbon footprint was, and I presented it to Pole and the Warehouse. It was a waste of money, because none of them were really into it.”*

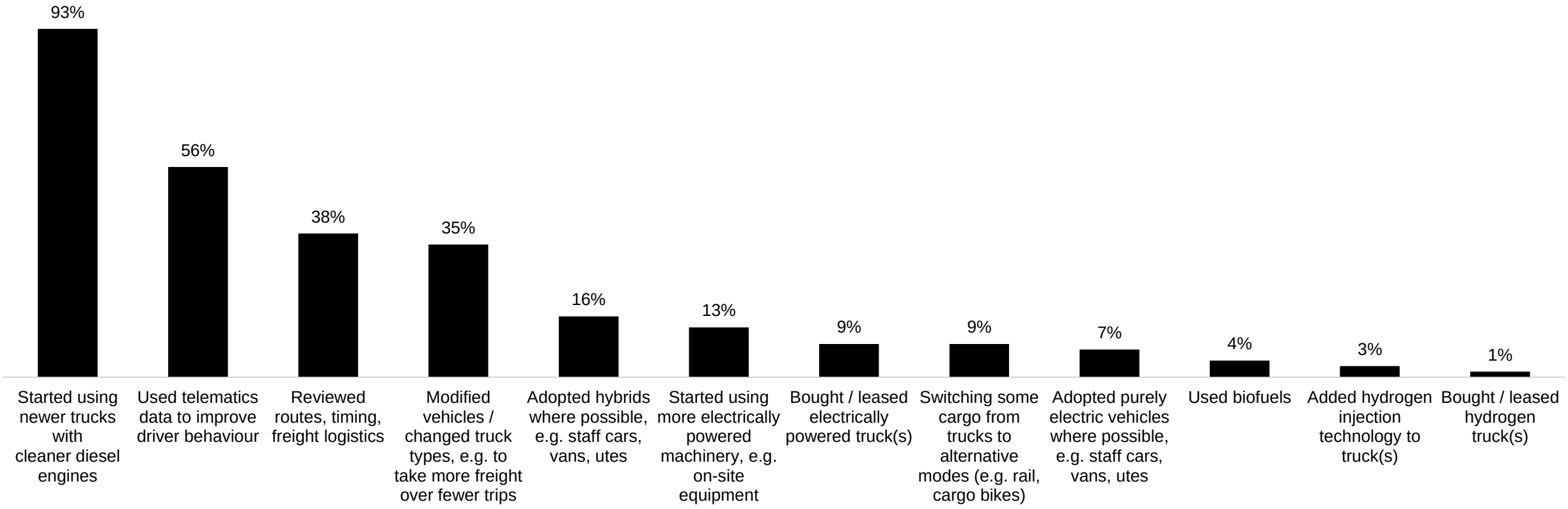


Q56: *Where does the reduction of your vehicles fleet’s carbon emissions fit into your business’ medium-to-long-term plan?*
Base: *Total sample (n=161)*

See Appendix 2 for further breakdown of carbon emissions behaviours by fleet size, freight type, RUC class and personality

Emissions reduction – Actions some have taken to reduce fleet emissions

Most (93%) operators who felt they had already taken steps to reduce emissions cited *adopting cleaner engines. Hybrids* were adopted by 16%, *electric trucks* by 9% and *smaller electric vehicles* by 7%. Some 3% have *added hydrogen technology* to their trucks.

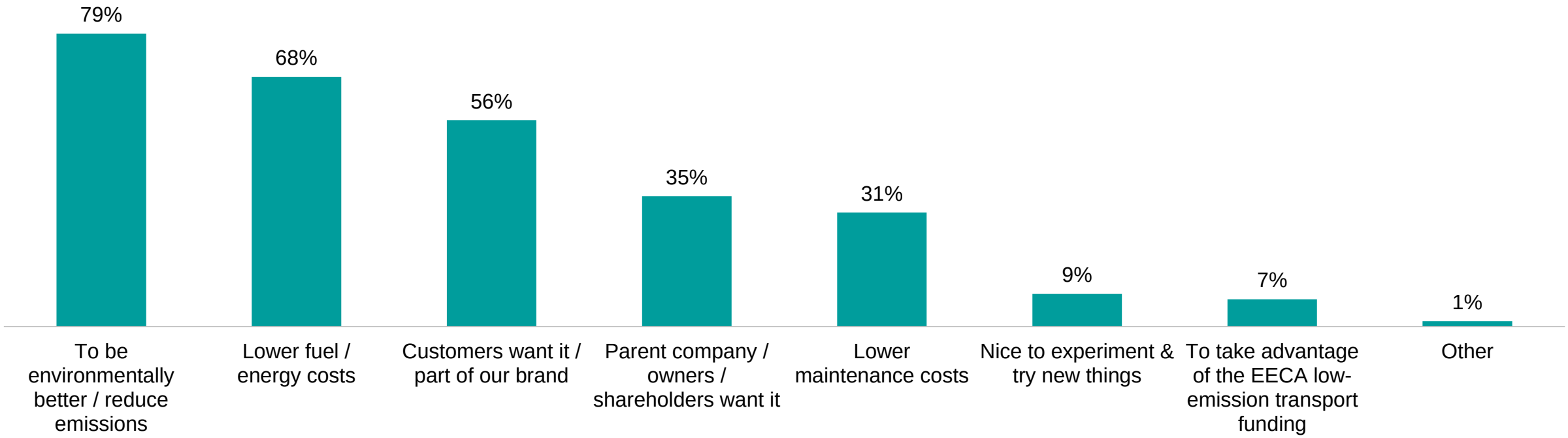


Q57: *What has your business already done to reduce emissions of its fleet?*

Base: *Operators already taking steps to reduce emissions (n=68)*

Emissions reduction – Reasons some made reductions

Environmental benefits were the most oft-cited reason for reducing emissions, followed closely by *fuel savings*. *Customer / stakeholder demand* was also cited by many; 7% mentioned *EECA funding*.



Q58: *What are the main reasons why your business has been trying to reduce the emissions of its fleet?*

Base: *Operators already taking steps to reduce emissions (n=68)*

EMISSIONS ASSESSMENTS AND ISO CERTIFICATIONS

10

SECTION SUMMARY: EMISSIONS ASSESSMENTS AND ISO CERTIFICATIONS

This section explores whether respondents undertake regular assessments of their fleets' emissions and whether they have achieved ISO certification for lower-emissions management.

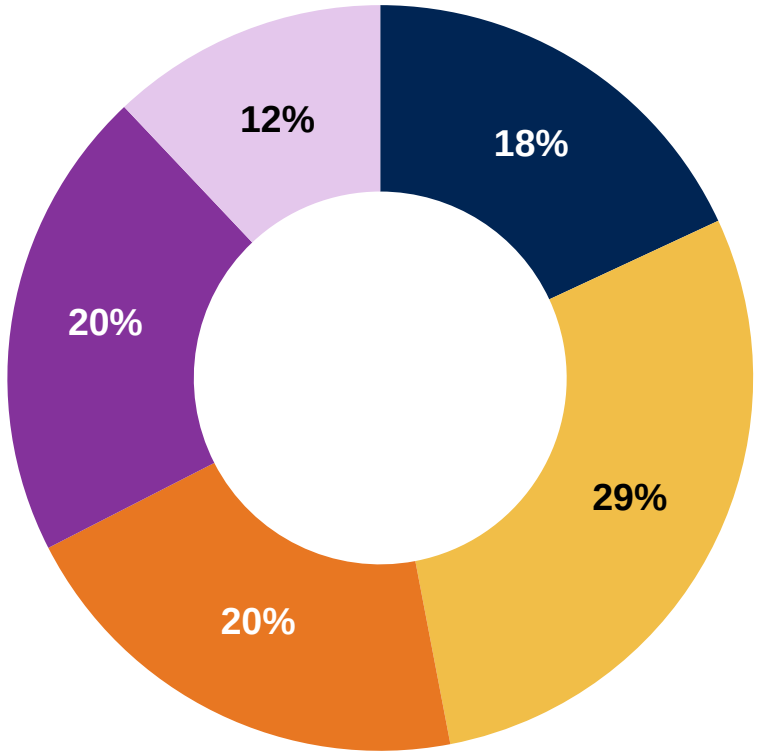
- Of those operators stating they were committed to reducing emissions, 47% conduct emissions assessments of their fleets, including 18% on a regular basis.

- Almost half (45%) of the operators who said they were committed to reducing emissions (n=83) had never heard of **ISO (International Organization for Standardization) emissions certification**, while 29% were aware but hadn't considered obtaining it. Awareness rises with fleet size but remains below 50% for all categories except the largest operators. Similarly, fewer small-fleet operators have contemplated certification.
  - This left 2% who have earned **certification**, while another 2% earned it in the past but it has lapsed.
  - Some 22% have contemplated seeking certification but not acted yet.

Please note our sample over-represents larger vehicles (particularly HPMV RUC types) and under-represents RUC type 2 vehicles relative to the fleet (please see Fleet profiles slide 22 and Appendix 4).

Emissions assessments – Attitudes and behaviours

Of those stating that they were already committed to reducing emissions, 47% had conducted fleet emissions assessments, including 18% doing it regularly – 12% were unaware of them altogether.



Conduct regular emissions assessments

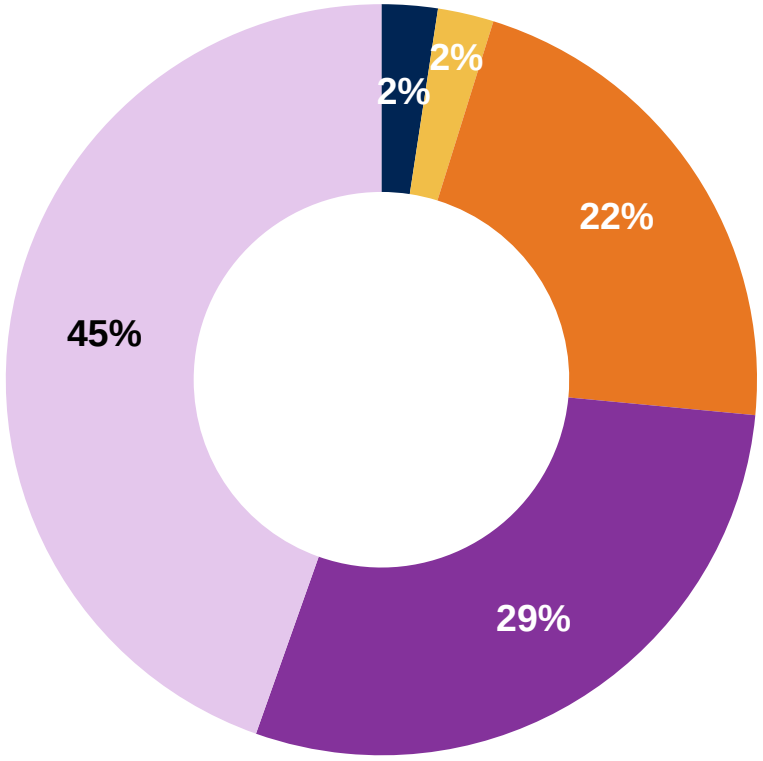
- Yes, regularly
- Yes, but only occasionally
- No, but we have considered it
- No, it has not been considered, but I am aware of them
- No, I have never heard of this before

Q59: *Does your business conduct regular emissions assessments of your fleet?*
Base: *Operators committed to reducing emissions (n=83)*

See Appendix 2 for further breakdown of emissions assessments by fleet size, freight type and RUC class

ISO certification – Attitudes and behaviours

Almost half of those committed to reducing emissions within our sample were unaware of ISO emissions certification. Only 2% of those committed to reducing emissions had actually achieved ISO certification.



Been ISO-certified for lower emissions management

- Yes & we are currently certified
- Yes, but are not currently certified
- No, but we have considered it
- No, it has not been considered, but I am aware of it
- No, I have never heard of this before

Q60: *Has your business ever achieved ISO certification for lower-emissions management?*
Base: *Operators committed to reducing emissions (n=83)*

See Appendix 2 for further breakdown of ISO certification awareness by fleet size, freight type and RUC

APPENDIX 1

Background to the COM-B Model

GAME CHANGERS

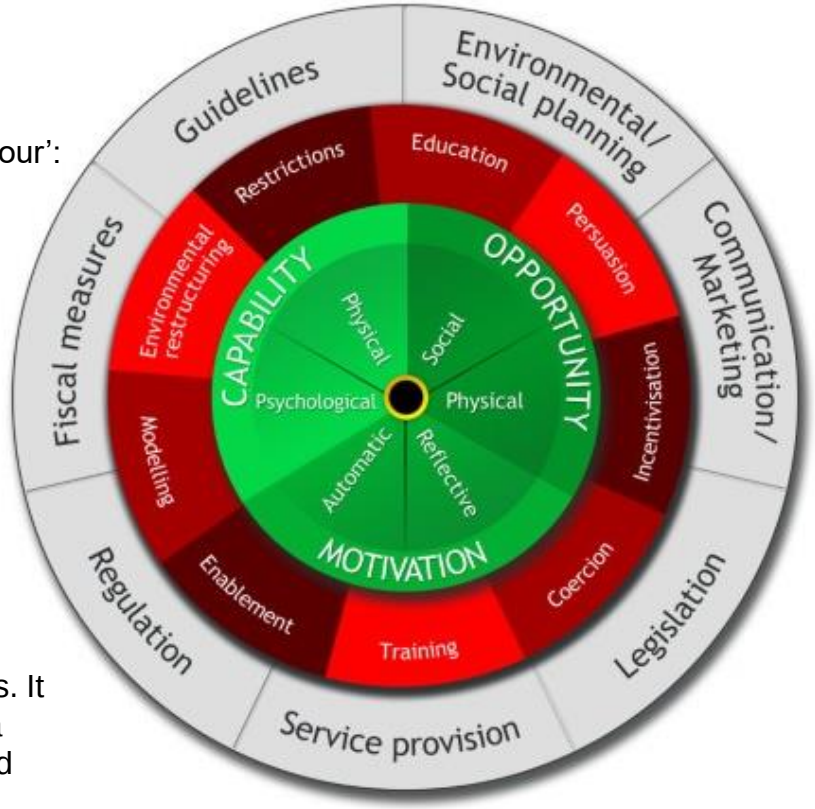
Applying the COM-B Model to enable greater uptake of low-emission heavy vehicles

Background to the model

The COM-B Model is a comprehensive framework used extensively within the field of behavioural science to understand and promote behavioural changes. The model is derived from the simple principle that changing behaviour requires an understanding of the elements that drive and shape it.

COM-B stands for ‘Capability’, ‘Opportunity’, and ‘Motivation’, which are believed to interact and influence ‘Behaviour’:

1. ‘Capability’ refers to an individual’s psychological and physical capacity to engage in the activity concerned. It includes having the necessary knowledge and skills.
2. ‘Opportunity’ is defined as all the factors that lie outside the individual that make the behaviour possible or prompt it. This could be the environment they are in or the cultural milieu that influences their actions.
3. ‘Motivation’ includes reflective processes such as making plans or conscious decisions, and automatic processes which include emotions and impulses that lead to certain actions.



The model elucidates that for a behaviour to occur, all three components need to be present and they influence each other. For instance, a person may have the capability and motivation to exercise (e.g. they know how to do it and want to stay healthy), but if they lack the opportunity (e.g. they don’t have access to a safe space for exercise), they may not engage in that behaviour.

The COM-B model is widely used in designing and implementing interventions to bring about behavioural changes. It helps with identifying which component(s) need to be targeted to effectively change a behaviour. For example, if a person is not engaging in a desired behaviour because of a lack of knowledge or skills, then the intervention would focus on enhancing their capability.

The COM-B model is not only a tool for understanding behaviour but also a comprehensive approach to induce positive change. Its wide applicability makes it a powerful tool in a variety of contexts, from public health to organisational management.

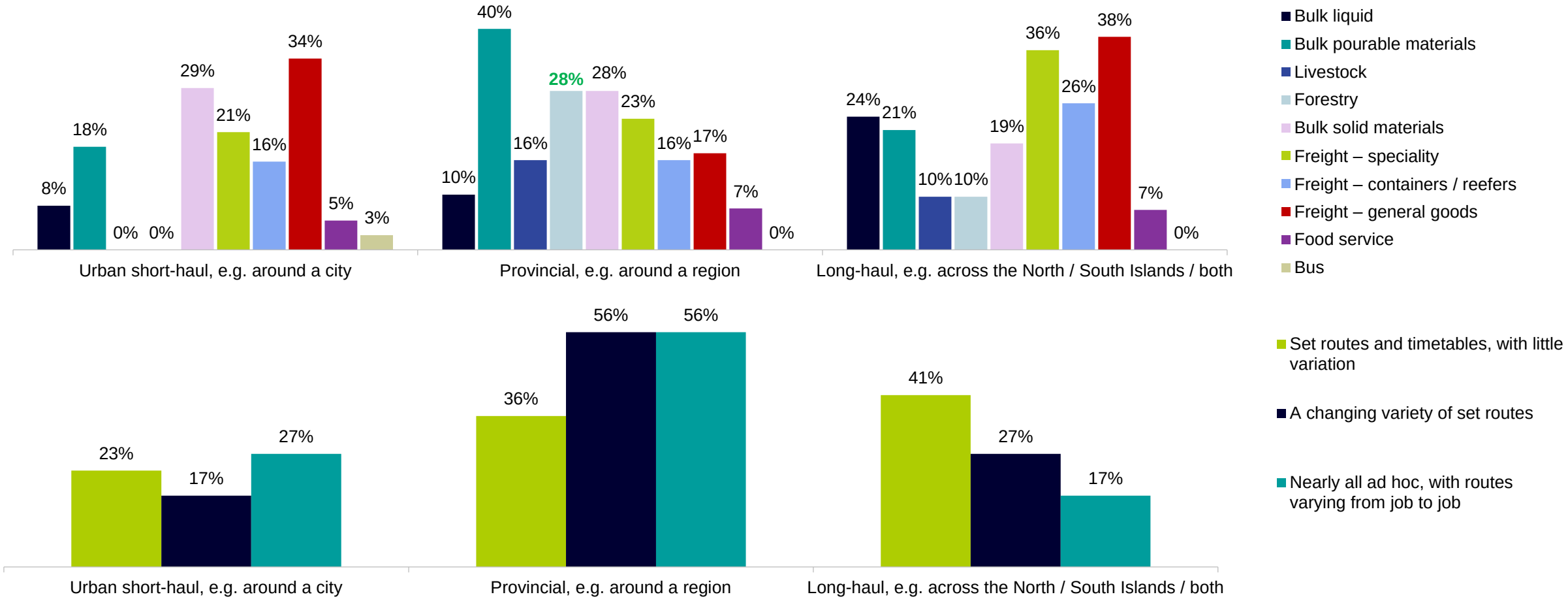
APPENDIX 2

Further breakdowns of results

GAME CHANGERS

Fleet profiles – Trip type by freight type

Trip profiles vary by freight type, e.g. forestry transporters are significantly more likely to be involved in provincial trips*.

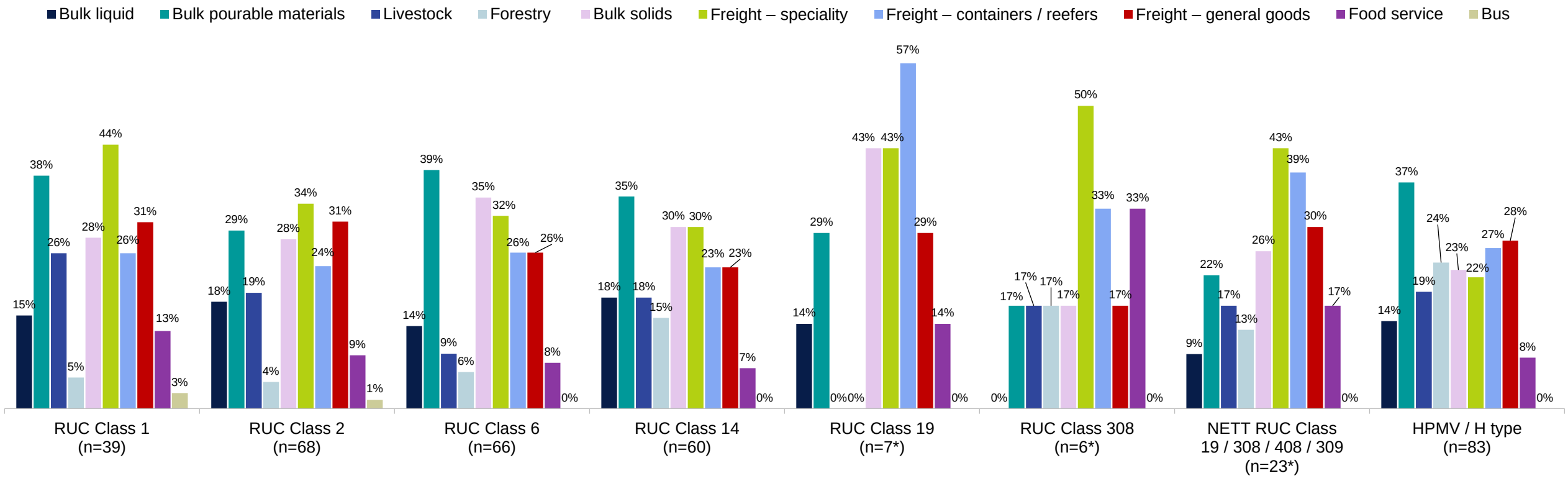


Q6: *Which of the following types of freight does your truck fleet usually carry?* / ***Q7:*** *What kind of trips represent the majority of your truck fleet's mileage?*

Base: *Total sample (n=161).* ***Green*** */* ***red*** *indicates significantly* ***higher*** */* ***lower*** *than the total.* ****Note:*** *Defined in the questionnaire as 'around a region'.*

Fleet profiles – RUC class by freight type

Freight type varies by RUC class, but it is important to note that RUC class does not seem to have a consistent relationship with freight types – no statistically significant differences across vehicle types.

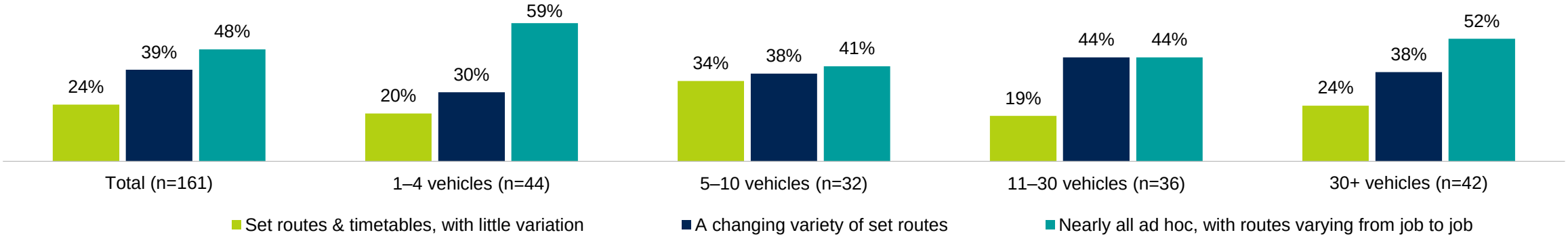


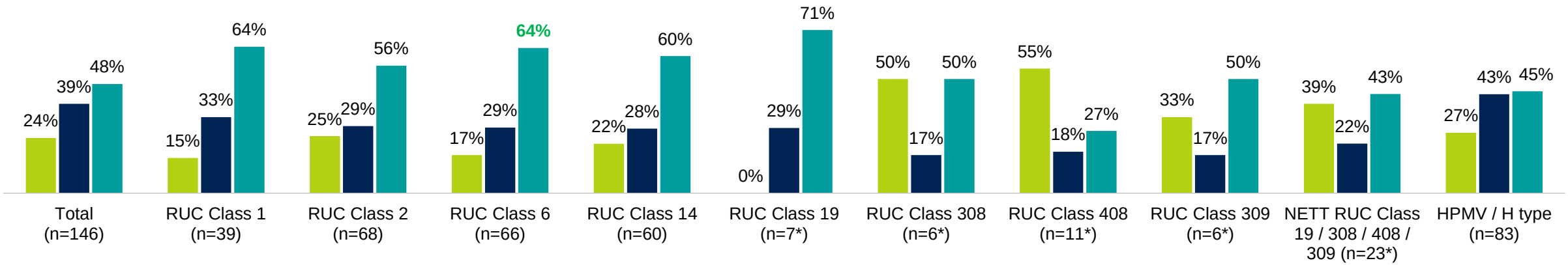
Q11: *Thinking about the powered vehicles that you mentioned, how many do you have in each of the following RUC classes? If you are not sure, please give your best estimate. /* ***Q6:*** *Which of the following types of freight does your truck fleet usually carry?*

Base: *Operators in each RUC class (see chart for base sizes).* ****Caution: Small number of respondents in this group.***

Fleet profiles – Route variability by fleet size and RUC class

Businesses of all sizes are more likely to run a mix of varied and ad hoc routes. Overall, nearly a quarter of respondents reported they mainly run set routes with little variation, compared to almost half who run nearly all ad hoc routes.



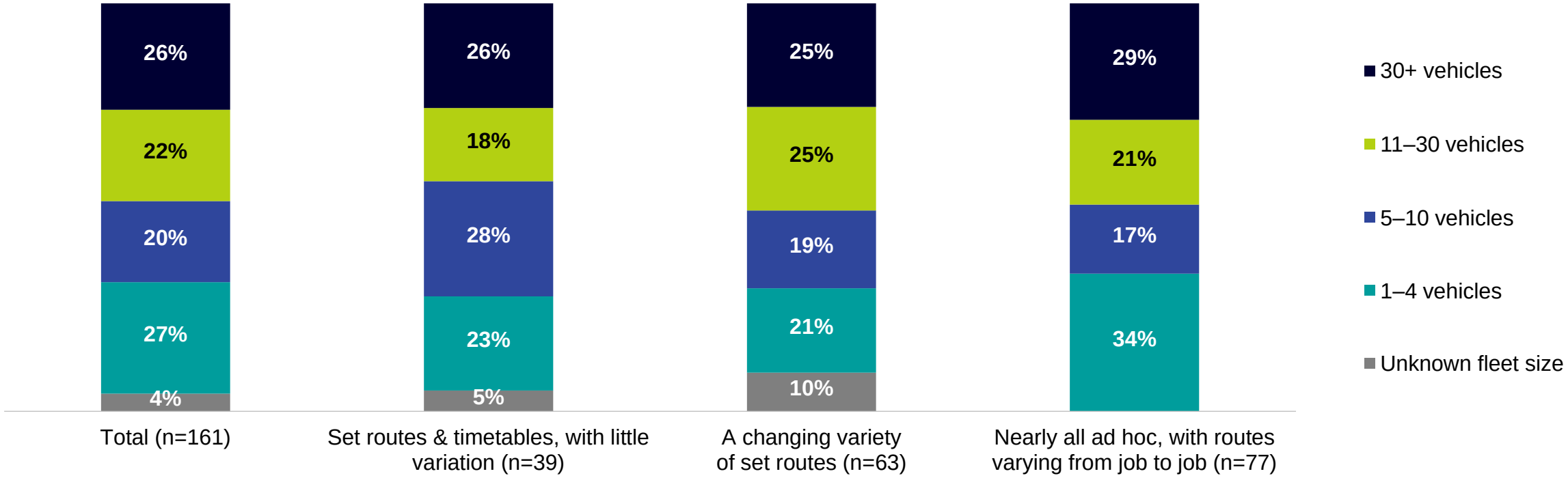


Q10: *Approximately how many of each type of truck does your business operate? If you are not sure, please give your best estimate. /* ***Q8:*** *Which of the following types of trips does your truck fleet usually do? /* ***Q11:*** *Thinking about the powered vehicles that you mentioned, how many do you have in each of the following RUC classes?*

Base: *Total sample (n=161), operators who know their fleet's RUC classes (n=146), each group (see chart for base sizes); fleet-size class data based on operators who know their fleet size (n=154).* ****Caution: Small number of respondents in this group.*** ***Green*** */* ***red*** *indicates significantly* ***higher*** */* ***lower*** *than the total*

Fleet profiles – Route variability by fleet size

There is no significant variation in the routes operated based on fleet size.

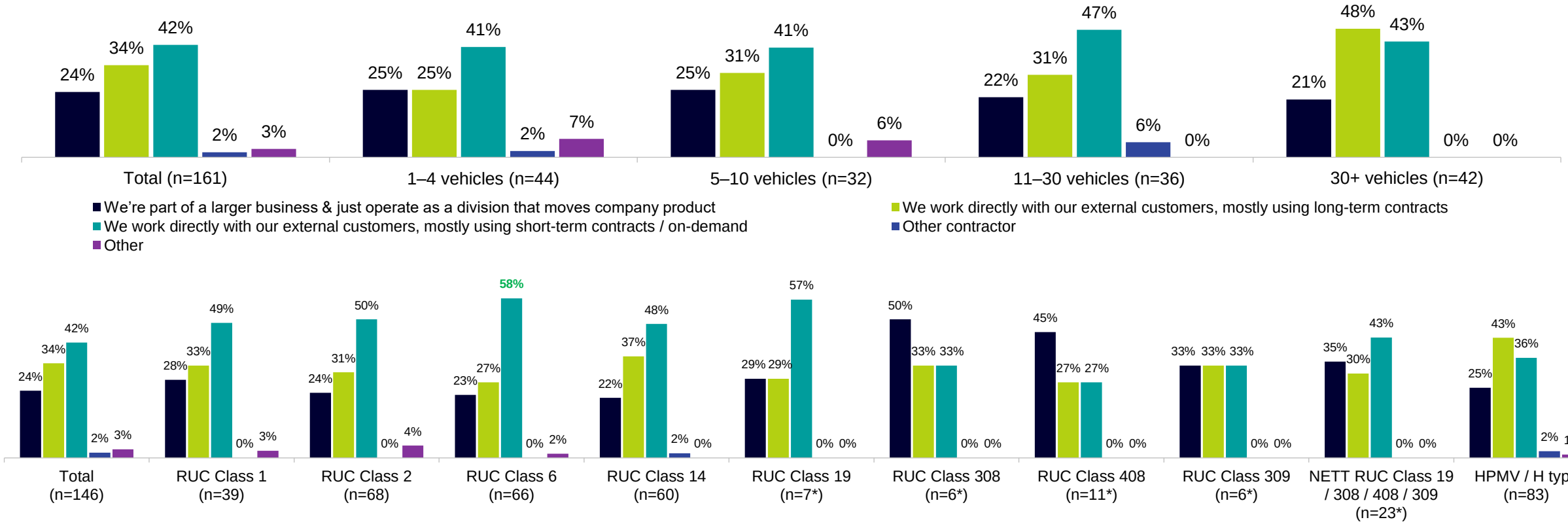


Q10: *Approximately how many of each type of truck does your business operate? If you are not sure, please give your best estimate. /* ***Q8:*** *Which of the following types of trips does your truck fleet usually do?*

Base: *Total sample (n=161), each group (see chart for base sizes)*

Fleet profiles – Transport operation by fleet size and RUC class (1)

Most respondents reported having direct relationships with their customers, with short-term contracts being a little more common than long-term ones. Some 24% were part of larger businesses*.

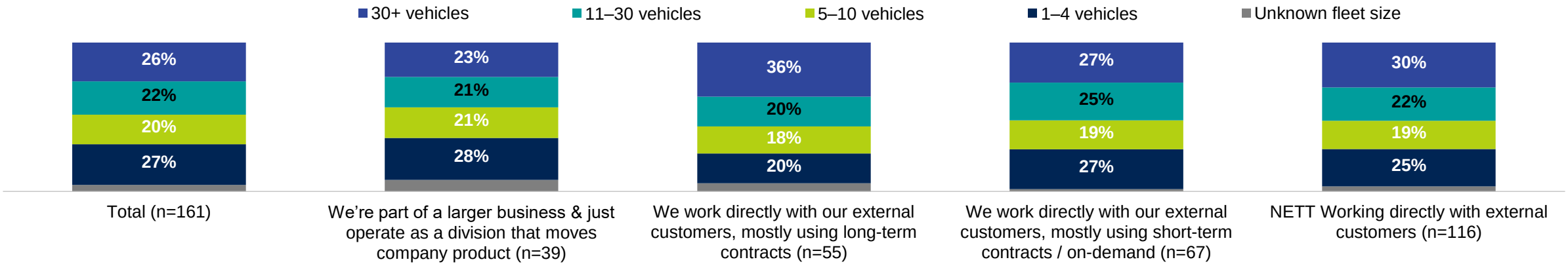


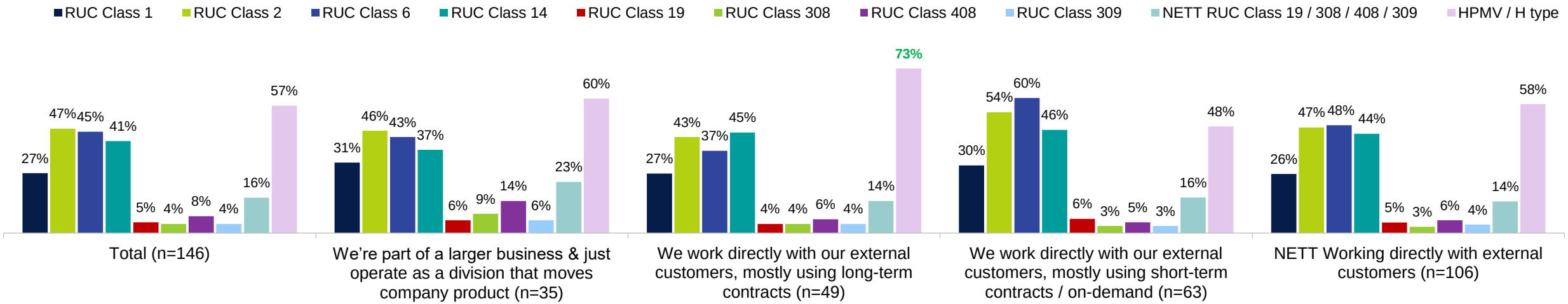
Q10: *Approximately how many of each type of truck does your business operate? If you are not sure, please give your best estimate /* ***Q16:*** *Which of the following describes how the transportation side of your business operates? /* ***Q11:*** *Thinking about the powered vehicles that you mentioned, how many do you have in each of the following RUC classes?*

Base: *Total sample (n=161), total operators who know their fleet's RUC classes (n=146), each group (see chart for base sizes); fleet-size data based on operators who know their fleet size (n=154).* ****Caution: Small number of respondents in this group.*** ***Green*** */* ***red*** *indicates significantly* ***higher*** */* ***lower*** *than the total*

Fleet profiles – Transport operation by fleet size and RUC class (2)

Those who maintain long-term contracts directly with customers are more likely to operate HPMVs.



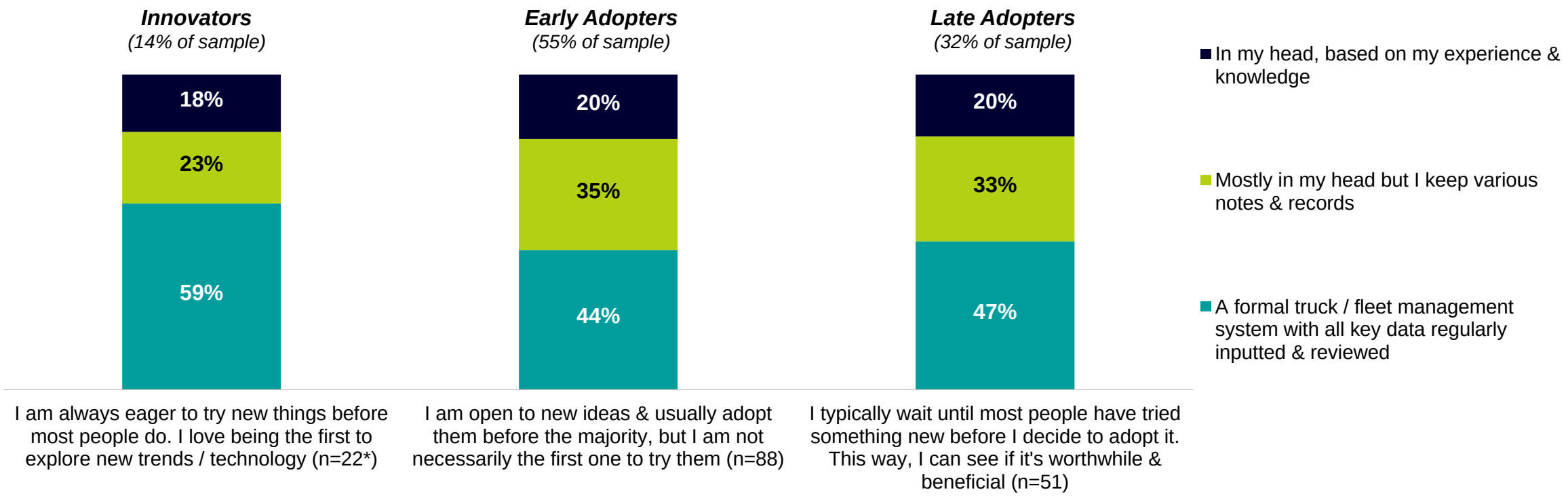


Q10: *Approximately how many of each type of truck does your business operate? If you are not sure, please give your best estimate. /* ***Q16:*** *Which of the following describes how the transportation side of your business operates? /* ***Q11:*** *Thinking about the powered vehicles that you mentioned, how many do you have in each of the following RUC classes?*

Base: *Total sample (n=161), operators who know their fleet's RUC classes (n=146), each group (see chart for base sizes).* ***Green*** */* ***red*** *indicates significantly* ***higher*** */* ***lower*** *than the total*

Fleet management – Storage of information by openness to new ideas

Between 44% and 59% ‘openness groupings’ use formal truck management systems, with ‘Innovators’ having the highest proportion using a management system.

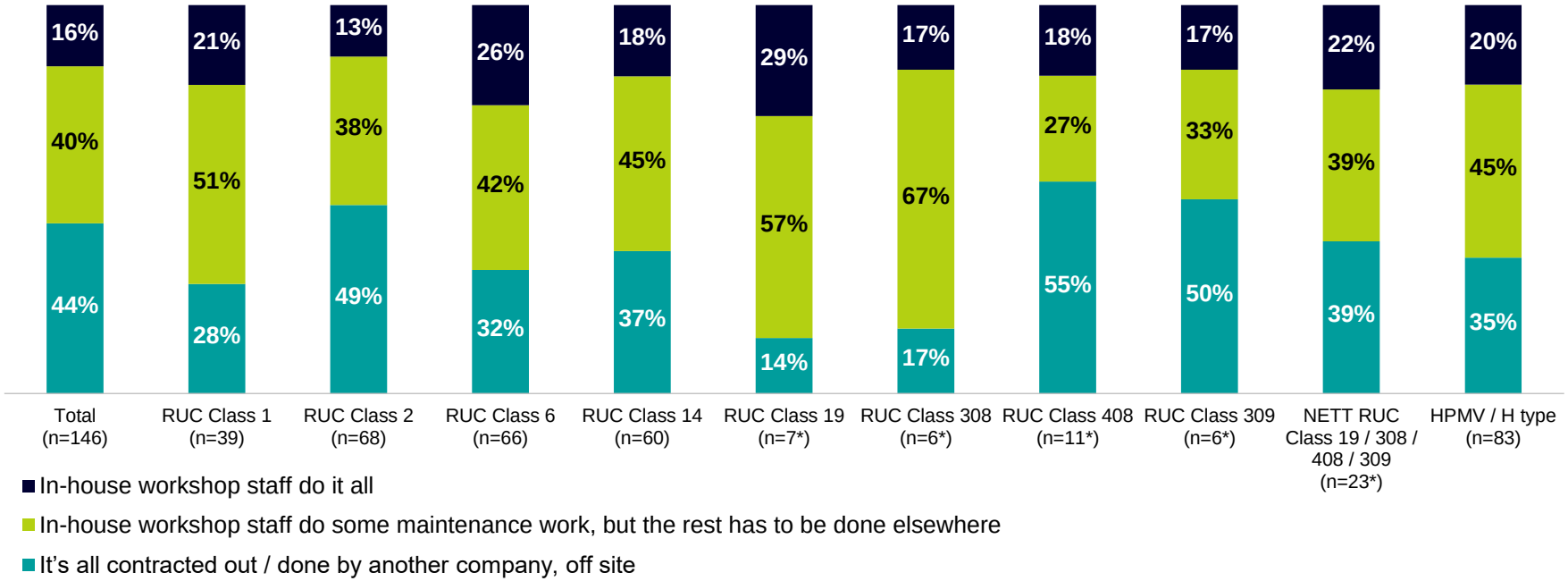


Q44: *Where is most of your truck management information kept?* / ***Q3:*** *Firstly, how would you describe your approach to adopting new ideas, technologies, or trends?*

Base: *Each group in the total sample (see chart for base sizes).* ****Caution: Small number of respondents in this group.***

Fleet management - Maintenance practices by fleet size and RUC class

Overall, 46% of businesses contracted out all their maintenance. There are no statistically significant differences between in-house workshop usage and fleet size, in-house capacity or RUC classes, although operators with 30+ vehicles had the highest proportion of in-house maintenance.

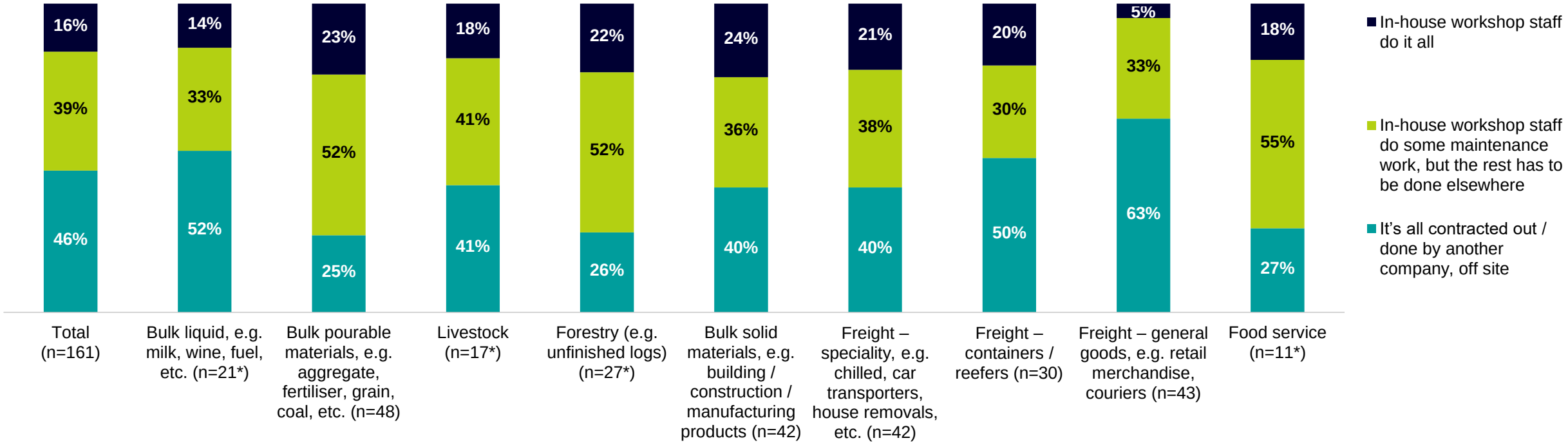


Q30: *How does the day-to-day maintenance of your business' trucks get done?* / ***Q10:*** *Approximately how many of each type of truck does your business own?* / ***Q11:*** *Thinking about the powered vehicles that you mentioned, how many do you have in each of the following RUC classes?*

Base: *Total sample (n=161), operators who know their fleet's RUC classes (n=146), each group (see chart for base sizes); fleet-size data based on operators who know their fleet size (n=154).* ****Caution: Small number of respondents in this group.***

Fleet management - Maintenance practices by freight type

Although different freights require different truck configurations, truck maintenance practices do not significantly differ by freight type.

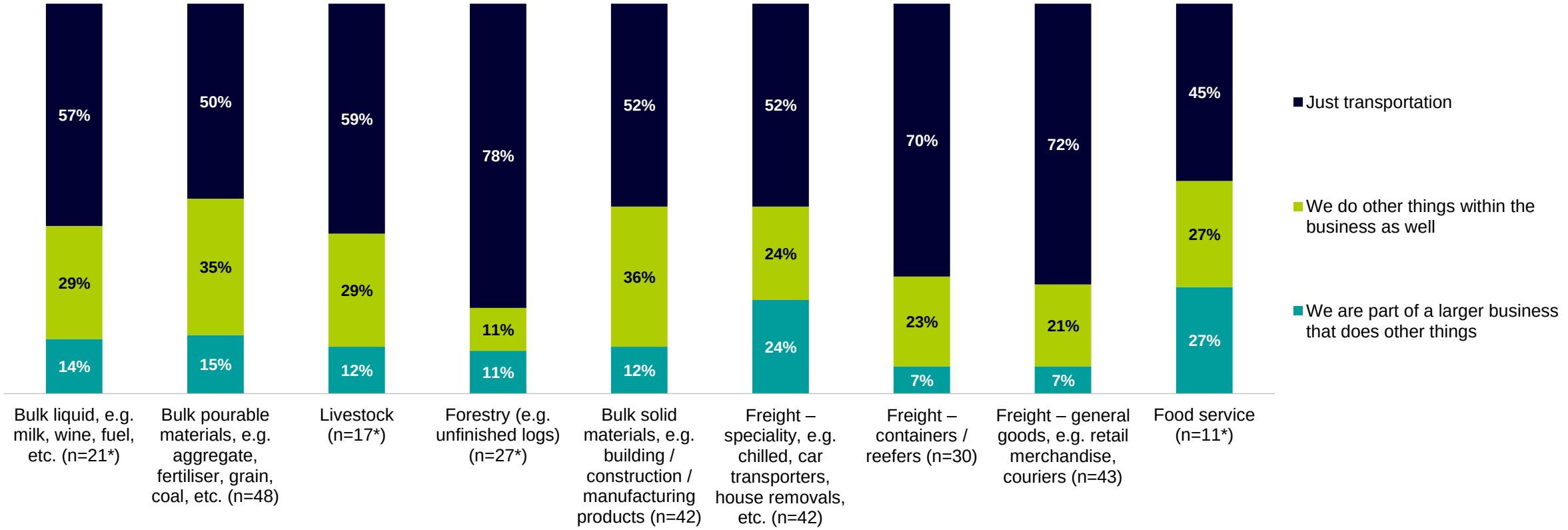


Q30: *How does the day-to-day maintenance of your business' trucks get done?* / ***Q6:*** *Which of the following types of freight does your truck fleet usually carry?*

Base: *Total sample (n=161), each group (see chart for base sizes).* ****Caution: Small number of respondents in this group.***

Business operations – diversity of activities by freight type

Business profile is not statistically related to the types of products being transported.

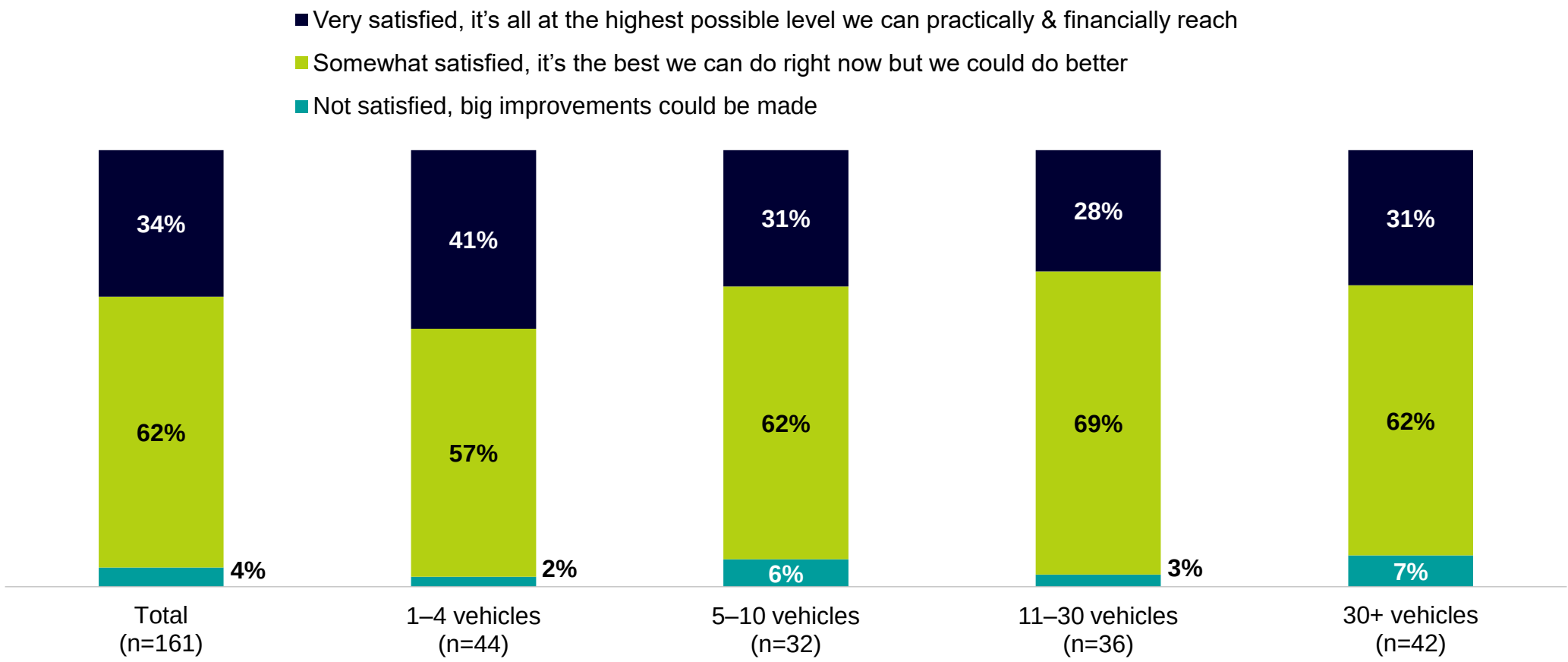


Q6: *Which of the following types of freight does your truck fleet usually carry? /* ***Q15:*** *Does your business only focus on transportation or does it do other things as well ?*

Base: *Total sample (n=161).* ****Caution: Small number of respondents in this group.***

Business operations - Satisfaction with fuel efficiency by fleet size

There were no statistically significant differences between fleet size and fuel efficiency satisfaction.

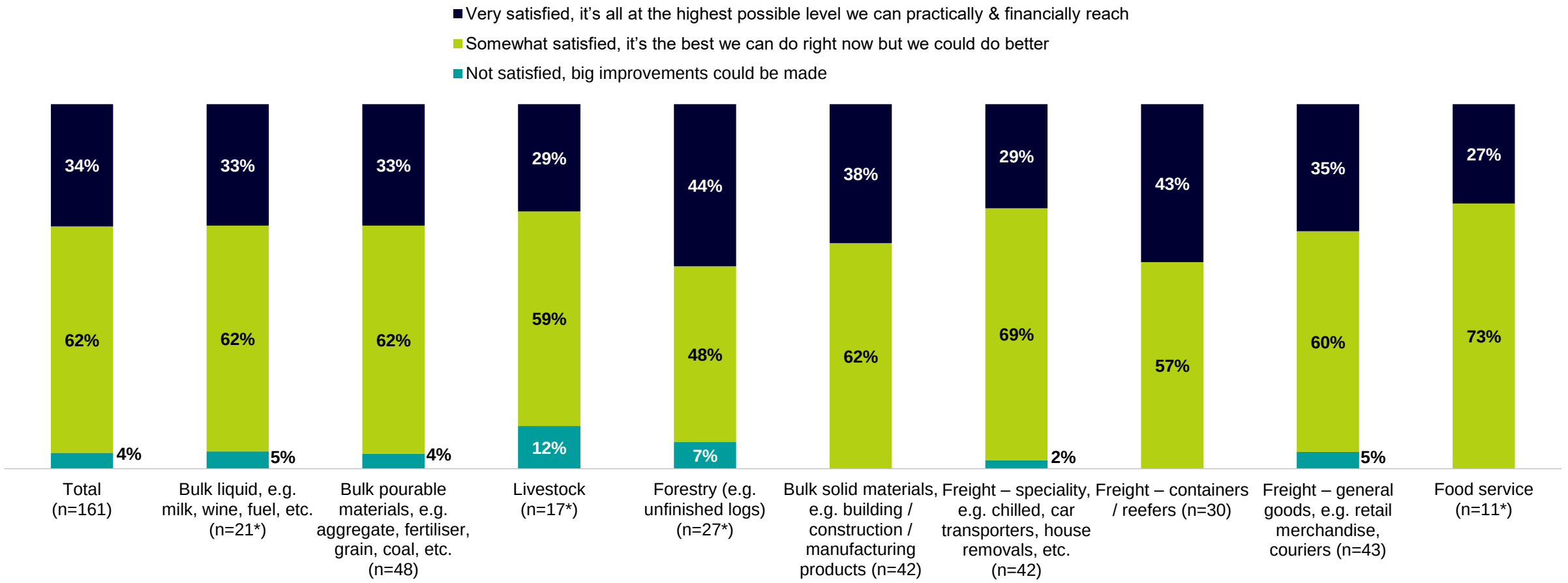


Q55: *How satisfied are you in the current fuel efficiency of your trucks?* / ***Q10:*** *Approximately how many of each type of truck does your business operate?*

Base: *Total sample (n=161), each group (see chart for base sizes); fleet-size data based on operators who know their fleet size (n=154)*

Business operations - Satisfaction with fuel efficiency by freight type

There were no significant differences in fuel efficiency satisfaction between freight types.

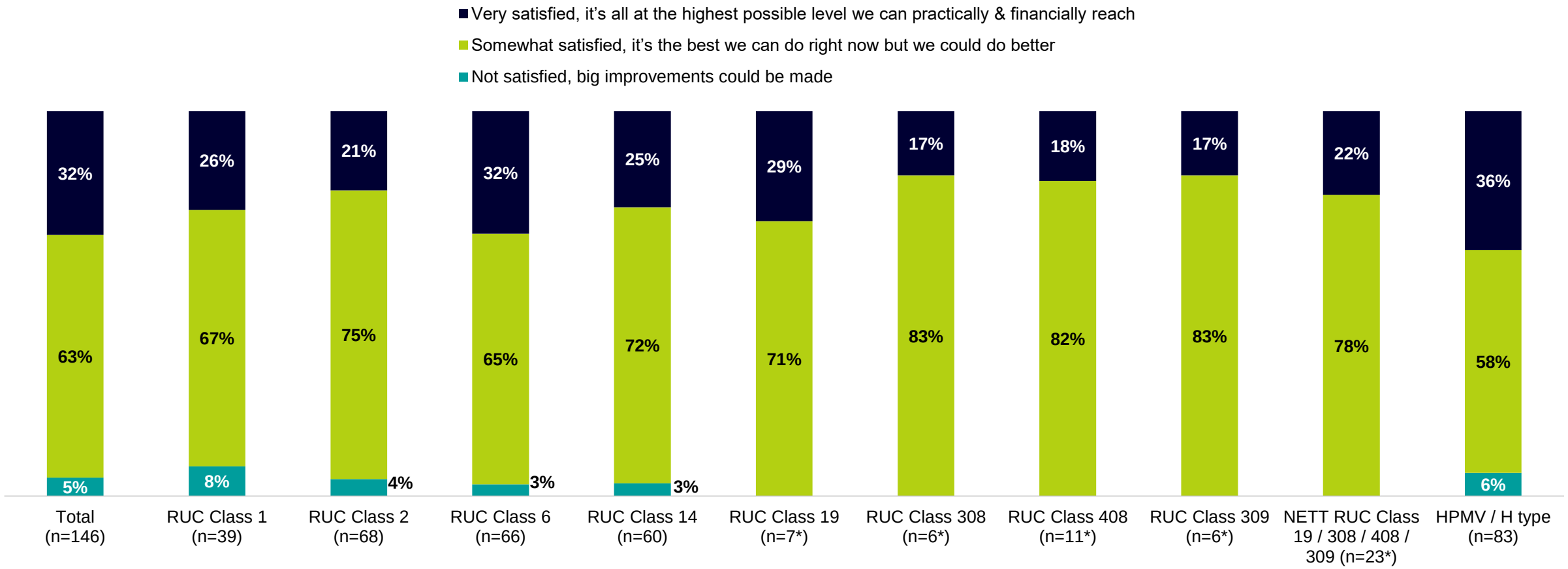


Q55: *How satisfied are you in the current fuel efficiency of your trucks?* / ***Q6:*** *Which of the following types of freight does your truck fleet usually carry?*

Base: *Total sample (n=161), each group (see chart for base sizes).* ****Caution: Small number of respondents in this group.***

Business operations - Satisfaction with fuel efficiency by RUC class

There were no significant differences in fuel efficiency satisfaction between RUC classes.

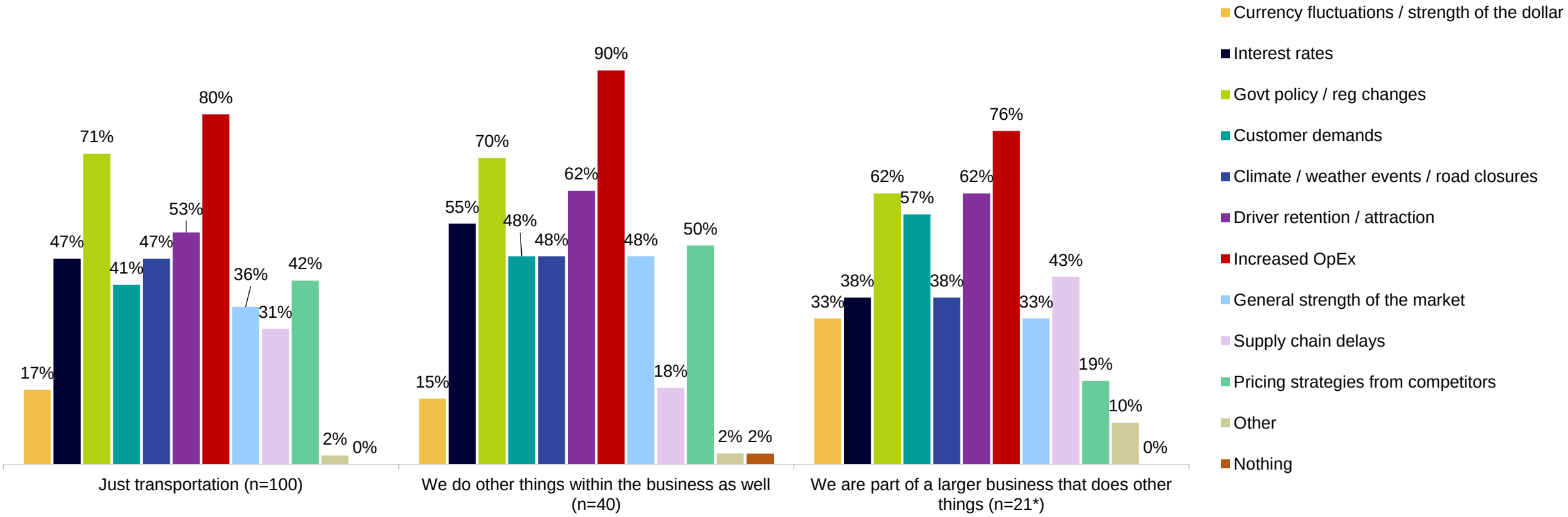


Q55: *How satisfied are you in the current fuel efficiency of your trucks?* / ***Q11:*** *Thinking about the powered vehicles that you mentioned, how many do you have in each of the following RUC classes?*

Base: *Operators who know their fleet's RUC classes (n=146), each group (see chart for base sizes).* ****Caution: Small number of respondents in this group.***

Business operations – Challenges in future business planning by activity variability

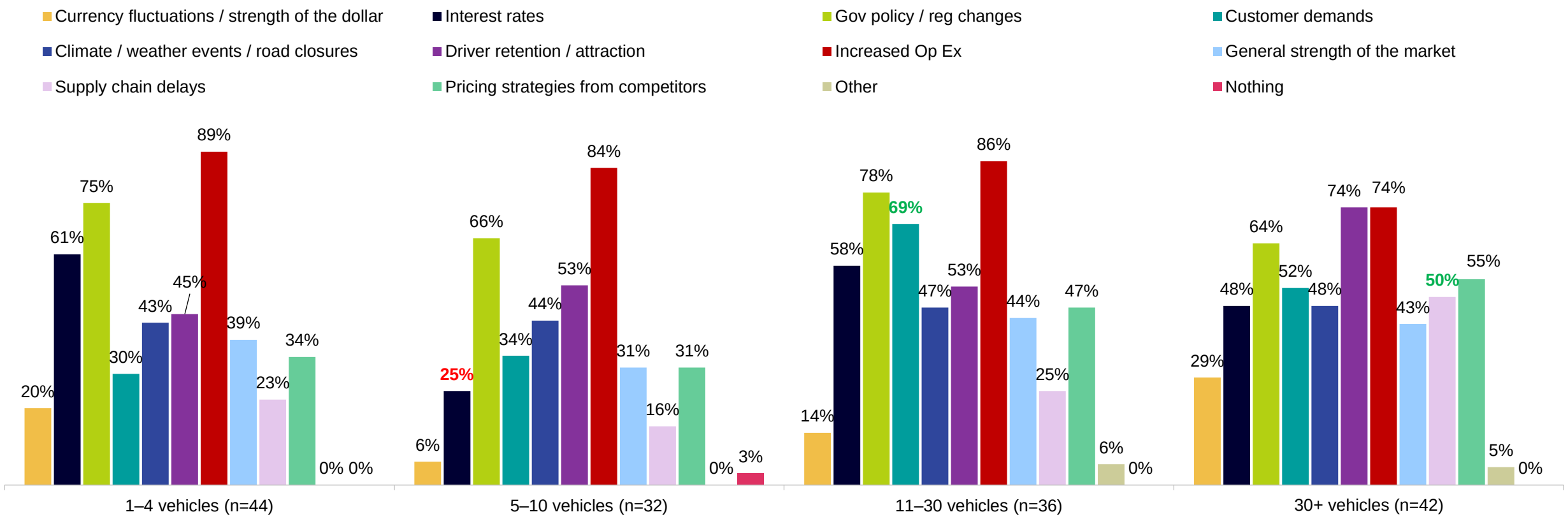
Future challenges don't vary significantly according to the transportation focus of the business – all are similarly challenged by *increasing operating costs*.



Q22: *Which, if any, of the following make planning for the future of the business especially difficult? /* ***Q15:*** *Does your business only focus on transportation or does it do other things as well?*
Base*: Each group in the total sample (see chart for base sizes).* ****Caution: Small number of respondents in this group.***

Business operations – Challenges in future business planning by fleet size

Increasing operating costs are the most frequently cited challenge for businesses of all sizes. Larger ones (30+ vehicles) are significantly more likely to cite *supply chain delays*. *Customer demands* are significant higher worry for businesses with 11–30 vehicles.

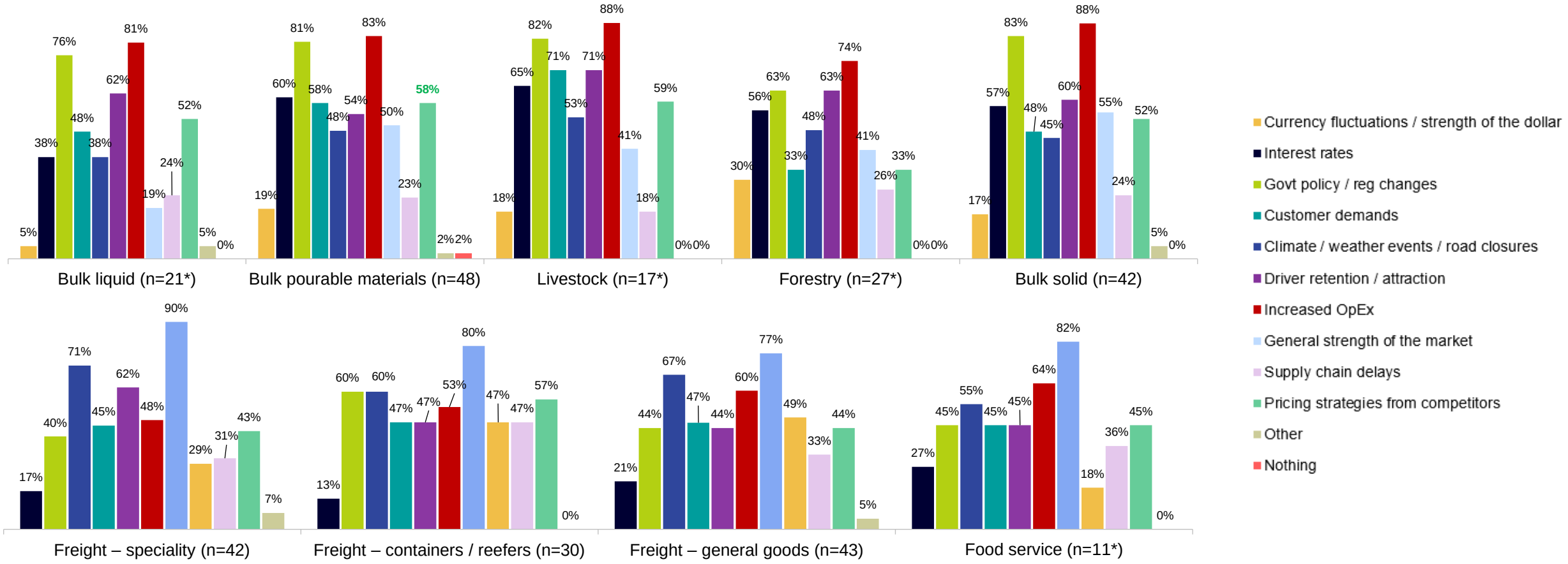


Q22: *Which, if any, of the following make planning for the future of the business especially difficult?* / ***Q10:*** *Approximately how many of each type of truck does your business operate?*

Base: *Each group in the total sample (see chart for base sizes); fleet-size data based on operators who know their fleet size (n=154).* ***Green*** */* ***red*** *indicates significantly* ***higher*** */* ***lower*** *than the total*

Business operations – Challenges in future business planning by freight type

Rising operating costs and *changing government policies* are the most cited future challenges regardless of freight type. Those mainly transporting bulk pourables are more likely to cite *competitors' pricing strategies.*

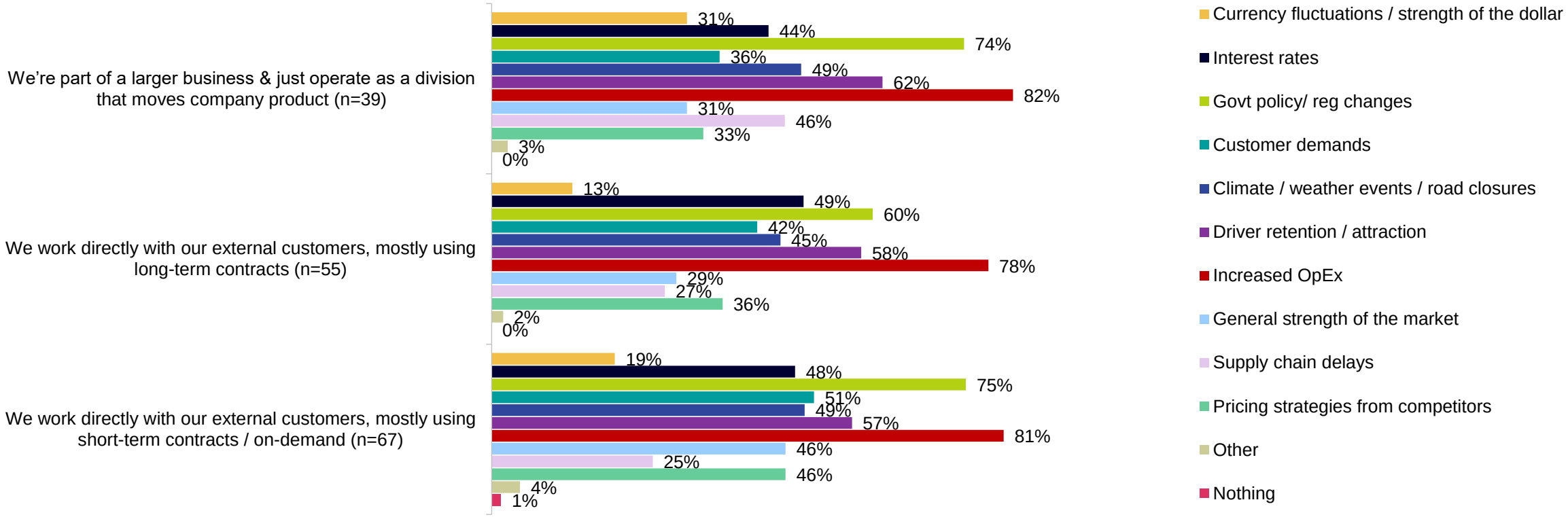


Q22: *Which, if any, of the following make planning for the future of the business especially difficult?* / ***Q6:*** *Which of the following types of freight does your truck fleet usually carry?*

Base: *Each group in the total sample (see chart for base sizes).* ****Caution: Small number of respondents in this group.*** ***Green*** */* ***red*** *indicates significantly* ***higher*** */* ***lower*** *than the total*

Business operations – Challenges in future business planning by transport operation

Rising operating costs and *govt policy / regulation changes* are the main challenges regardless of transport operations.

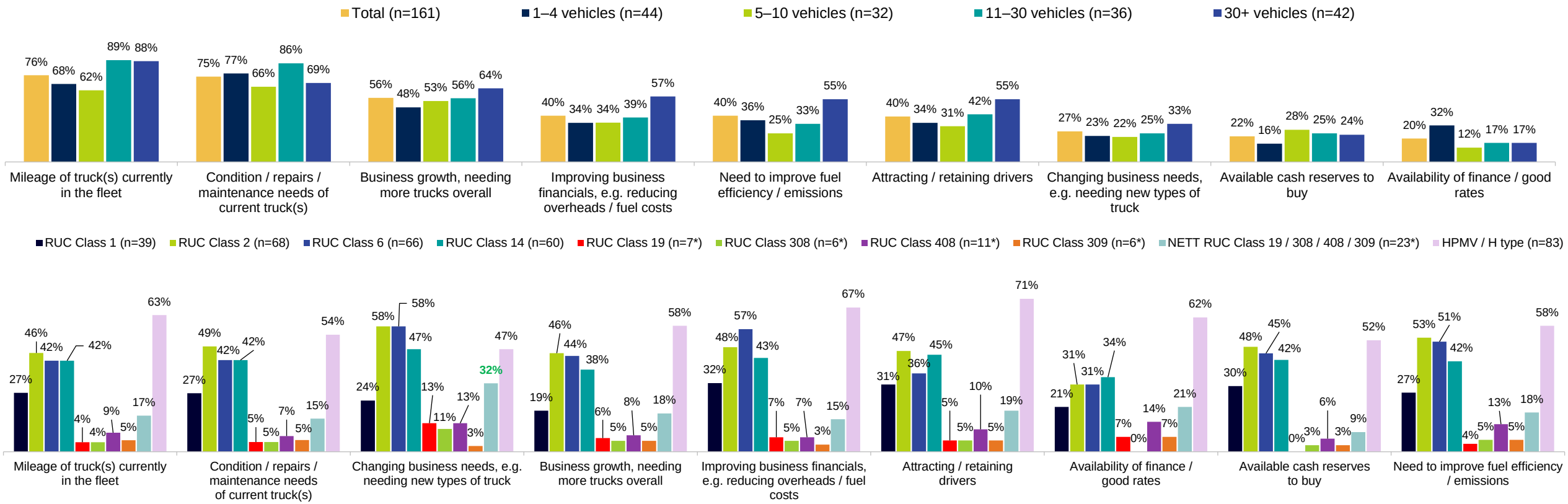


Q22: *Which, if any, of the following make planning for the future of the business especially difficult?* / ***Q16:*** *Which of the following describes how the transportation side of your business operates?*

Base: *Each group in the total sample (see chart for base sizes)*

Purchasing vs leasing – Factors leading to getting a new truck by fleet size and RUC class

There were no statistically significant differences across fleet sizes and RUC classes in relation to truck-purchase criteria.

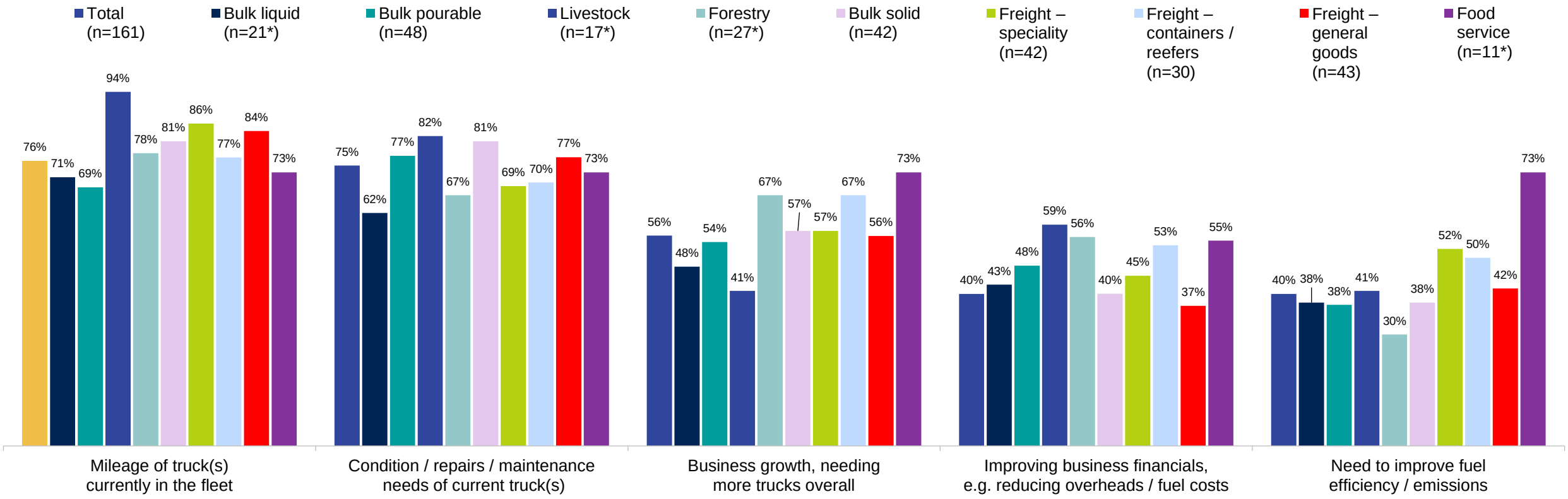


Q41: *Regardless of whether they are new, used, bought or leased, what factors generally lead to getting a new truck?* / ***Q10:*** *Approximately how many of each type of truck does your business own?* / ***Q11:*** *Thinking about the powered vehicles that you mentioned, how many do you have in each of the following RUC classes?*

Base: *Total sample (n=161), each group (see chart legend for base sizes); fleet-size and RUC class data based on operators who know their fleet's size (n=154) or RUC classes (n=146).* ****Caution: Small number of respondents in this group.***

Purchasing vs leasing – Factors leading to getting a new truck by freight type (1)

There were no statistically significant differences across freight types in relation to truck-purchase criteria.

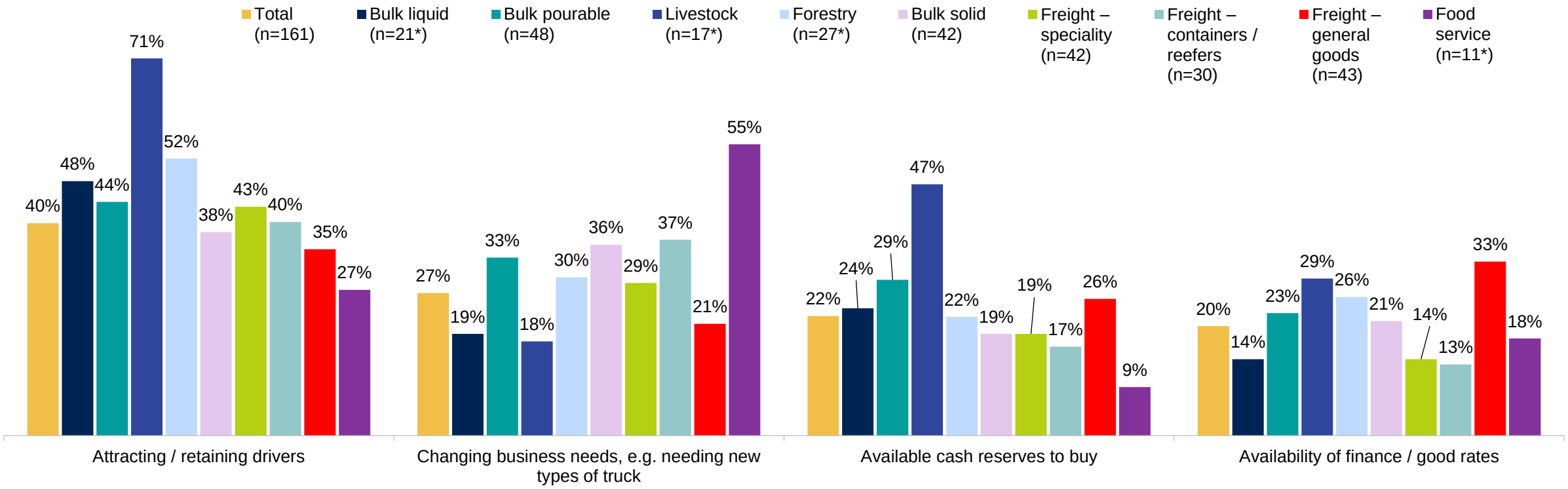


Q41: *Regardless of whether they are new, used, bought or leased, what factors generally lead to getting a new truck?* / ***Q6:*** *Which of the following types of freight does your truck fleet usually carry?*

Base: *Total sample (n=161), each group (see chart legend for base sizes).* ****Caution: Small number of respondents in this group.***

Purchasing vs leasing – Factors leading to getting a new truck by freight type (2)

There were no statistically significant differences across freight types in relation to truck-purchase criteria.

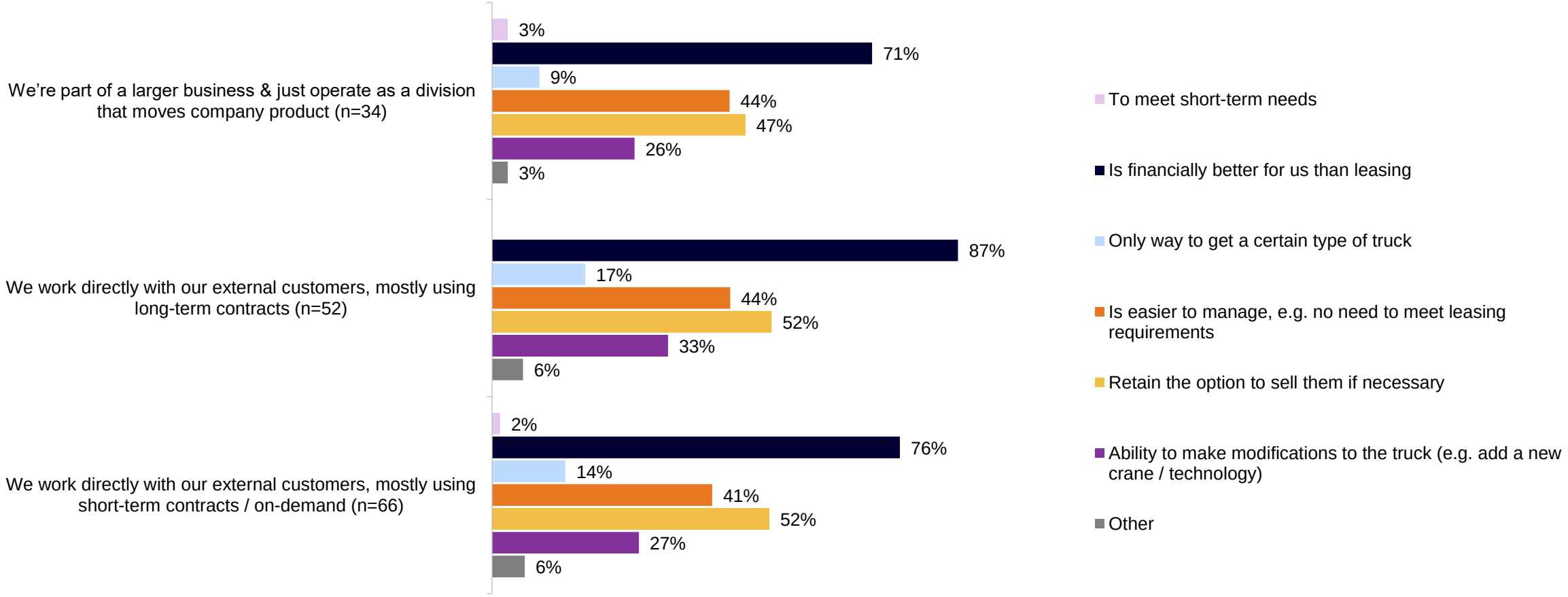


Q41: *Regardless of whether they are new, used, bought or leased, what factors generally lead to getting a new truck?* / ***Q6:*** *Which of the following types of freight does your truck fleet usually carry?*

Base: *Total sample (n=161), each group (see chart legend for base sizes).*

Purchasing vs leasing – Reasons for truck ownership by transport operation

Regardless of how transportation side of the business is operated, truck ownership is widely felt to be *more financially viable* than leasing. Motivations for purchasing instead of leasing don't vary significantly according to contract types used.

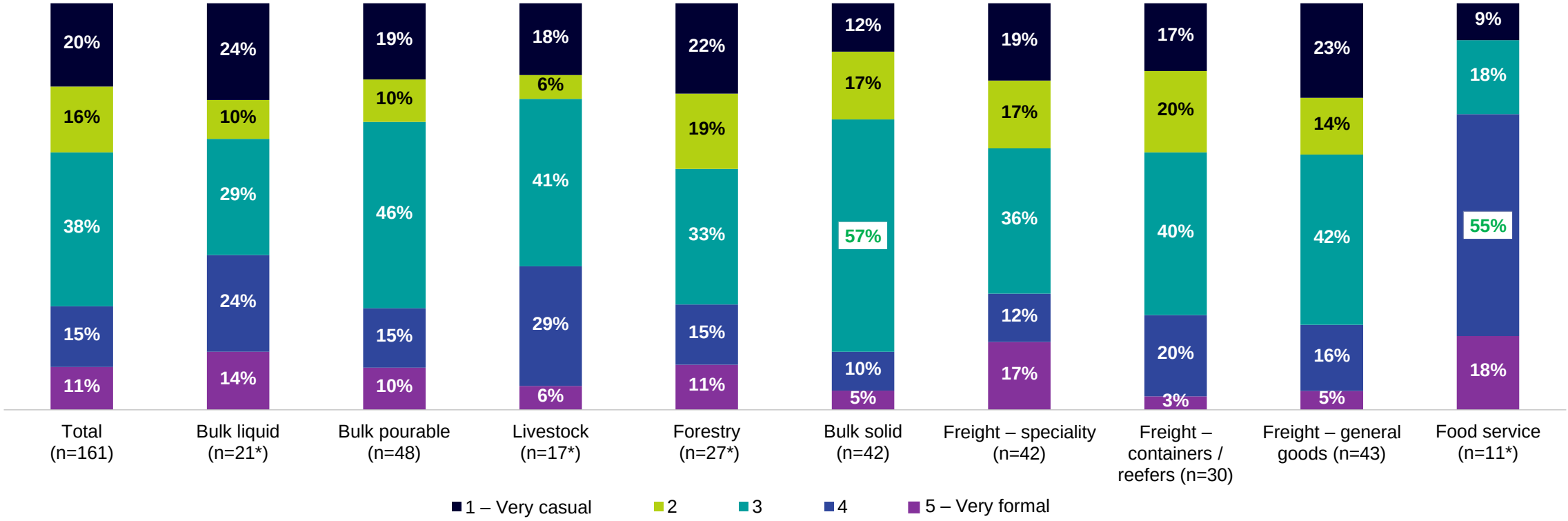


Q32: *What are the reasons why you have chosen to buy instead of lease these vehicles?* / ***Q16:*** *Which of the following describes how the transportation side of your business operates?*

Base: *Each group in the sample of truck-owning operators (see chart for base sizes)*

Purchasing practices - Procurement formality by freight type

Across most freight types, procurement formality tends to sit somewhere in the middle between casual and formal. Those primarily transporting bulk solids are more likely to be ‘in the middle’ between formal and informal processes, whereas those in food service are more likely to be formal.

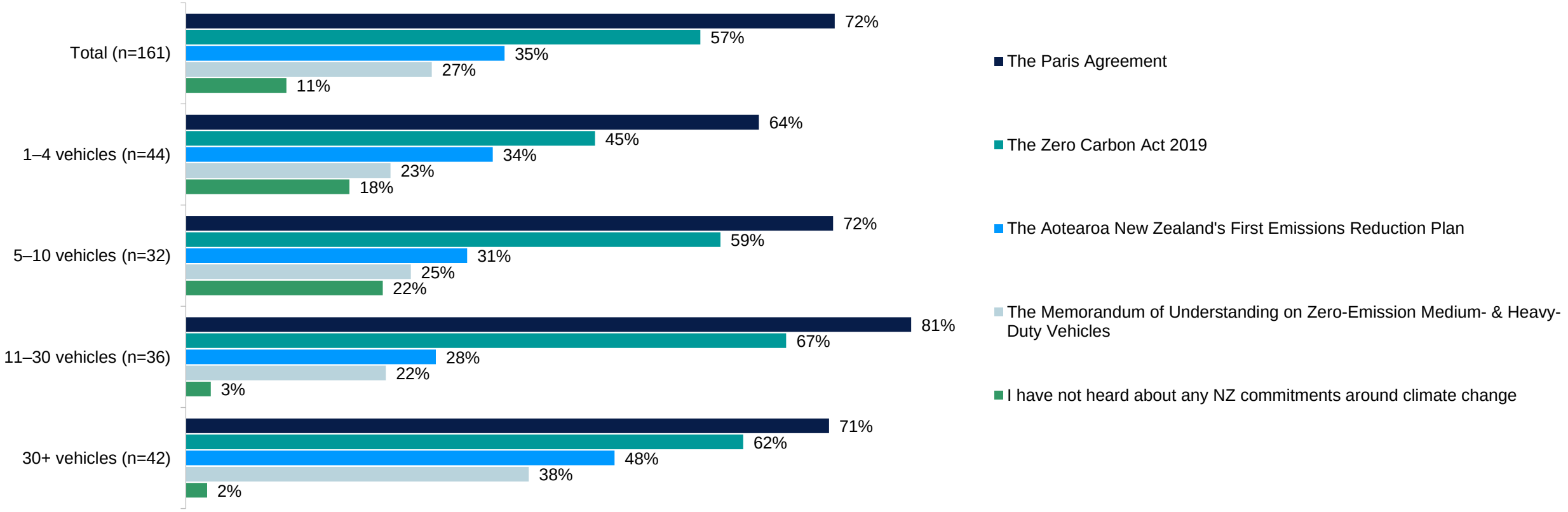


Q43: *Thinking about your normal process of evaluating what trucks to buy or lease, how formal is the process you usually go through?* / ***Q6:*** *Which of the following types of freight does your truck fleet usually carry?*

Base: *Total sample (n=161), each group (see chart for base sizes).* ****Caution: Small number of respondents in this group.*** ***Green*** / ***red*** *indicates significantly* ***higher*** / ***lower*** *than the total*

Emissions reduction – Awareness of global emissions agreements fleet size

There were no statistically significant variations amongst different fleet-size operators, although awareness of New Zealand's own emissions reduction plan was higher among those with larger fleets (30+ vehicles).

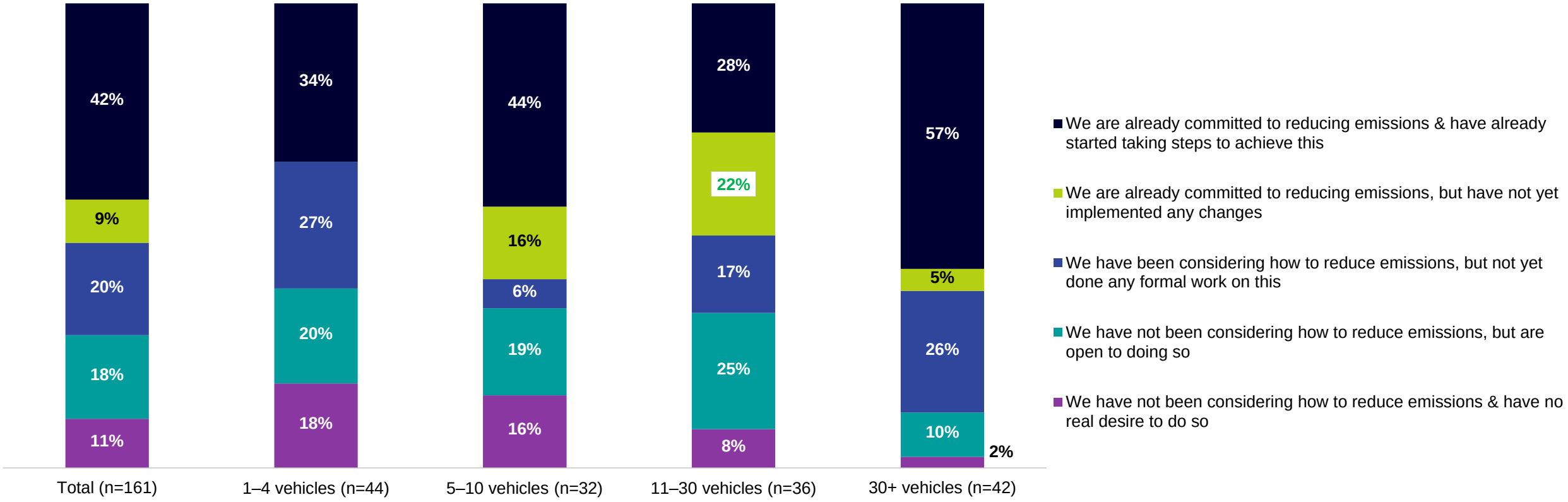


Q54: *Before today, which, if any of the following commitments had you heard of?* / ***Q10:*** *Approximately how many of each type of truck does your business operate?*

Base: *Total sample (n=161), each group (see chart for base sizes); fleet-size data based on operators who know their fleet size (n=154)*

Emissions reduction – Attitudes and behaviours by fleet size

There appears to be a weak relationship between carbon reduction and fleet size, with disinterest falling as fleet size increases. Looking at un-executed change and fleet size, the greatest potential lies in those with 11–30 vehicles, with 22% wanting to change though not having done so yet.

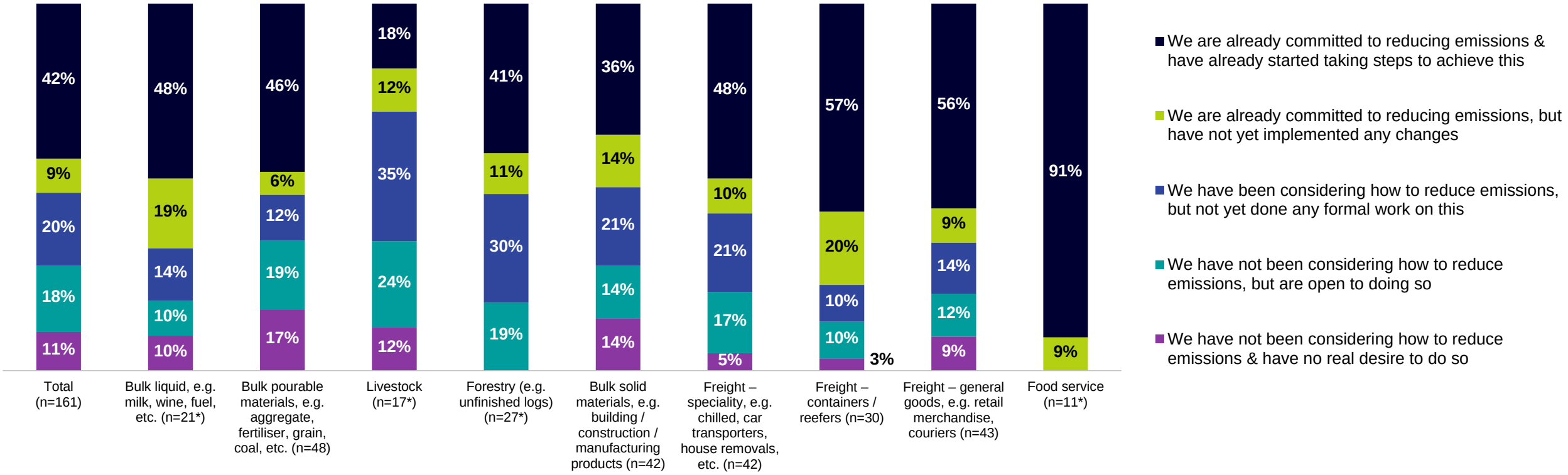


Q56: *Where does the reduction of your vehicles fleet's carbon emissions fit into your business' medium-to-long-term plan?* / ***Q10:*** *Approximately how many of each type of truck does your business operate?*

Base: *Total sample (n=161); each group (see chart for base sizes); fleet-size data based on operators who know their fleet size (n=154).* ***Green*** / ***red*** *indicates significantly* ***higher*** / ***lower*** *than the total*

Emissions reduction – Attitudes and behaviours by freight type

There are no statistically significant differences according to freight type, although a high proportion of those in food service are already committed and have started taking actions.

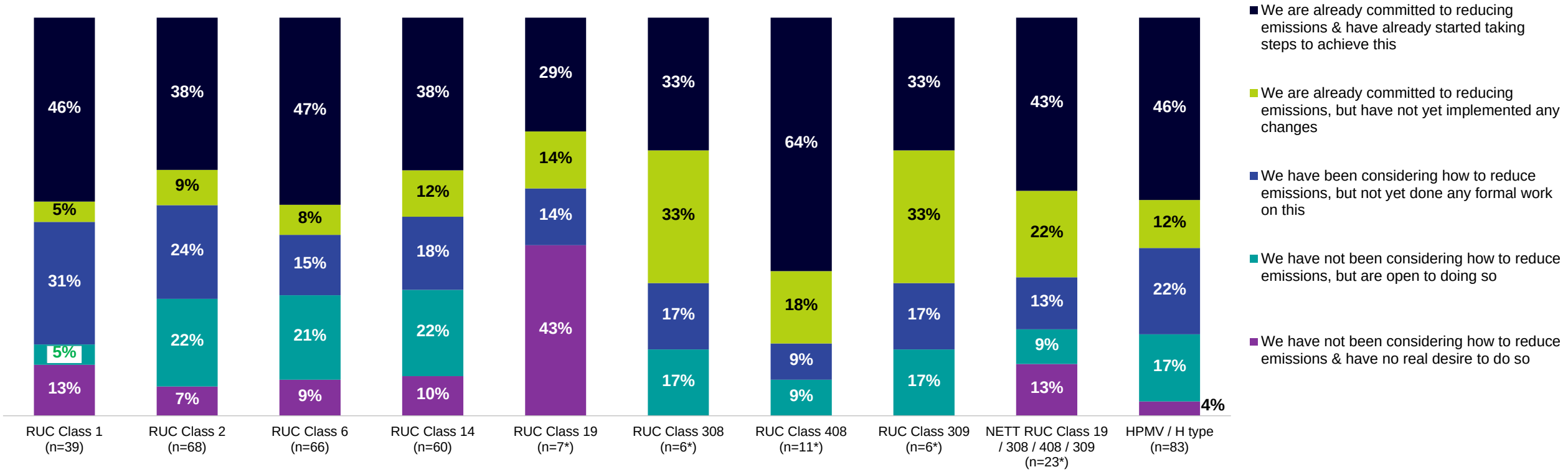


Q56: *Where does the reduction of your vehicles fleet's carbon emissions fit into your business' medium-to-long-term plan?* / ***Q6:*** *Which of the following types of freight does your truck fleet usually carry?*

Base: *Total sample (n=161), each group (see chart for base sizes).* ****Caution: Small number of respondents in this group.***

Emissions reduction – Attitudes and behaviours by RUC class

There are no statistically significant differences amongst RUC classes. While this will partially reflect the small sub-sample sizes, it may also indicate that willingness to change is not restricted to just a few specific truck configurations.

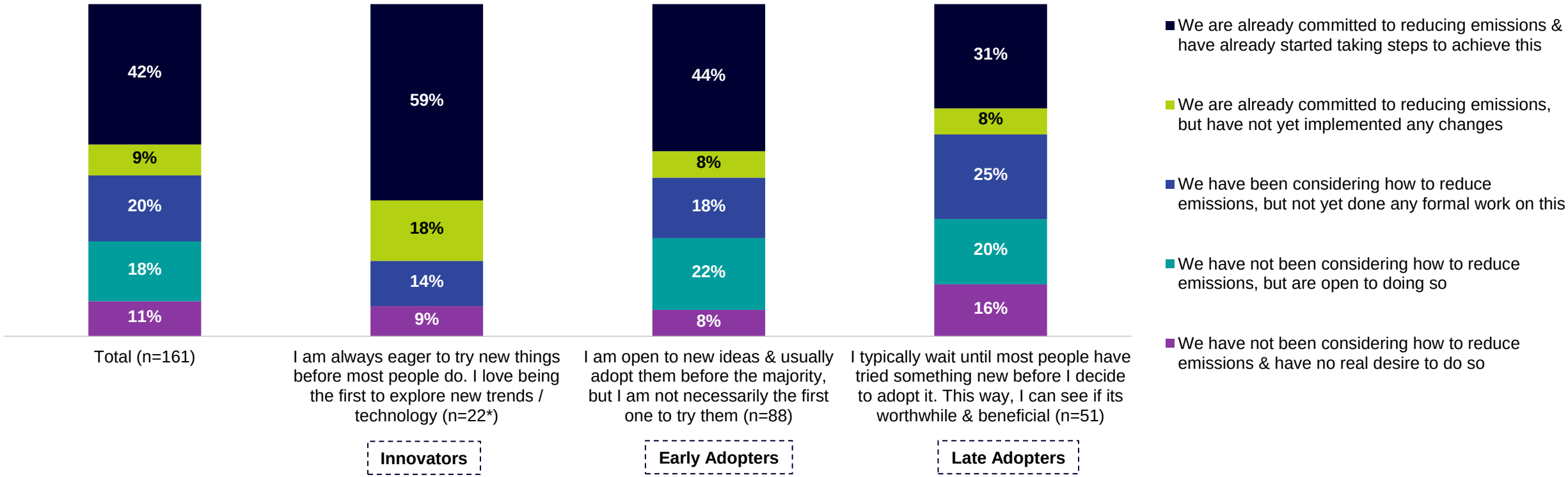


Q56: *Where does the reduction of your vehicles fleet's carbon emissions fit into your business' medium-to-long-term plan?* / ***Q11:*** *Thinking about the powered vehicles that you mentioned, how many do you have in each of the following RUC classes?*

Base: *Operators who know their fleet's RUC classes (n=146), each group (see chart for base sizes).* ****Caution: Small number of respondents in this group.***

Emissions reduction – Attitudes and behaviours by personality

Although not statistically significant, there appears to be a relationship between respondents' openness to new ideas and their likelihood to have already started reducing emissions, with 59% of 'Innovators' having done so vs 31% of 'Late Adopters'.

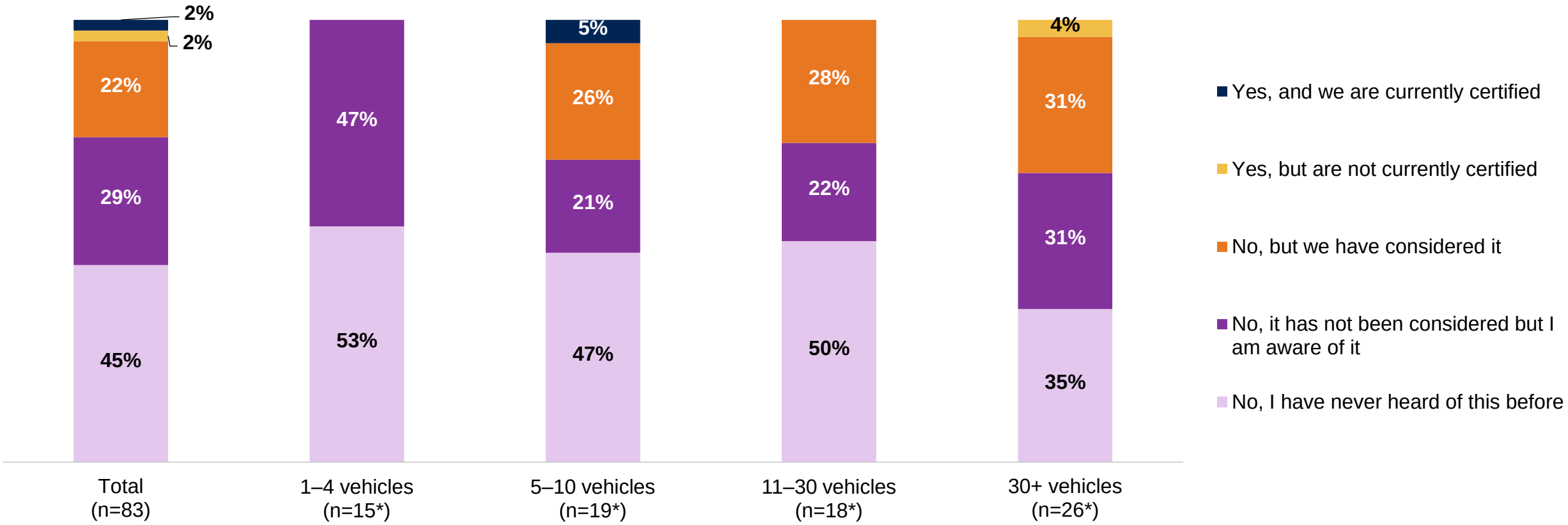


Q56: *Where does the reduction of your vehicles fleet's carbon emissions fit into your business' medium-to-long-term plan?* / ***Q3:*** *Firstly, how would you describe your approach to adopting new ideas, technologies, or trends?*

Base: *Total sample (n=161), each group (see chart for base sizes).* ****Caution: Small number of respondents in this group.***

ISO certification – Attitudes and behaviours by fleet size

ISO certification was reported by those operating 5–10 vehicles; consideration is lowest amongst small-fleet operators.

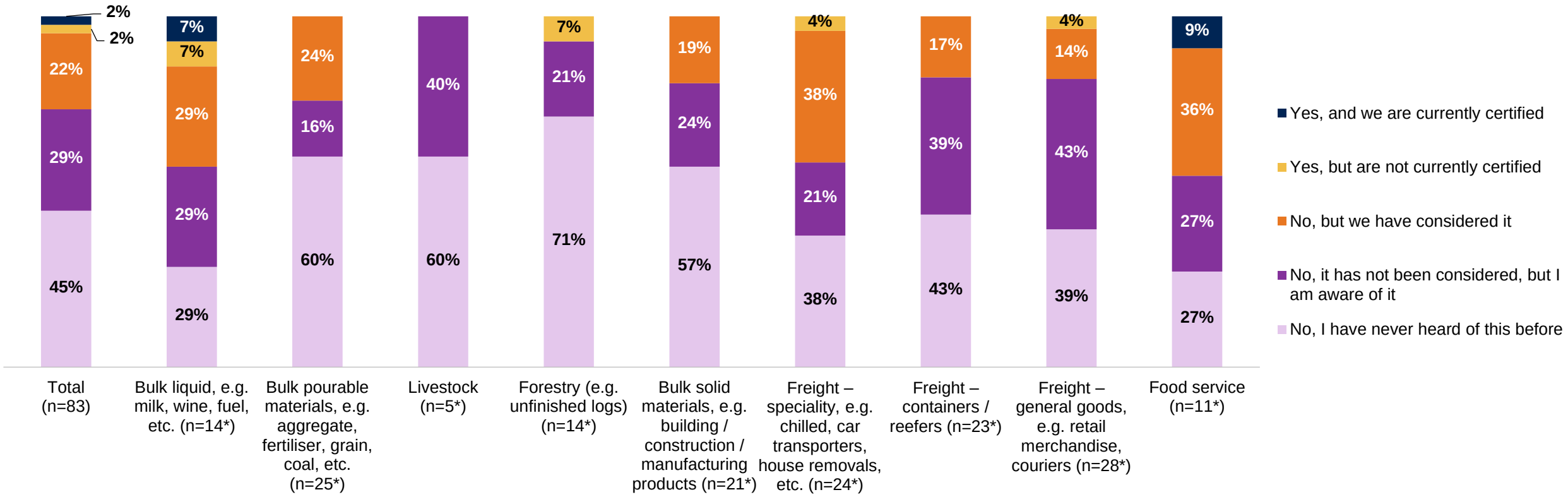


Q60: *Has your business ever achieved ISO certification for lower-emissions management?* / ***Q10:*** *Approximately how many of each type of truck does your business operate?*

Base: *Operators committed to reducing emissions (n=83), each group (see chart for base sizes); fleet-size data based on operators who know their fleet size.* ****Caution: Small number of respondents in this group.***

ISO certification – Attitudes and behaviours by freight type

Awareness and usage of ISO emissions certification vary widely across freight types, with awareness being lowest amongst forestry and highest amongst food service and bulk liquid carriers (who were also most likely to have current certification).

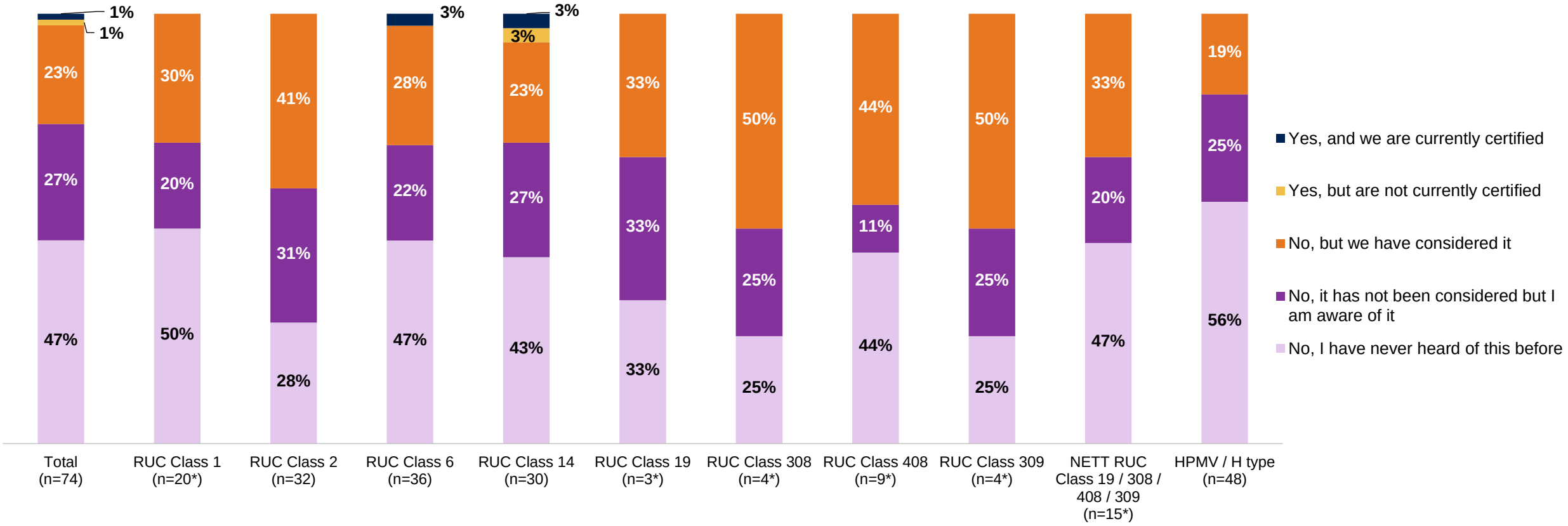


Q60: *Has your business ever achieved ISO certification for lower-emissions management?* / ***Q6:*** *Which of the following types of freight does your truck fleet usually carry?*

Base: *Operators committed to reducing emissions (n=83), each group (see chart for base sizes).* ****Caution: Small number of respondents in this group.***

ISO certification – Attitudes and behaviours by RUC class

Awareness and usage of ISO emissions certification varies widely across RUC classes. The RUC classes with any certified businesses are classes 6 and 14.

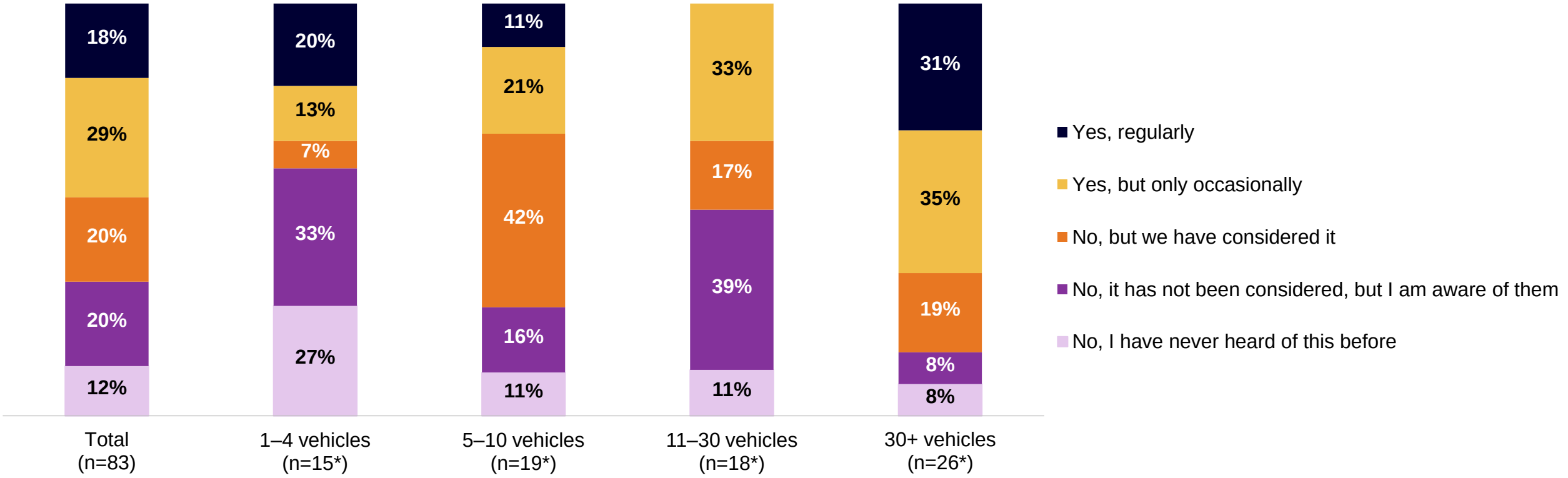


Q60: *Has your business ever achieved ISO certification for lower-emissions management?* / ***Q11:*** *Thinking about the powered vehicles that you mentioned, how many do you have in each of the following RUC classes?*

Base: *Operators committed to reducing emissions who know their fleet's RUC classes (n=74), each group (see chart for base sizes).* ****Caution: Small number of respondents in this group.***

Emissions assessments – Attitudes and behaviours by fleet size

Larger-fleet managers seemed the most likely to conduct emissions assessments, with 66% of them having done so and almost half of these regularly conducting them (although these differences were not statistically significant, they do align with the earlier results showing larger-fleet managers to be more formal in their fleet management processes).

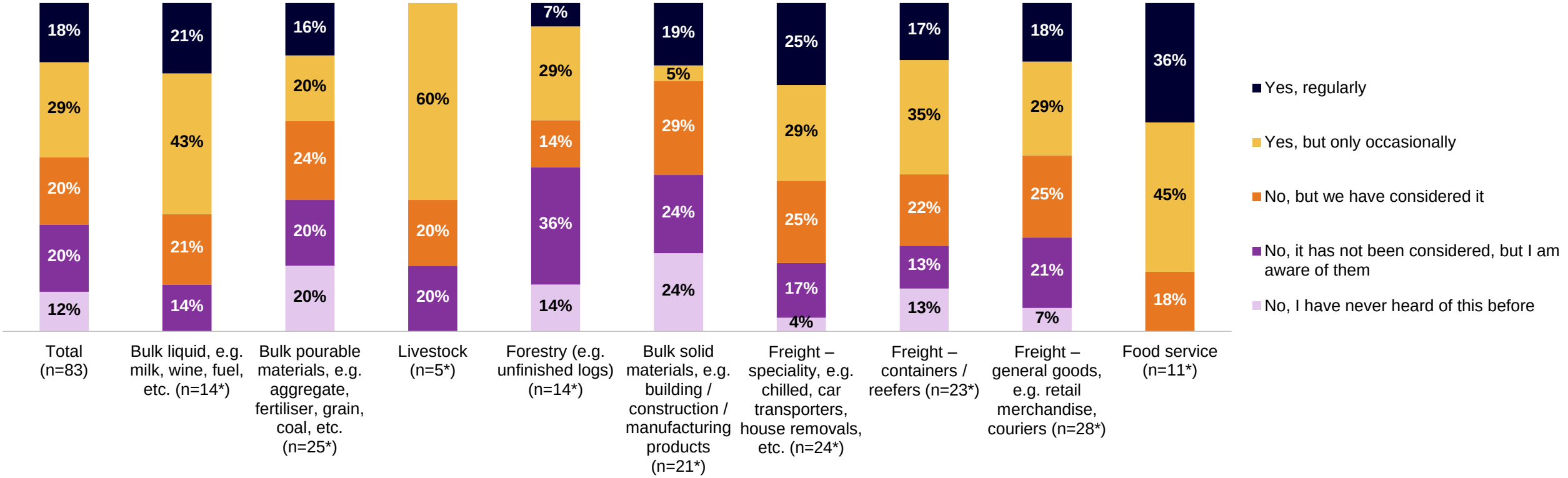


Q59: *Does your business conduct regular emissions assessments of your fleet?* / ***Q10:*** *Approximately how many of each type of truck does your business operate?*

Base: *Operators committed to reducing emissions (n=83), each group (see chart for base sizes); fleet-size data based on operators who know their fleet size.* ****Caution: Small number of respondents in this group.***

Emissions assessments – Attitudes and behaviours by freight type

Awareness and usage of emissions assessments varied widely across freight types, being highest amongst those in food service. The larger-freight groups (bulk materials and speciality freight) had 20%–50% conducting such assessments.

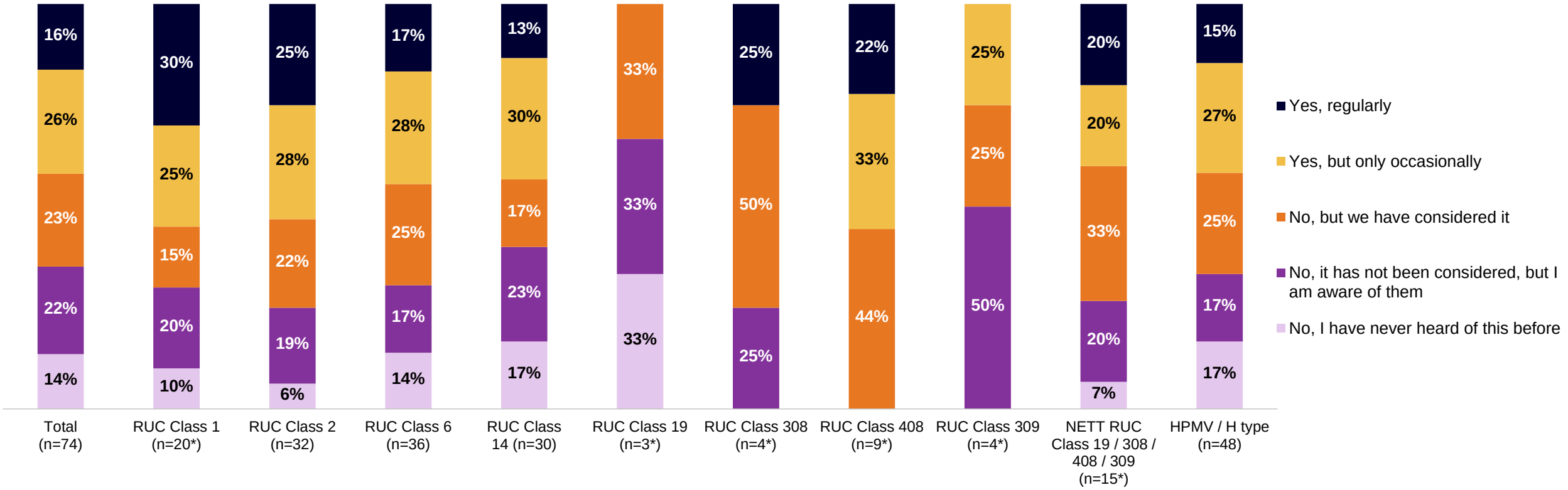


Q59: *Does your business conduct regular emissions assessments of your fleet?* / ***Q6:*** *Which of the following types of freight does your truck fleet usually carry?*

Base: *Operators committed to reducing emissions (n=83), each group (see chart for base sizes).* ****Caution: Small number of respondents in this group.***

Emissions assessments – Attitudes and behaviours by RUC class

The smaller-RUC-class operators were more likely to conduct emissions assessments at least occasionally or more regularly.



Q59: *Does your business conduct regular emissions assessments of your fleet?* / ***Q11:*** *Thinking about the powered vehicles that you mentioned, how many do you have in each of the following RUC classes?*

Base: *Operators committed to reducing emissions who know their fleet's RUC classes (n=74), each group (see chart for base sizes).* ****Caution: Small number of respondents in this group.***

APPENDIX 3

Fieldwork materials

GAME CHANGERS

Qualitative interviews recruitment email

Request for participants to take part in Ministry of Transport fleet purchasing research project

We are living in changeable times, and you will no doubt be aware of the changing times ahead as the world transitions to low-emission vehicles, including electric and hydrogen-powered heavy vehicles.

With these changes in mind, all three Industry Associations are assisting Ministry of Transport as they seek to learn more about how operators like you are currently making key decisions such as truck replacement.

To help them, The Ministry has commissioned the independent market research company Ipsos to research road transport businesses throughout New Zealand.

Ipsos is now seeking to identify people who are the key decision-makers on vehicle purchasing, so they can participate in paid interviews.

If you are interested in participating in this study and you are a key decision-maker on your company's vehicle purchasing, please click the link below to answer a few short questions so that Ipsos can contact those who match their target research group (please note, not all respondents to the on-line form will be contacted because Ipsos is seeking a survey group that reflects the diverse activities of the transport industry).

Those people selected for the research will be interviewed online or by phone and that will take 45-60 minutes each. The interviews will be confidential to Ipsos and participants will be paid $125 as a token of appreciation, which we can donate to a charity of your choice if desired.

If you are interested in participating in this study, please click the link below to answer a few quick questions please click the link below, and do this by Wednesday 18th October.

<LINK>

Thanks in advance for your consideration, your input will certainly be appreciated.

Dom Kalasih, Interim CEO Ia Ara Aotearoa Transporting New Zealand
James Smith, GM Policy & Advocacy, National Road Carriers Association
XXXXXXXXX, NZ Trucking Association

Qualitative interviews discussion guide (pages 1–3)

Ipsos

23-067775-01 MOT HV Operator Understanding - Discussion Guide
Final version 31.10.23

Job No:	23-067775-01	**Type:**	In-depth interview
Job Name:	MOT HV Operator Understanding	**#:**	40 x 1 hour interview

Purpose of this Document:

- Interviews will be conducted with fleet managers and others who have decision-making influence over the types of heavy vehicles their company purchases or leases
- This qualitative component will explore all the contributing factors towards heavy vehicle selection and collect opinions and attitudes towards factors that can promote the use of low-emission options.

Research Questions:

- Understanding how heavy vehicles are selected for purchase or lease; the processes gone through and factors considered so that MOT can learn how to encourage lower levels of vehicle emissions from within the sector.
-

Discussion Flow
Outline the various sections and the timings of each (make sure they match the document)

- Warm up: yourself and business (~10 MINS)
- Fleet / vehicle management (~10 MINS)
- Vehicle-selection process and factors (30 MINS)
- Consideration and use of Low-Emission Vehicles (~10 MINS)
- WRAP UP (~5 MINS)

Introduction

Thank you for giving up your time to talk to me today. My name is xxx and I work for a research company called Ipsos.

Today we are going to talk about your responsibility for managing a vehicle fleet, the business that you work for and the processes and factors that you consider when acquiring new vehicles for the business.

This is just a general conversation, but I do have a list of things that we need to cover and we only have 60 minutes to get through it. If we wander off topic, you'll have to forgive me if I interrupt in order to get us back on track!

Remember today is all about you, what you think. We don't all think the same way, so anything you tell us will be very valuable. I have a recorder here so that I don't miss anything. Is that ok with you?

Everything you say will remain anonymous. If you would like to take a break at any point, or do not feel comfortable answering any question that is perfectly alright. Do you have any questions before we get underway?

Warm up: Yourself and business (10 MINS)

***Objective:** Getting to know the participant and their background*

I'd like to start by getting to know a little bit about you.

- Tell me about yourself and the business - what is your role in the business? How long have you been doing that?
- In the recruitment survey you indicated that your business is in the XXXX sector. Can you tell us more about what that involves...? What are the key things that the business offers?
  - PROBE FOR THEIR BUSINESS MODEL - E.G. FULL END TO END LOGISTICS? COMPLEX GOODS, E.G. HAZMAT OR EXPORT / IMPORT / TIME-SENSITIVE? ETC?
  - PROBE FOR THEIR BUSINESS'S OPERATIONAL MODEL, E.G. ON-DEMAND WORK, LONG-TERM CONTRACTS, PART OF BIGGER OPERATION E.G. SUPERMARKET COMPANY?
- How long has the company been in operation for?
- The last few years have been really disruptive for businesses, with Covid, recession, fuel price rises etc. How would you describe the current position of the company? PROBE FOR REASONS BEHIND CURRENT POSITION
  - What are the business' future goals?
    NB COMPANY MAY NOT BE SPECIFICALLY A TRUCK COMPANY E.G. COULD BE A SUPERMARKET GIANT – SO BRING THE CONVERSATION BACK TO THE IMPLICATIONS FOR THE FLEET MANAGER.
  - Current or anticipated challenges? Current or anticipated opportunities?
- How does the business plan for its future? E.g. what types of financial modelling, forecasting etc are done?
  - HOW DOES THE TRUCK FLEET FACTOR INTO THIS?

Fleet / vehicle management (15 MINS)

***Objective:** This section is designed to get an understanding of the current situation in each company.*

Thanks for that. Now I'd like you to tell me about the company's fleet.

- What type of trucks are used? KEEP THIS GENERAL, TO SEE HOW THEY INITIALLY CONCEPTUALISE THEIR FLEET
- What types of trips do they go on? Average annual truck distances?
- You've said that XXX type of freight is normally transported, what are the differences or aspects about that type of transportation that differ from other freight types?
- Thinking now about the truck types -
  - How many tractor-trailer units does the business have? (OTHER TERMS THEY MAY USE ARE PRIME MOVERS OR COMBINATION VEHICLES)
  - How many Rigid trucks that are usually used without trailers?
  - How many Rigid trucks that are usually used with trailers?
  - Any other categories or truck types I've missed? What?
- What about your drivers? Are they all on the same class of license or do you have a mix?
  PROBE FOR HOW MANY WITH EACH LICENSE TYPE AND WHY THEY DO / DO NOT HAVE A MIX
  - 1
  - 2
  - 3
  - 4
  - 5

Qualitative interviews discussion guide (pages 4–6)

TRY TO MAP OUT THEIR FLEET USING THE TABLE BELOW –
RECORD HOW MANY IN WHATEVER CLSSES THEY USE / COME OUT OF YOUR PROBING

Vehicle class	Driver licence class	Combination vehicle (GCW) Gross Combined Weight = The sum of the GLWs of the vehicles that make up a combination vehicle	Rigid trucks (GLW) = Gross Laden weight; the weight of a vehicle together with any load it is carrying.	Modelling GVM groups	Notes from MOT	Interviewer notes
NB A goods vehicle that has a gross vehicle mass exceeding 3.5 tonnes but not exceeding 12 tonnes.	1	Up to 6t	Up to 6t	3.5-7.5t	○ number below 3.5t ○ number above 3.5t	
NB A goods vehicle that has a gross vehicle mass exceeding 3.5 tonnes but not exceeding 12 tonnes.	2	6t to 12t	6t-18t	3.5-7.5t 7.5t-10t 10t-20t	Need to know: ○ combination vehicle ○ rigid trucks For rigid trucks: ○ GVM below 10t ? ○ GVM above 10t ?	
NC	3	10t-20t & 20t-25t	N/A	10t-20t 20t-25t	○ number below 20t ○ number above 20t	
NC	4	N/A	18t+	10t-20t 20t-25t 25t-30t 30t+	Try to assess number above and below 30t, or <>25t	
NC	5	25t+	N/A	25t-30t 30t+		

- Does the business generally own or lease its trucks? Why?
  - How many are leased and how many are owned?
    - What are the pros and cons of each option?
  - Do you have any specific relationships with suppliers that influence your truck choices?
    - PROBE IF YES AS TO: WHAT THESE ARE
    - AND IF THEIR PREFERRED SUPPLIERS PROMOTE EFFICIENCY

- What about staff? Does the company use contractors who supply their own vehicles?
  - IF NO: WHY? What are the advantages of employing over contracting?
    - THIS IS MAINLY TO BE ASKED IN THE CONTEXT OF CONTRACTORS SUPPLYING THEIR OWN TRUCKS.
  - IF YES: Why? Do you have specific vehicle requirements that contractors must meet?
    - What are these?
    - Do you give vehicle purchase advice to your contractors?
      PROBE IF YES INTO FUEL TYPES / BRANDS / TRUCK TYPES
    - Do you help your contractors in other ways e.g. helping them apply for credit?

- And generally, how old is the fleet?
  - How frequently do you replace vehicles? Is it ad hoc or on a more regular basis?
  - What tends to trigger replacement?
  - Do you undertake audits to optimise your fleets? E.g. analysis of the work your business or fleet is doing so you can look for better ways of doing it?
  - If so, how regularly?

- Are modifications sometimes done to delay full replacement? What types and why?

- How does the day-to-day management of the vehicles get done? (i.e. repairs, maintenance and improvements).
  - In-house? Why?
  - Contracted out? Why?

- I know that most trucks in New Zealand run on diesel, but some transportation businesses may also have other types of vehicles that use different fuels. So of the vehicles that the company owns / leases, how are these fuelled?
  - Do you have any purely electric or hybrid trucks?
    - How come you have these <FUEL TYPE> vehicles in the fleet? KEEP BRIEF, MORE DETAILED QUESTIONING WILL FOLLOW
  - I know it's very early days yet for hydrogen trucks in New Zealand but I have to ask if you have any?
    - IF YES: you're obviously early adopters, what led to you getting a hydrogen truck?

Vehicle-selection process and factors (30 MINS)

***Objective:** This section is designed to gain an idea of the factors fleet managers take into consideration when selecting a new truck and the decision-making process taken*

For the next part of this interview I'd like to spend some time discussing the process you go through when planning your next truck purchase. Different businesses have different processes and priorities, and so how the options are considered is of key interest.

- When you have to make a decision on purchasing or leasing a new truck, how established and formal is the process that is taken?
  - PROBE – WHERE ARE THEY ON THE RANGE...

Very pre-set / formal / process-driven procurement with set criteria, requirements etc ⟷ Very casual, informal

- What happens first? What triggers the process to start?

- So now please tell me about the steps that your company goes through as part of purchasing or leasing a vehicle...

- Walk through the process with them, covering the steps that are taken and:
  - The factors that are considered at each step and how important they are
  - Information sources
    - PROBE: HOW EASILY CAN THEY ACCESS AND USE INFORMATION AVAILABLE RE: EACH FACTOR? WHERE DO THEY GET THE INFO FROM?
  - Influencing players and key decision makers E.g.
    - manufacturers, customers, business-partnerships, drivers, accountants or other experts etc
  - Do you have to help evaluate issues such as truck purchases / ownership models / efficiency gains / total ownership costs?
    - IF YES, WHO FROM
  - What role (if any) do efficiency fleet tracking telematics provided by suppliers like EROAD, Teletrac, TrackIt and others play in this process?
  - Is this an enjoyable process or difficult and disliked? Why? What factors make it good / bad?

INTERVIEWER TO TICK OFF EACH FACTOR AS IT IS MENTIONED (FOR LATER REFERENCE):

Qualitative interviews discussion guide (pages 7–9)

• Engine size/power/torque	• Brand
• Supplier discounts	• Driver preferences
• Past experience / comfort in what's tried and tested	• Financial modelling expertise
• Driver licensing re: truck weight *(NB THE HEAVIEST TRUCK THAT CAN BE DRIVEN ON A STANDARD CAR LICENCE (CLASS 1) IS 6 TONNES, ABOVE THAT YOU NEED A CLASS 2 LICENCE.*	• Typical trip profiles (what factors, e.g. topography, stop/ start, distances, 2-driver shifts, km per trip, hours per day, road type, ferries, bridges urban / rural etc)
• Current / legacy regulations e.g. VDAM, RUC & GVM settings	• Financing options (e.g. high-capex-low-opex or vice versa)
• Model choices / Fit for purpose? On what factors? E.g. chilled, containerised, bulk goods, capacity, hazmat etc	• Availability – lead time
• Intangibles e.g. carbon emissions, road wear etc	• Maintenance – in-house capabilities
• Fuelling infrastructure / refuelling speed o in-house / on-premises o on the road	• Total cost of ownership calculations o Are they done? Why / why not? o How? Tools / calculators used? Which?
• Resale value – market demand / ease of selling	• Fuel efficiency
• Managing a truck's place within routes and other vehicles in the fleet	• Capital / finance access and lender requirements
• Debt / loan servicing / cashflow	• Government interventions / subsidies
• Fuel costs and future predictability	• Fuel type
• Future technology (early adopter vs wait & see?)	• Price
• External expectations e.g. from clients or customers	• Depreciation rates / tax rates
• Need for driver training / upskilling	• Emissions

OK, thinking about the factors you've discussed, there are some you haven't mentioned, perhaps because they are not relevant, important, or maybe just overlooked as we discussed your selection process. I'll go through these now, please let me know how these fit within the decision-making process, if at all.

PROMPT AND PROBE EACH FACTOR IN TABLE NOT ALREADY MENTIONED.

Consideration and use of Low-Emission Vehicles (10 MINS)

***Objective:** Once moderators have a good understanding of the business, the process of purchasing a new vehicle and where the manager fits in, then we can dive into how HEVs perform within current purchase selection processes and criteria*

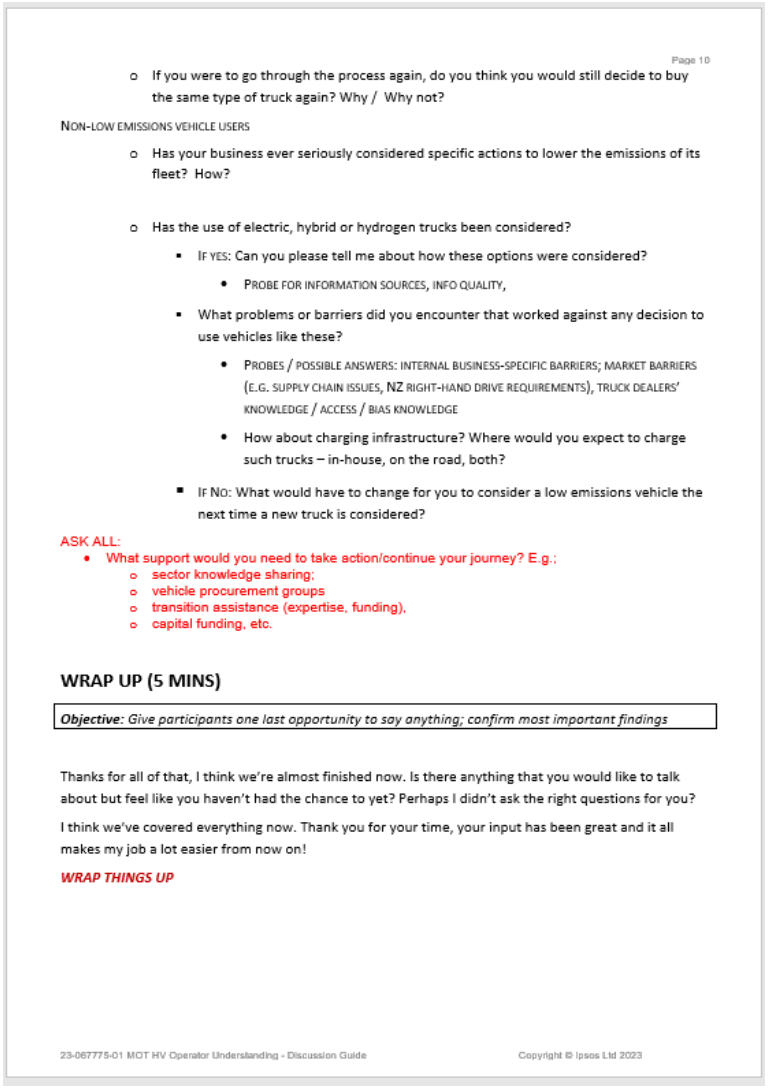
Thanks for giving me such good information so far.

Now I'd like us to talk about low-emission vehicles and your perceptions of these vehicles for businesses like yours. When 'low emission vehicles' are discussed, what types of vehicles come to mind for you?

ADD IF NECESSARY – Low emission vehicles are those that are fully or partly powered by electric batteries or hydrogen.

- What comes to mind when you think of using such vehicles in heavy transport businesses like yours? Pros? Cons? Barriers to uptake?
-
- PROBES: UPFRONT COSTS VERSUS ONGOING COST SAVINGS (FUEL AND MAINTENANCE) VS. DIESEL How well informed do you feel you are about these types of vehicles?
  - Where have you got your information on these from?
  - What extra information would you like to have when thinking about using them in your business? What are the big questions that remained unanswered for you?
- How would you describe your company's stance on these vehicles and their future usage in your fleet?
- What actions, if any, have you taken to reduce the emissions of your fleet? E.g.:
  - set emissions reduction targets;
  - built a fleet transition plan to decarbonise/reduce emissions;
  - emissions reporting;
  - purchased/ing electric or hydrogen vehicles;
  - joined a sector/industry group etc
- CURRENT LOW EMISSIONS VEHICLE USERS:
  - What led to your company's selection of the low emission vehicles it now uses? What were the factors that were most influential in the eventual decision to get a low emission vehicle(s)?
  - What role (if any) did the total cost of ownership factor into your decision to use a low emissions vehicle?
  - Were there any frustrations or challenges in the decision-making process leading up to the decision? What were these? How could they be overcome or improved in the future?
  - Were there any big trade-offs? What?
  - Are you monitoring their performance in any special way to see how well they are performing? What factors are you monitoring? What are the key things you're looking for to support buying more?
  - IF NOT ALREADY MENTIONED, ASK ABOUT CHARGING BEHAVIOUR – WHEN / WHERE CHARGED; DO THEY HAVE IN-HOUSE CHARGING FACILITIES; ARE THEY RELIANT ON ON-ROAD CHARGERS?

Qualitative interviews discussion guide (page 10)



- If you were to go through the process again, do you think you would still decide to buy the same type of truck again? Why / Why not?

NON-LOW EMISSIONS VEHICLE USERS

- Has your business ever seriously considered specific actions to lower the emissions of its fleet? How?

- Has the use of electric, hybrid or hydrogen trucks been considered?
  - IF YES: Can you please tell me about how these options were considered?
    - PROBE FOR INFORMATION SOURCES, INFO QUALITY,
  - What problems or barriers did you encounter that worked against any decision to use vehicles like these?
    - PROBES / POSSIBLE ANSWERS: INTERNAL BUSINESS-SPECIFIC BARRIERS; MARKET BARRIERS (E.G. SUPPLY CHAIN ISSUES, NZ RIGHT-HAND DRIVE REQUIREMENTS), TRUCK DEALERS' KNOWLEDGE / ACCESS / BIAS KNOWLEDGE
    - How about charging infrastructure? Where would you expect to charge such trucks – in-house, on the road, both?
  - IF NO: What would have to change for you to consider a low emissions vehicle the next time a new truck is considered?

ASK ALL:
- What support would you need to take action/continue your journey? E.g.:
  - sector knowledge sharing;
  - vehicle procurement groups
  - transition assistance (expertise, funding),
  - capital funding, etc.

WRAP UP (5 MINS)

Objective: *Give participants one last opportunity to say anything; confirm most important findings*

Thanks for all of that, I think we're almost finished now. Is there anything that you would like to talk about but feel like you haven't had the chance to yet? Perhaps I didn't ask the right questions for you?

I think we've covered everything now. Thank you for your time, your input has been great and it all makes my job a lot easier from now on!

WRAP THINGS UP

Quantitative survey invitation email

Heavy Vehicle Purchasing Research Project – Interview with Ipsos - Quantitative

Hi [name],

As a key decision-maker on your company's vehicle purchasing, you have been invited to participate in a survey for a heavy vehicle purchasing research project that Ipsos is conducting for the Ministry of Transport.

The survey should take approximately 15 minutes to complete, and you will be able to enter a prize draw to win one of 10 $100 Prezzie Cards. You will have until the 19th of January 2024 to complete the survey.

Your personal information will be confidential to Ipsos only, and any responses used in the final report to the Ministry of Transport will be anonymised. If you are not involved in the process of research or decision making on which trucks and heavy vehicles to add to your fleet, please feel free to forward this survey link to anyone in your organisation who is qualified to answer these questions.

To complete the survey, please follow this link:
[https://online.ipsosinteractive.com/mriweb/mriweb.dll?i.project=S23055399&ID=&i.user9=1]

If you would prefer to complete the survey over the telephone, you can do so here
[https://online.ipsosinteractive.com/mriweb/mriweb.dll?i.project=S23054323&ID=&i.user9=1
], however it may take longer (up to an hour) to complete over the phone.

If you have any questions at all about this research, you can contact Ipsos at Jonathan.Dodd@ipsos-online.com

Thank you in advance for your help with this research.

Best,

[Name]

Quantitative survey questionnaire (pages 1–3)

23-067775-01 MOT HV Operator Understanding – Questionnaire

Job No:	23-067775-01	**Type:**	Quant online CATI questionnaire, maximum 15 minutes duration
Job Name:	MOT HV Operator Understanding		

Background
This research aims to help Te Manatū Waka to develop an understanding of the operational and financing decisions heavy road vehicle operators face when deciding what vehicles to use. We seek to understand what factors contribute to these decisions and to what extent those factors are pros or cons for moving to zero- and low-emissions options. This understanding is intended to help inform modelling around how different policy decisions might affect zero- and low-emissions heavy vehicle uptake. In turn this will help inform policy design around providing incentives or removing barriers to zero and low emissions vehicle uptake in the heavy fleet.

Information needs
While we understand all this at a very high level, we do not have a good understanding of:

- the types of **operating and financing models** heavy road vehicle operators work within, and how these models work
- how different operating and financing models might differ based on the **type of vehicles operators use (vehicle body type and motive power)** or how different operating and financing models affect vehicle choice
- which operators (and/or operating models) are the ones who are purchasing vehicles at first point of import, and how they are making decisions on what vehicles they purchase
- which operators (and/or operating models) are leasing vehicles, and what operational and financial factors are at play in this decision
- how leasing providers decide what types of vehicles to offer
- what impact a **lower purchase price, operating subsidy, or alternative financing arrangement** (such as a low-interest loan) would have on the above decisions
- whether different operating models have different strengths and weaknesses in facing the barriers to adopting zero- and low-emissions vehicles

At its core, we are interested in filling information gaps **about how operators acquire and replace their vehicles, structure related financing, the influence of any contractual arrangements they work within,** and the timeframes they care about so as to better understand how a policy change might play out for those operators.

The main purpose of this research is to better understand how different heavy vehicle operators make decisions around vehicles purchases. This research will contribute to the evidence base for the development of policies to support the freight sector to decarbonise and transition to zero- and low-emissions vehicles.

The **research objectives** are to understand:

- in detail the different operating and financing models within which heavy road vehicle operators work
- the characteristics of heavy road vehicle operators who act in each of these different operating models, and the vehicles they have so that we can apply assumptions about operations appropriately in our models based off these characteristics
- which operators (and/or operating models) make a vehicle purchasing or leasing decision, who within this group purchase or lease vehicles at first point of import
- what operational and financial factors are at play in purchasing or leasing vehicle decisions, for both operators and leasing providers
- what impact a lower purchase price, operating subsidy, or alternative financing arrangement (such as a low-interest loan) would have on the above decisions
- the barriers to acquiring zero- and low-emissions vehicles in fleets faced by specific operators / operating models, and whether different operating models have different strengths and weaknesses in facing these barriers

First page – Introduction

ONLINE Introduction

Thanks very much for clicking through to this survey. Transitioning to low-emission heavy vehicles will help the freight sector to reduce greenhouse gas emissions. This research aims to help the Ministry of Transport understand the best way of helping businesses like yours with this transition.

Because this is so important, *Ia Ara Aotearoa Transporting New Zealand*, the *National Road Carriers Association NZ*, and the *New Zealand Trucking Association* have all agreed to send this survey invitation to key people like yourself, so that your business operations can be considered as new policies are developed. If you have received more than one invitation to this survey, you are asked to complete only one.

The questionnaire should take around 15 minutes to complete at most and at the end you will be able to enter a draw to win one of ten $100 Prezzie Cards.

Feedback or comments can be sent to Jonathan.Dodd@ipsos-online.com

Please ensure that you have allowed enough time to answer the survey in full before you begin.

To participate in this study, please click the link below.

If you would prefer to answer the survey over the phone please click here [REDIRECT LINK TO CATI REQUEST SURVEY] to provide your contact details.

CATI Introduction

Good morning / afternoon. My name is _____ calling from Ipsos (an independent market research company) on behalf of the Ministry of Transport.

May I speak with <named contact>?

I am calling because you were sent [by INSERT SENDING ORGANISATION AS INDICATED BY LINK] an email inviting you to do an online survey about transitioning to low-emission vehicles and you indicted that you would prefer to do it over the phone.
Thanks again for [agreeing to participate] this survey. Doing this by phone will take longer than online so your time is even more appreciated.
Just a reminder that nothing that you say today will be shared with the Ministry of Transport in any way that would identify you or your business, your data will only be analysed as part of the larger survey of respondents to this survey. You are also free to stop the interview at any time, or to have us call you back later in if we are interrupted.
Just a reminder that you will be given the option to enter a draw to win one of ten $100 Prezzie Cards.

The survey will take about 60 minutes – would now be a good time or is there a better time and day to call you back?
[CONTINUE OR MAKE AN APPOINTMENT]

[IF RESPONDENT SAYS THAT THEY WOULD PREFER TO DO THE SURVEY ONLINE READ OUT BELOW & RECORD CALL OUTCOME AS TRANSFER TO WEB]

Thanks for letting us know, you will be able to access the link to the online survey in the initial invitation you received. There will also be a reminder email at a later date through which you can access the survey.

[OTHERWISE CONTINUE]

Please note that my supervisor may be monitoring the call and the call is being recorded for training purposes. Is that ok? [IF NO, CANCEL INTERVIEW].

START SURVEY - OPEN ONLINE LINK

Screener

S1. To begin, which of the following best describes your role in researching what heavy vehicles to add to your fleet? These can be new or used, bought or leased. SINGLE CHOICE

I do all / most of the research and make the final decision	1	CONTINUE
I do all / most of the research and make my recommendations for others to decide upon	2	CONTINUE
I help with the research but others make the recommendations and decisions	3	CONTINUE
I help make the final decisions based on the research and recommendations that others make	4	CONTINUE
I'm not involved in the new vehicle selection process at all	5	SKIP TO MESSAGE EXPLAINING HOW THEY ARE NOT ELIGIBLE BUT ASKING THEM TO FORWARD THE EMAIL TO SOMEONE WHO IS.

SCREENOUT MESSAGE

Thank you for taking the time to answer this survey.

Unfortunately, we are currently looking for responses from people involved in vehicle selection, lease and purchase, so you do not qualify for this survey.

We would be grateful if you would forward the survey invitation email to someone in your organisation who is involved in vehicle selection.

Note: *This online questionnaire script was adapted for cases where respondents might prefer to be interviewed by phone. Red text indicates additional script that was provided for phone interviewers.*

Quantitative survey questionnaire (pages 4–6)

Prize Draw permissions

P1 Participants who complete this survey can be entered into a prize draw to win one of ten $100 Prezzie Cards.

Ipsos will contact prize draw winners via email after 5 February 2024, do you consent to being entered in the prize draw?

I would like to be included in the prize draw after completing the survey and Ipsos has permission to contact me via email about the prize draw	1	CONTINUE
I would like to complete the survey, but do not consent to being entered into the prize draw	2	CONTINUE
I do not wish to complete the survey	3	THANK AND CLOSE

ASK ALL AGREEING TO BE IN PRIZE DRAW (P1 = 1)

QEMAIL Thank you for participating in this research. Ipsos will conduct a prize draw for ten $100 Prezzie Cards in the week commencing 5 February 2024. Winners will be notified via email.

Please let us know the email address that you would prefer to be contacted on to be notified about the prize draw

OPEN ENDED FIELD

ASK ALL ONLINE ONLY

We hope that you are able to complete the survey in one go, but understand that you may need to pause the survey at some point and return later.

If you need to do so, please use the link below to re-open the survey and **not** the link included in the invitation email. This will ensure that you can return to the survey at the point you last reached, rather than starting from the beginning again.

We recommend copying the link below now, but it will be available at the bottom of the page for every question that you answer.

[UNIQUE LINK FOR RESPONDENT]

INTRO

That's great, you're eligible for this survey. Let's warm up the engine with a quick question about you.

Q3 ASK ALL

Firstly, how would you describe your approach to adopting new ideas, technologies, or trends?
SINGLE CHOICE

I am always eager to try new things before most people do. I love being the first to explore new trends or technology	1
I am open to new ideas and usually adopt them before the majority, but I am not necessarily the first one to try them	2
I typically wait until most people have tried something new before I decide to adopt it. This way, I can see if it's worthwhile and beneficial	3

Fleet Profile

OK we're rolling now! Next, we need to know more about your business and your heavy transport fleet, which includes both the vehicles your business owns and the ones that it leases. We know it can be tricky to try and fit into certain boxes so please just try to answer as best you can.

Q6 Which of the following types of freight does your truck fleet usually carry?
MULTIPLE CHOICE

Bulk liquid, e.g. milk, wine, fuel, etc.	1
Bulk pourable materials, e.g. aggregate, fertiliser, grain, coal, etc.	2
Livestock	3
Forestry (e.g. unfinished logs)	4
Bulk solid materials, e.g. building / construction / manufacturing products	5
Freight – speciality, e.g. chilled, car transporters, house removals, etc.	6
Freight – containers / reefers	7
Freight – general goods, e.g. retail merchandise, couriers	9
Food service	10
Don't normally carry freight (e.g. traffic management)	11
Something else (please tell us what): _____	96

Q5 Where does your business have offices / depots?
SINGLE CHOICE

Just the North Island	1
Just the South Island	2
Nationwide	3

Q7 What kind of trips represent the majority of your truck fleet's mileage?
SINGLE CHOICE

Urban short-haul, e.g. around a city	1
Provincial, e.g. around a region	2
Long-haul, e.g. across the North / South Islands / both	3

Q8 Which of the following types of trips does your truck fleet usually do?
MULTIPLE CHOICE

Set routes and timetables, with little variation	1
A changing variety of set routes	2
Nearly all ad hoc, with routes varying from job to job	3

Q33 Which of the following best describes your business' management of your fleet and drivers?
SINGLE CHOICE

Most drivers are employees and we own / lease most of the trucks	1
Most drivers are contractors and we provide their trucks	2
Most drivers are contractors and they provide their trucks	3
Most drivers are franchisees and they provide their trucks	4
Another way (please tell us what): _____	96

ASK IF BUSINESS IS PROVIDING TRUCKS (Q33 =1,2 OR 96)

Q10

[IF ONLINE SCRIPT] Approximately how many of each type of truck does your business operate? If you are not sure, please give your best estimate.

Enter zero for any vehicle types that you do not own or lease. If you are unable to estimate how many vehicles own/lease in a category, you can leave that box blank

[IF CATI SCRIPT] We'd like to get a sense of the types of vehicle your business operates, we will now ask about vehicles owned and leased.

Approximately how many of each type of truck does your business own?

INTERVIEWER INSTRUCTION: please read out each truck type and enter value given by respondent. If respondent indicates that no trucks are owned, enter zero for each row and proceed to vehicles leased. If respondent does not know how many trucks they own in that category, please prompt for best estimate, but leave that box blank if they cannot estimate.

And approximately how many of each type of truck are leased by your business?

INTERVIEWER INSTRUCTION: please read out each truck type and enter value given by respondent. If respondent indicates that no trucks are leased, enter zero for each row. If respondent does not know how many trucks they lease in that category, please prompt for best estimate, but leave that box blank if they cannot estimate.

[FOR BOTH ONLINE AND CATI] *please include powered vehicles only*

GRID QUESTION, NUMERIC FIELD FOR EACH COLUMN/ROW, RANGE 0-..

		_1 Approx number owned	_2 Approx number leased
1	Tractor-trailer units		
2	Rigid trucks that are not used with trailers		
3	Rigid trucks that are usually used with trailers		

ASK IF BUSINESS IS PROVIDING TRUCKS (Q33 =1,2 OR 96)

Q11–

Thinking about the powered vehicles that you mentioned, how many do you have in each of the following RUC classes? If you are not sure, please give your best estimate.

Note: *This online questionnaire script was adapted for cases where respondents might prefer to be interviewed by phone. Red text indicates additional script that was provided for phone interviewers.*

Quantitative survey questionnaire (pages 7–9)

If you have no vehicles in a RUC class, please enter zero. If you are unable to estimate how many vehicles you operate in a RUC, you can leave that box blank

INTERVIEWER INSTRUCTION: please read out each truck type and enter value given by respondent. If respondent does not know how many trucks they operate in that category, please prompt for best estimate, but leave that box blank if they cannot estimate.

		NUMERIC FIELD RANGE 0-..
1	RUC Class 1	
2	RUC Class 2	
3	RUC Class 6	
4	RUC Class 14	
5	RUC Class 19	
6	RUC Class 308	
7	RUC Class 408	
8	RUC Class 309	
9	High Productivity Motor Vehicle (HPMV) or H type	

Business profile

Q15 Does your business only focus on transportation or does it do other things as well (e.g. manufacturing, retail, construction, etc.)?
SINGLE CHOICE

Just transportation	1
We do other things within the business as well	2
We are part of a larger business that does other things	3

Q16 Which of the following ~~best~~ describes how the transportation side of your business operates?
MULTIPLE CHOICE EXCEPT FOR 96

We're part of a larger business and just operate as a division that moves company product	1
We work directly with our external customers, mostly using long-term contracts	2
We work directly with our external customers, mostly using short-term contracts / on-demand	3
Something else (please tell us what): _____	96

Q22 Which, if any, of the following make planning for the future of the business especially difficult?
MULTIPLE CHOICE EXCEPT FOR 97, RANDOMISE, ANCHOR 96 AND 97

Currency fluctuations / strength of the dollar	1
Interest rates	2
Government policy changes, including changes to regulations (e.g. RUC changes)	3
Customer demands	4
Climate / weather events / road closures	5
Driver retention / attraction	6
Increased operating costs (e.g. from fuel costs/wages)	7
General strength of the market	8
Supply chain delays	9
Pricing strategies from competitors	10
Something else (please tell us what): _____	96
Nothing	97

Fleet / vehicle management

Q30 How does the day-to-day maintenance of your business' trucks get done?
SINGLE CHOICE

In-house workshop staff do it all	1
In-house workshop staff do some maintenance work, but the rest has to be done elsewhere	2
It's all contracted out / done by another company, off site	3

Q31 ASK LEASERS (Q10_2 > 0 FOR ANY OF ROWS _1 TO _96)
You have indicated you lease some of your trucks. What are the reasons why you have leased these vehicles instead of buying them?
MULTIPLE CHOICE, RANDOMISE, ANCHOR 96/99, CODE 99 EXCLUSIVE

To meet short-term needs	1
Is financially better for us than buying outright	2
Only way to get a certain type of truck	3
Is easier to manage, e.g. no need to sell old trucks	4
Only way to get the necessary finance	5
Don't want to buy a vehicle that will need to be replaced later once it is out of date	6
Another reason (please tell us what): _____	96
Don't know	99

Q32 ASK BUYERS (Q10_1 > 0 FOR ANY OF ROWS _1 TO _96)
You have indicated you buy some of your trucks rather than lease them. What are the reasons why you have chosen to buy instead of lease these vehicles?
MULTIPLE CHOICE, RANDOMISE, ANCHOR 96/99, CODE 99 EXCLUSIVE

To meet short-term needs	1
Is financially better for us than leasing	2
Only way to get a certain type of truck	3
Is easier to manage, e.g. no need to meet leasing requirements	4
Retain the option to sell them if necessary	5
Ability to make modifications to the truck (e.g. add a new crane/technology)	6
Another reason (please tell us what): _____	96
Don't know	99

Note: *This online questionnaire script was adapted for cases where respondents might prefer to be interviewed by phone. Red text indicates additional script that was provided for phone interviewers.*

Quantitative survey questionnaire (pages 10–12)

Q34 ASK THOSE USING TRUCK-SUPPLYING CONTRACTORS (Q33 = 3 OR 4)
What are the main reasons why your business chooses to use contractors who provide their own trucks?
MULTIPLE CHOICE, RANDOMISE, ANCHOR 99/96

Cheaper to use contractors than employees	1
Easier to manage staffing when using contractors (e.g. to manage work fluctuations)	2
Cheaper than running our own fleet of trucks, e.g. financing and maintenance costs	3
Easier than running our own fleet of trucks, e.g. financing and maintenance issues	4
The people we want are only available as contractors	5
Only way to access certain types of truck	6
Contractors have less ongoing HR requirements (e.g. management/salaries)	7
Unsure	99
Another reason (please tell us what): _____	96

Q35 ASK THOSE USING TRUCK-SUPPLYING CONTRACTORS (Q33 = 4)
Which of the following best describes how you manage your contractors' vehicle usage?
SINGLE CHOICE

We specify what type of vehicles to use and we help the contractors get what they need (e.g. provide info and supplier connections)	1
We specify what type of vehicles to use and we help the contractors buy what they need (e.g. providing financing, credit, leasing or other financial arrangements)	2
We specify what type of vehicles to use and it's up to the contractors to get them	3
Another way (please tell us what): _____	96

Q36 ASK ALL

Which, if any of the following sources does your organisation use to keep up with technological innovations in vehicles?

MULTICODE, RANDOMISE, ANCHOR 96

Industry associations or business network organisations	1
Government information e.g. from EECA or Ministry of Transport	2
Social media accounts	3
Suppliers / dealers / manufacturers	4
Other management staff in the business	5
Drivers	6
Mechanics	7
Friends / people I know in other companies	8
General industry reviews and articles I read (e.g. in magazines)	9
Other (please tell us what)	96

Vehicle-selection process and factors

Q40 [ONLINE] Approximately how many trucks do you anticipate buying over the next 2-3 years?

Enter zero for any types of vehicle that you don't intend to buy. If you are unable to estimate how many vehicles you will buy in a category, you can leave that box blank

[IF CATI SCRIPT] Approximately how many new trucks do you anticipate buying over the next 2-3 years?

INTERVIEWER INSTRUCTION: please enter value given by respondent for "new". Enter zero for this category if respondent indicates no intention to buy in this period, if respondent does not know, probe for best estimate. If they really cannot answer, leave this box blank.

And approximately how many used trucks do you anticipate buying-over the same period?

INTERVIEWER INSTRUCTION: please enter value given by respondent for "used". Enter zero for this category if respondent indicates no intention to buy in this period, if respondent does not know, probe for best estimate. If they really cannot answer, leave this box blank.

		1. New	2. Used
	NUMERICAL FIELD, RANGE 0-..		

ASK ALL

Q40_LEASE And Which of the following applies to your intended truck leasing in the next 2-3 years?

SINGLE CODE

We intend to lease more trucks than we currently do [ONLY SHOW IF CURRENTLY LEASING VEHICLES (Q10_2 <0 FOR ANY ROW)]	1
We intend to continue leasing about the same amount of trucks as we currently do [ONLY SHOW IF CURRENTLY LEASING VEHICLES (Q10_2 <0 FOR ANY ROW)]	2
We intend to lease fewer trucks than we currently do [ONLY SHOW IF CURRENTLY LEASING VEHICLES (Q10_2 <0 FOR ANY ROW)]	3
We intend to start leasing some vehicles in the next 2-3 years [ONLY SHOW IF NOT LEASING VEHICLES (Q10_2 =0 FOR ALL ROWS)]	4
We have no plans to start leasing any vehicles in this time [ONLY SHOW IF NOT LEASING VEHICLES (Q10_2 =0 FOR ALL ROWS)]	5
Don't know/unsure	97

Q41 Regardless of whether they are new, used, bought or leased, what factors generally lead to getting a new truck?
MULTIPLE CHOICE, RANDOMISE, ANCHOR CODE 96 TO BOTTOM

Mileage of truck(s) currently in the fleet	1
Condition / repairs / maintenance needs of current truck(s)	2
Changing business needs, e.g. needing new types of truck	3
Business growth, needing more trucks overall	4
Improving business financials, e.g. reducing overheads or fuel costs	5
Attracting / retaining drivers	6
Availability of finance / good rates	7
Available cash reserves to buy	8
Need to improve fuel efficiency/emissions	9
Other reasons (please tell us what):	96

Q42 ASK IF MILEAGE A FACTOR (Q41 = 1)
At what mileage do you usually replace a truck or put it onto lighter duties?
SINGLE CHOICE

Less than 500,000km	1
500,000–750,000 km	2
750,000–1 million km	3
1 million–1.5 million km	4
More than 1.5 million km	5
Don't know	97

Q43 Thinking about your normal process of evaluating what truck(s) to buy or lease, how formal is the process you usually go through?

[IF CATI] Please answer on a scale of 1 to 5 where 1 means "Very casual, informal, just looking around and using what's in your head and gut instinct" and 5 means "Very formal procurement process with set criteria, requirements, spreadsheets, business plans, etc."
SCALE-BASED QUESTION, USE SLIDER, RANGE 1 - 5

Very casual, informal, just looking around and using what's in my head and gut instinct	SLIDER SCALE ←→	Very formal procurement process with set criteria, requirements, spreadsheets, business plans, etc.
1		5

Note: *This online questionnaire script was adapted for cases where respondents might prefer to be interviewed by phone. Red text indicates additional script that was provided for phone interviewers.*

Quantitative survey questionnaire (pages 13–15)

Q44 Where is most of your truck management information kept?
SINGLE CHOICE

In my head, based on my experience and knowledge	1
Mostly in my head but I keep various notes and records	2
A formal truck / fleet management system with all key data regularly inputted and reviewed	3

RANDOMISE Q46, Q47, Q48

Q46 Which of the following **vehicle factors** are seriously considered when deciding upon what truck to get?
RANDOMISE, ANCHOR 97, MULTIPLE CHOICE EXCEPT FOR '97

Engine size/power/torque	1
Model choices / fit for purpose / ability to modify	2
Availability – lead time	3
Brand preferences	4
Fuel type	5
Fuel efficiency, e.g. Euro 5 or Euro 6, AdBlue	6
Past experience / comfort in what's tried and tested	7
Getting the latest technology	8
A preference for new vehicles	9
A preference for used vehicles	10
Parts compatibility / being able to use spare parts across multiple vehicles	11
Driver preference / driver comfort	12
Vehicle size, e.g. dimensions and mass	13
Driver safety	14
Reliability of the vehicle	15
None of these	97

Q47 Which of the following **financial factors** are seriously considered when deciding upon what truck to get?
RANDOMISE, ANCHOR 97, MULTIPLE CHOICE EXCEPT FOR '97

Overall price (including any discounts)	1
Resale value / ease of selling	2
Fuel costs and future predictability	3
Preference to spend more up-front in exchange for low operating / debt costs	4
Preference to spend less up-front in exchange for higher operating / debt costs	5
Total cost of ownership calculations	6
Intangibles, e.g. carbon emissions, road wear, etc.	7
Depreciation rates / tax rates	8
Government interventions / subsidies	9
Capital / finance access and lender requirements	10
Fleet-tracking telematics	11
Cost of losing / not attracting drivers if they don't like their trucks	12
Predicted business revenue / profits / workload / debt servicing	13
None of these	97

Q48 Which of the following **practical factors** are seriously considered when deciding upon what truck to get?
RANDOMISE, ANCHOR 97, MULTIPLE CHOICE EXCEPT FOR '97

Driver licencing classes	1
Government regulations, e.g. VDAM, RUC	2
Need for driver training / upskilling	3
Managing a truck's place within routes and other vehicles in the fleet	4
Typical trip profiles	5
Maintenance capabilities – having the required skills	6
External expectations, e.g. from clients or customers	7
Emissions	8
Supplier relationships / service	9
Driver preference / driver comfort	10
None of these	97

Q49 Who do you usually get information from to help you develop a case for getting a truck?
MULTIPLE CHOICE, RANDOMISE, ANCHOR BOTTOM ITEM

Bank, finance company or insurer	1
Accounting staff in the business	2
External accountant	3
Suppliers / dealers	4
Other management staff in the business	5
Drivers	6
Mechanics	7
Friends / people I know in other companies	8
General industry reviews and articles I read	9
Government information e.g. from EECA or Ministry of Transport	10
Fleet management system / telematics	11
Industry associations or business network organisations	12
Other (please tell us what)	96

Note: *This online questionnaire script was adapted for cases where respondents might prefer to be interviewed by phone. Red text indicates additional script that was provided for phone interviewers.*

Quantitative survey questionnaire (pages 16–18)

Consideration and use of low-emission vehicles

Thanks so much for your help so far, we're into the last part of the questionnaire, which is all about reducing fuel emissions.

Q55 How satisfied are you in the current fuel efficiency of your trucks?
SINGLE CHOICE

Very satisfied, it's all at the highest possible level we can practically and financially reach	1
Somewhat satisfied, it's the best we can do right now but we could do better	2
Not satisfied, big improvements could be made	3

Q56 Where does the reduction of your vehicles fleet's carbon emissions fit into your business' medium-to-long-term plan?
SINGLE CHOICE

We are already committed to reducing emissions and have already started taking steps to achieve this	1
We are already committed to reducing emissions but have not yet implemented any changes	2
We have been considering how to reduce emissions but not yet done any formal work on this	3
We have not been considering how to reduce emissions but are open to doing so	4
We have not been considering how to reduce emissions and have no real desire to do so	5

ASK IF Q56 = 1

Q57 What has your business already done to reduce emissions of its fleet?
RANDOMISE, ANCHOR 96/97, MULTIPLE CHOICE EXCEPT FOR '97

Reviewed routes, timing, freight logistics	1
Modified vehicles / changed truck types, e.g. to take more freight over fewer trips	2
Adopted hybrids where possible, e.g. staff cars, vans, utes	3
Adopted purely electric vehicles where possible, e.g. staff cars, vans, utes	4
Used biofuels	5
Started using newer trucks with cleaner diesel engines	6
Bought / leased electrically powered truck(s)	7
Bought / leased hydrogen truck(s)	8
Added hydrogen injection technology to truck(s)	9
Used telematics data to improve driver behaviour	10
Started using more electrically-powered machinery e.g. on-site equipment	11
Switching some cargo from trucks to alternative modes (e.g. rail, cargo bikes)	12
Something else (please tell us what)	96
Nothing	97

Q58 ASK IF Q56 = 1

What are the main reasons why your business has been trying to reduce the emissions of its fleet?
MULTIPLE CHOICE EXCEPT FOR 99, RANDOMISE, ANCHOR 99/96

		COM-B ELEMENTS FOR INTERNAL REFERENCE
To be environmentally better / reduce emissions	1	M
Lower fuel / energy costs	2	O
Lower maintenance costs	3	O
Customers want it / part of our brand	4	M
Parent company / owners / shareholders want it	5	M
Nice to experiment and try new things	7	C
To take advantage of the EECA Low-Emission Transport Funding	8	C
Unsure	99	
Another reason (please tell us what): _____	96	

Q59 ASK IF Q56 = 1 OR 2 Does your business conduct regular emissions assessments of your fleet?
SINGLE CHOICE

Yes, regularly	1
Yes, but only occasionally	2
No, but we have considered it	3
No, it has not been considered but I am aware of them	4
No, I have never heard of this before	5

Q60 ASK IF Q56 = 1 OR 2Has your business ever achieved ISO certification for lower-emissions management?
SINGLE CHOICE

Yes, and we are currently certified	1
Yes, but are not currently certified	2
No, but we have considered it	3
No, it has not been considered but I am aware of it	4
No, I have never heard of this before	2

Q54 ASK ALL
New Zealand has made a number of specific commitments around climate change.
Before today, which, if any of the following commitments had you heard of?
MULTICHOICE EXCEPT

The Paris agreement, aiming to limit global temperature increases to 1.5°C above pre-industrial levels	1
The Zero Carbon Act 2019, Reducing net emissions of all greenhouse gases except biogenic methane to zero by 2050	2
The Aotearoa New Zealand's First Emissions Reduction Plan, reducing emissions from freight transport by 35 per cent by 2035 compared to 2019 levels .	3
The Memorandum of Understanding on Zero-Emission Medium and Heavy-Duty Vehicles, Aiming for 30% zero-emission vehicle sales by 2030	
~~Other commitments (please specify)~~	~~96~~
I have not heard about any New Zealand commitments around climate change	97

LEV USERS

Q61 ASK IF ELECTRIC VEHICLES ARE USED (Q57 = 4 OR 7)
How many **electric** vehicles does your company operate?

Please note, this includes plug-in electric vehicles only and **not** hybrid or hydrogen vehicles

Enter zero for any types of vehicle that you don't operate. If you are unable to estimate how many vehicles you will have in a category, you can leave that box blank

[IF CATI SCRIPT] Approximately how many of each type of **electric** vehicle does your company own?

INTERVIEWER INSTRUCTION: please read out each vehicle type and enter value given by respondent. If respondent indicates that no trucks are owned, enter zero for each row and proceed to vehicles leased. If respondent is unsure, probe for best estimate. Leave blank if they cannot provide an estimate

And approximately how many of each type of **electric** vehicle are leased by your business?

INTERVIEWER INSTRUCTION: please read out each vehicle type and enter value given by respondent. If respondent indicates that none are leased, enter zero for each row. If respondent is unsure, probe for best estimate. Leave blank if they cannot provide an estimate

GRID QUESTION, NUMERIC FIELD FOR EACH COLUMN/ROW, RANGE 0-..

		_1 Number owned	_2 Number leased
1	Small vehicles, e.g. staff cars and vans		
2	Commercial vehicles, e.g. utes		
3	Trucks (3.5+ t)		

Q62 ASK IF ELECTRIC VEHICLES ARE USED (Q57 = 4 OR 7)

Where is the re-charging for your business's electric vehicles done?
MULTIPLE CHOICE

On-site chargers at the business	1
On-road chargers elsewhere	2
At employees' homes	3

Q65 ASK IF ELECTRIC OR HYDROGEN TRUCKS ARE USED (Q57 = 4, 7, 8 OR 9)
What were the main factors that were considered when judging whether to buy or lease your company's electric or hydrogen truck(s)?
MULTIPLE CHOICE, RANDOMISE, ANCHOR 96

		COM-B ELEMENTS FOR INTERNAL REFERENCE
The 'total cost of ownership' calculation	1	M
Lower fuel costs	2	M
Lower maintenance costs	3	M
Parent company / owners / shareholders want it	5	M
Work to be gained from environmentally-conscious customers	6	O

Note: *This online questionnaire script was adapted for cases where respondents might prefer to be interviewed by phone. Red text indicates additional script that was provided for phone interviewers.*

Quantitative survey questionnaire (pages 19–21)

To take advantage of the EECA Low-Emission Transport Funding	7	O
Being able to lease it so the up-front costs were lower	8	O
Other factors (please tell us what): _____	96	

Q66 ASK IF ELECTRIC OR HYDROGEN TRUCKS ARE USED (Q57 = 4, 7, 8 OR 9)

Were there any frustrations or notable challenges when judging whether to buy or lease your company's electric or hydrogen truck(s)?
MULTIPLE CHOICE, RANDOMISE, ANCHOR 96-97

Difficulties estimating the 'total cost of ownership'	1
Difficulties estimating fuel costs	2
Difficulties estimating maintenance costs	3
Difficulties estimating how it would be used, e.g. routes and freight types	4
Difficulties accessing private finance, e.g. from a bank	5
Difficulties applying for government funding	6
Difficulties convincing others in the business to try something new	7
Other difficulties (please tell us what): _____	96
None	97

Q67 ASK IF ELECTRIC OR HYDROGEN TRUCKS ARE USED (Q57 = 4, 7, 8 OR 9)

Beyond normal running costs, are you monitoring the performance of your electric, hydrogen or hybrid truck(s) in any special ways to see how well they are performing?
SINGLE CHOICE

No, we are just tracking normal fuel, mileage and maintenance costs	1
Yes, we are monitoring specific factors	2

Q68 ASK IF Q67=2

What other special factors are you monitoring? What are the key things you're looking for to assess the performance of the vehicle(s)?

FREE TEXT

LEV NON-USERS

You have indicated that you do not have any **electric** or **hydrogen** trucks in your fleet.

Q75 LEV NON USERS (Q57 =NOT 3,4,7, 8 OR 9)

RANDOMISE Q75, 76, 77, ASSIGN QUESTION WORDING ACCORDING TO THE ORDER AT WHICH QUESTIONS APPEAR.
FOR FIRST QUESTION Which, if any, of the following factors ~~listed below~~ are especially big barriers stopping your business from considering or using electric or hydrogen trucks in your heavy vehicle fleet?

FOR SECOND QUESTION

And which other factors are barriers to considering or using electric or hydrogen trucks in your fleet?

FOR THIRD QUESTION

And finally, which, if any, of these are barriers to considering or using electric or hydrogen trucks in your fleet?
RANDOMISE, ANCHOR 'NONE', MULTIPLE CHOICE EXCEPT FOR 'NONE'

		COM-B ELEMENTS FOR INTERNAL REFERENCE
Maintenance capabilities – having the required skills	1	C
Purchase price	2	C
Not enough information to help assess their financial costs–benefits	3	C
Not enough information to help assess how practical they would be	4	C
Our business arrangements limit what we can buy	5	C
None of these are big barriers for me	97	

Q76 LEV NON USERS (Q57 =NOT 3,4,7, 8 OR 9)

RANDOMISE, ANCHOR 'NONE', MULTIPLE CHOICE EXCEPT FOR 'NONE'

		COM-B ELEMENTS FOR INTERNAL REFERENCE
Availability – lead time	1	O
Battery recharging time / queues	2	O
Preferred supplier does not provide them	3	O
Capital / finance access and lender requirements / reluctance to lend on unproven tech	4	O
Challenges with in-house recharging	5	O
Debt / loan servicing / cashflow	6	O
Drivers not licenced for heavier vehicles	7	O
Engine size / power / torque	8	O
Model choices / fit for purpose / ability to modify	9	O
Number / location of on-route recharging options	10	O

Loss of available freight weight / VDAM, RUC	11	O
Parts compatibility / being able to use spare parts across multiple vehicles	12	O
Preference to spend less up-front in exchange for higher operating / debt costs	13	O
Truck routes are unsuitable, e.g. bridge weights, hills, long distances	14	O
Unsuitable depreciation rates / tax rates	15	O
Trucks are used for long shifts 24/7	16	O
Unsuitable for freight type, e.g. livestock / chilled	17	O
None of these are big barriers for me	97	

Q77 LEV NON USERS (Q57 =NOT 3,4,7, 8 OR 9)

RANDOMISE, ANCHOR 'NONE', MULTIPLE CHOICE EXCEPT FOR 'NONE'

		COM-B ELEMENTS FOR INTERNAL REFERENCE
I don't want the risk of buying technology that may become obsolete	1	M
Hard to predict the resale value / ease of selling	2	M
I just don't believe in the need to reduce emissions in this way	3	M
I have already got a very clean fleet and don't need to change it	4	M
Customers won't want to pay extra	5	M
None of these are big barriers for me	97	

Note: *This online questionnaire script was adapted for cases where respondents might prefer to be interviewed by phone. Red text indicates additional script that was provided for phone interviewers.*

Quantitative survey questionnaire (page 22)

Government assistance

ASK ALL

Q80 There are always things that governments can do to help industries adapt to changing times. To help heavy freight businesses overcome the barriers you have just indicated, what do you suggest the government does?

FREE TEXT

Q81 Some possible things the government could do to help heavy freight businesses overcome these barriers are listed below.

[ONLINE VERSION] Please indicate how useful you think each of these could be for a business like yours wanting to use more electric, hydrogen or hybrid trucks.

[IF CATI VERSION] Using a scale of 1 to 10 , where 1 means "Not at all useful" and 5 means "very useful", Please indicate how useful you think each of these could be for a business like yours wanting to use more electric, hydrogen or hybrid trucks.

5-POINT SCALE RANGING FROM 'NOT AT ALL USEFUL' TO 'VERY USEFUL', RANDOMISE ROWS

		Not at all useful				Very useful
1	Lowering purchase prices on low emissions vehicles so they are similar to similarly-specced diesel trucks	1	2	3	4/5/6/7/8	10
2	Providing operating subsidies that reduce the ongoing operating costs					
3	Providing better financing arrangements than are possible through private lenders, e.g. low-interest loans					
4	Organising information-sharing groups for the sector					
5	Organising vehicle procurement groups to make purchasing easier and cheaper					
6	Raise the mass limits for low emissions vehicles on New Zealand roads and for driver licence classes					

CLOSING SECTION

ASK ALL

Q82 Thank you for taking the time to participate in this survey.

If there is anything else at all that you would like to tell us about the topics discussed in this survey, please feel free to share your thoughts below

OPEN ENDED

Note: *This online questionnaire script was adapted for cases where respondents might prefer to be interviewed by phone. Red text indicates additional script that was provided for phone interviewers.*

APPENDIX 4

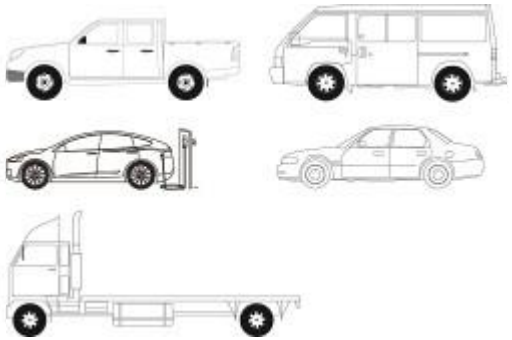
RUC Class descriptions

GAME CHANGERS

RUC class descriptions

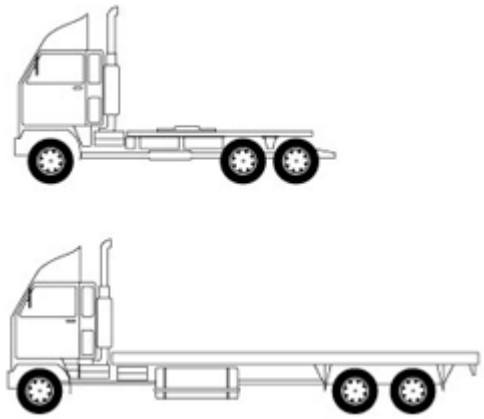
RUC Class 1

Powered vehicles with 2 axles (except type 2, type 12 or type 299 vehicles)



RUC Class 2

Powered vehicles with 3 axles, (except type 308, 309, 311, 399 or 413 vehicles)



RUC Class 6

Powered vehicles with one single-tyred spaced axle and one twin-tyred spaced axle

Source: *https://www.nzta.govt.nz/vehicles/road-user-charges/ruc-rates-and-transaction-fees/*

RUC class descriptions

RUC Class 14

Powered vehicles with 4 axles (except type 408, 414 or type 499 vehicles)

RUC Class 19

Powered vehicles with 5 or more axles (except type 599 vehicles)

RUC Class 308

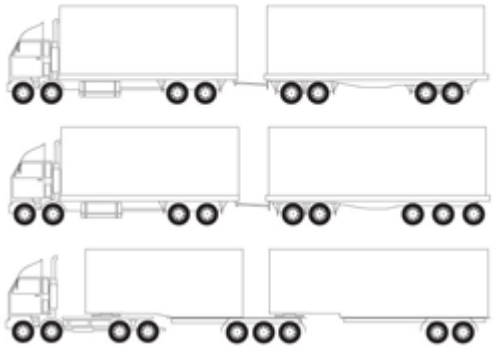
Towing vehicles with 3 axles that are part of a combination vehicle with a total of at least 8 axles

Source: *https://www.nzta.govt.nz/vehicles/road-user-charges/ruc-rates-and-transaction-fees/*

RUC class descriptions

RUC Class 408

Towing vehicles with 4 axles that are part of a combination vehicle with a total of at least 8 axles

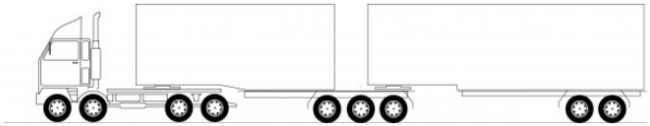


RUC Class 309

Towing vehicles with 3 axles that are part of a combination vehicle with a total of at least 9 axles

RUC Class HPMV

Example: a vehicle combination of a type 14 truck towing a type 939 first trailer and towing a type 29 second trailer.



Source: *https://www.nzta.govt.nz/vehicles/road-user-charges/ruc-rates-and-transaction-fees/*

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GAME CHANGERS

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