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2022-2023: Green freight programs survey on the freight industry

Final Report

Prepared for Natural Resources Canada

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Canada

2022-2023: Green freight programs survey on the freight industry
Final Report

Prepared for Natural Resources Canada
Supplier name: Phoenix Strategic Perspectives Inc.
January 2023

This public opinion research report presents the results of a 15-minute telephone survey of 300 representatives of the Canadian freight transportation industry who were involved in or knowledgeable about the management or implementation of trucking fuel efficiency programs and policies within the business' fleet of vehicles. The fieldwork was conducted from October 24 to November 14, 2022.

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Executive Summary

The department of Natural Resources Canada (NRCan) commissioned Phoenix Strategic Perspectives (Phoenix SPI) to conduct survey research to assess Freight Transportation Medium and Heavy-duty Vehicle (MHDV) industry awareness and uptake of Zero Emission Vehicles (ZEVs) and Retrofits.

1. Research purpose, objectives and intended use of results

The Greening Freight Programs (SmartWay, Smart*Driver* and the Green Freight Program) are three programs that provide training, tools, and resources to help Canada's fleets lower fuel consumption, operating costs, and harmful vehicle emissions. The purpose of the research was to assess perspectives on reducing fuel use and improving energy efficiency in freight transportation among the MDHV industry.

The specific research objectives included:

- Determine whether companies have implemented retrofits and, if so, what types of retrofits were completed in the past three years.
- Understand the barriers, if any, to retrofitting fleets.
- Assess use, and perceived importance, of fleet energy assessments.
- Understand interest in fleet energy assessments, including reasons companies have not considered an assessment.
- Measure perceived importance of government funding programs that support fleet retrofits.
- Assess familiarity with the Green Freight Assessment Program[1] and awareness of provincial/territorial rebate programs for fleets retrofits.
- Measure participation in government funding programs for fleet retrofits and determine preferred types of funding.
- Understand whether government funding will motivate companies to consider retrofitting fleets.
- Explore awareness, and implementation, of repowering.
- Understand whether government funding will motivate companies to consider repowering engines.
- Assess intent to repower fleet engines in the next two to three years.

The results of this research will be used to: 1) enhance NRCan's understanding of inflection points and potential federal funding assistance needs to increase the uptake of ZEV purchases and retrofits; and 2) to inform program and policy development for natural resources or in relation to Government of Canada and Ministerial priorities.

[1] This program has since been renamed the Green Freight Program (GFP), which relaunched on December 12, 2022.

2. Methodology

A 15-minute telephone survey was conducted with a random sampling of 300 representatives of the Canadian freight transportation industry who occupy a position of owner/operator or senior level manager. The sampling frame was purchased from Dun & Bradstreet (D&B Canada) and drawn from NAICS code 4841 (General Freight Trucking)—specifically: 48411 (Local) and 48412 (Long Distance) and NAICS code 4842 (Specialized Freight [except Used Goods] Trucking Local—specifically: 484220 (Local) and 484230 (Long Distance).

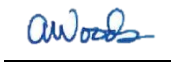
All respondents were involved in, or knowledgeable about, the management or implementation of trucking fuel efficiency programs and policies within the business' fleet of vehicles. The results were weighted to reflect the actual distribution of businesses operating in this sector in Canada and can be considered accurate to within ±6%, 19 times out of 20. The margins of error are greater for results pertaining to subgroups of the total sample. The fieldwork was conducted from October 24 to November 14, 2022. More information on the methodology can be found in the Appendix: 1. Technical Specifications.

3. Contract value

The contract value was $78,553.08 (including applicable taxes).

4. Statement of political neutrality

I hereby certify as a Senior Officer of Phoenix Strategic Perspectives that the deliverables fully comply with the Government of Canada political neutrality requirements outlined in the *Communications Policy* of the Government of Canada and Procedures for Planning and Contracting Public Opinion Research. Specifically, the deliverables do not contain any reference to electoral voting intentions, political party preferences, standings with the electorate, or ratings of the performance of a political party or its leader.



Alethea Woods
President
Phoenix Strategic Perspectives Inc.

5. Notes to readers

- All results are expressed as percentages, unless otherwise noted. Throughout the report, percentages may not always add to 100 due to rounding and/or multiple responses being offered by respondents.
- At times, the number of respondents changes in the report because questions were asked of sub-samples of the survey population. Accordingly, readers should be aware of this and exercise caution when interpreting results based on smaller numbers of respondents.

- When reporting subgroup variations, only differences that are significant at the 95% confidence level and that pertain to a subgroup sample size of more than n=20 are discussed in the report, or that are part of a pattern or trend.

6. Summary of findings

Company Profile

- Companies represented in this survey were distributed regionally as follows: Atlantic Canada (5%), Quebec (20%), Ontario (37%), and the West (37%).
- Most companies have fewer than 100 employees: 26% employ fewer than five employees and 62% employ between five and 99 employees. Eleven percent of companies surveyed reported having 100 or more employees.
- The vast majority of companies have fewer than 100 trucks in their fleets. Specifically, 30% have fewer than five trucks and 65% have between five and 99 trucks in their fleet. Four percent of companies have 100 or more trucks in their fleet.
- The type of fleet reported by companies varied: 39% have exclusively for-hire fleets, 33% exclusively private fleets, and 27% have a combination for-hire and private.

Retrofits

- Nearly three-quarters (74%) of the companies surveyed have *not* implemented any retrofits to the trucks in their fleet in the past three years. Conversely, about one in five (22%) companies have implemented retrofits.
- Among companies that have recently implemented retrofits to their trucks, 71% installed cab heaters. Following this, approximately half have implemented route optimization technology (57%), cab coolers (54%), and/or predictive cruise (52%).
- When it comes to retrofitting their fleets, more than one-third of companies (37%) reported no barriers. The most common barrier identified by companies is cost (29%). This was followed at a distance by supply chain/vehicle or part availability (10%) and lack of required knowledge or expertise (7%).

Fleet Energy Assessments

- Six percent of companies have had a third party conduct an energy assessment of their fleet. Among companies that have not had an energy assessment, 20% would consider having a third-party energy assessment.

Government Funding Programs

- The majority of freight industry representatives surveyed believe that government funding programs that support fleet retrofits are at least somewhat important. Specifically, 39% said these programs are very important, while an additional 29% viewed them as somewhat important.
- Seventeen percent of freight industry representatives surveyed reported unaided awareness of the Government of Canada's Green Freight Assessment program (GFAP). Awareness

increased to 21% when respondents were provided a description of the program. This program has since been renamed the Green Freight Program (GFP).

- Awareness of provincial/territorial rebate programs for fleet retrofits is also low – 13% of freight industry representatives surveyed said they aware of these rebate programs.
- Use of government funding programs for fleet retrofits is not widespread. Specifically, 5% of respondents said their company has participated in a government funding program. When considering future participation in a government funding program for fleet retrofits, 40% of companies would prefer to receive a grant, 26% a tax credit, 19% a point-of-sale rebate, and 1% a cost sharing contribution.
- Seven in 10 companies that have *not* implemented retrofits **and** report cost as a barrier to doing so, would be motivated by the availability of government funding to consider retrofitting its fleet.

Repowering

- Almost half (45%) of companies surveyed are reportedly aware that repowering existing engines can be a cost-effective alternative to purchasing a new Original Equipment Manufacturer (OEM) vehicle. One in five (19%) companies have repowered existing truck engines within their fleet. For companies that have repowered existing engines, most of them (94%) reported using diesel to repower their fleet.
- Among companies that have partially repowered their fleet, two-thirds (65%) would consider repowering more engines if government funding was available.
- Among companies *not* interested in repowering their fleet in the next two to three years, 43% believe it will not provide sufficient cost-savings and 20% believe that repowering their fleet would be too expensive. Just over one-third (36%) are planning on buying a new fleet (and therefore not interested in repowering any engines).

Concluding observations

The following are offered as concluding observations:

Companies are investing in upgrades to their fleet

Many of the companies surveyed have purchased new trucks for their fleet, including approximately one-third which have reportedly replaced more than half of their fleet within the last five years.

Retrofit cost is a barrier

An important finding is that most companies have *not* implemented any retrofits to their fleet in recent years. For a number of these companies, the cost associated with implementing retrofits is considered as a main barrier.

Awareness of government rebate programs aimed at fleet retrofits is low

Despite cost being identified as a hindrance to retrofitting, awareness and use of government funding programs aimed at encouraging fleet retrofits is low. Although participation in federal and

provincial rebate programs is low, freight industry representatives attribute value to these programs, with more than two-thirds saying programs that support fleet retrofits are important.

Opportunity to increase participation in the rebate programs

The findings suggest there is significant opportunity to increase participation in the rebate programs because many companies that have not implemented retrofits would be motivated to do so by the availability of government funding. However, many of these companies would require government incentives to cover more than 50 percent of associated costs to make retrofitting financially feasible.

Opportunity to increase knowledge of repowering

There is also significant opportunity to increase knowledge of repowering existing engines as a cost-effective alternative to purchasing new vehicles. Although some companies have already repowered existing trucks, many of the freight industry representatives surveyed were not aware that this is a cost-saving alternative. Furthermore, when asked why their company is not interested in repowering, representatives pointed to the perception that doing so does not provide enough cost-savings benefit and/or that it is too expensive.

Detailed Findings

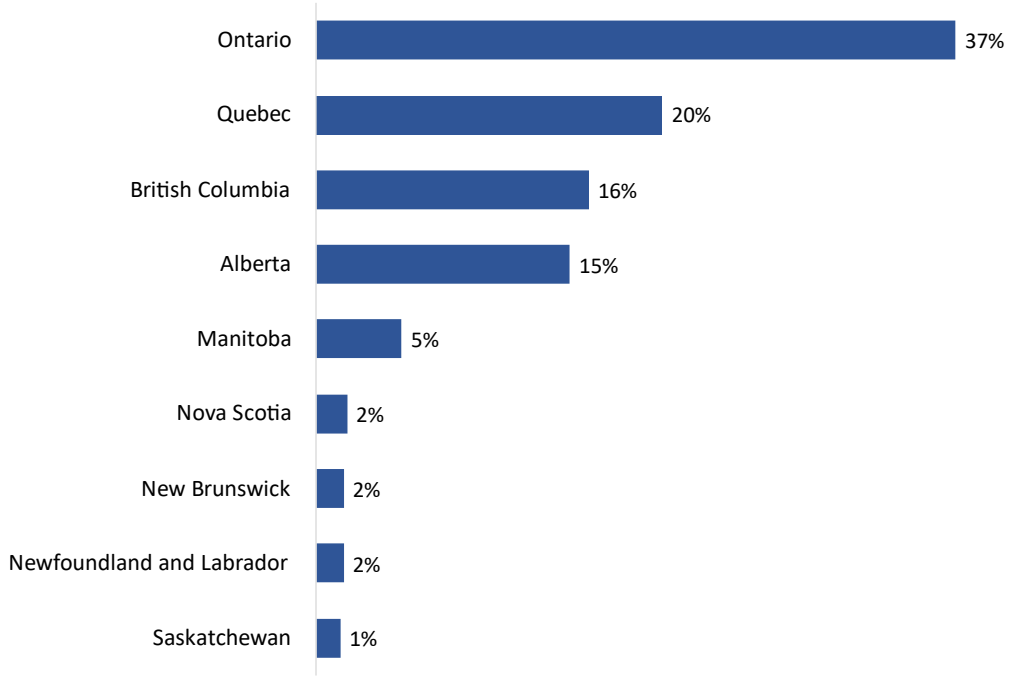
1. Profile of Responding Companies

This section of the report provides a profile of the companies represented in the survey.

More than one-third of head offices are in Ontario

Thirty-seven percent of companies have head offices located in Ontario. Following this, one in five said their company's head office is in Quebec, 16% in British Columbia, and 15% in Alberta. Six percent of companies are headquartered in a province in Atlantic Canada and 6% are in Saskatchewan or Manitoba.

Figure 1: Location of head office

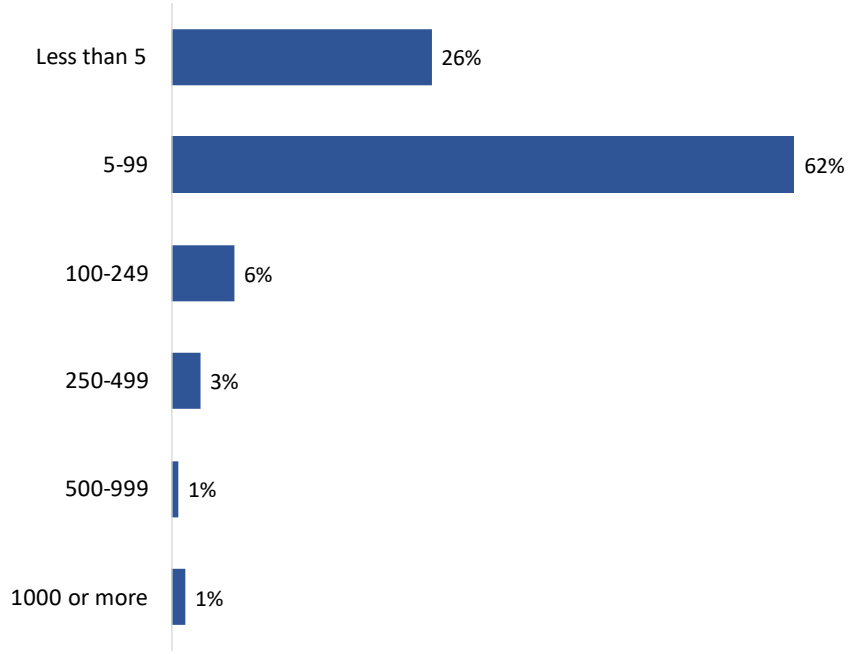


Q4. In which province or territory is your company's head office located? Base: n=300; All respondents.

Nearly two-thirds of companies employ between 5 and 99 employees

The single largest proportion of companies (62%) employ between five and 99 employees. Following this, one-quarter (26%) employ fewer than five employees. Even fewer companies surveyed employ 100 or more employees (11%).

Figure 2: Size of Company – Employees

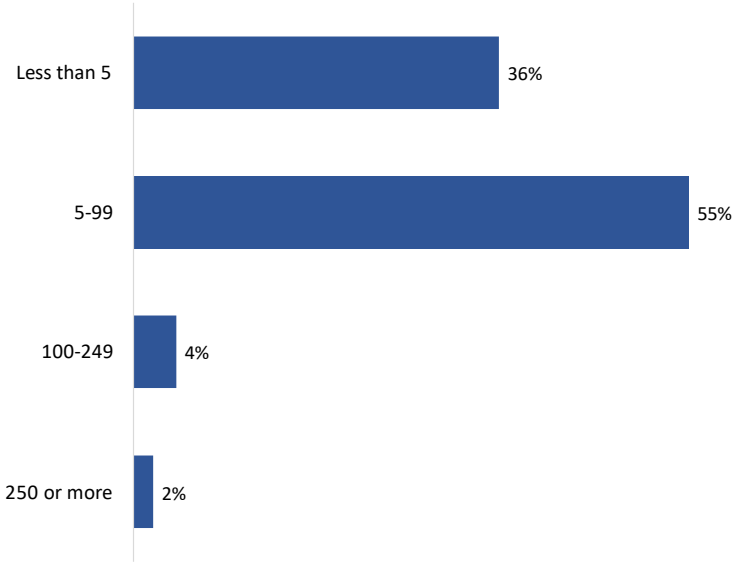


Q5. How many employees work for your company? Base: n=300; All respondents.

Vast majority of companies employee fewer than 100 drivers

The vast majority (92%) of companies surveyed employ fewer than 100 drivers. Specifically, just over half (55%) employ between five and 99 drivers. Following this, approximately one-third (36%) employ fewer than five drivers. Six percent of companies employ 100 or more drivers.

Figure 3: Number of drivers

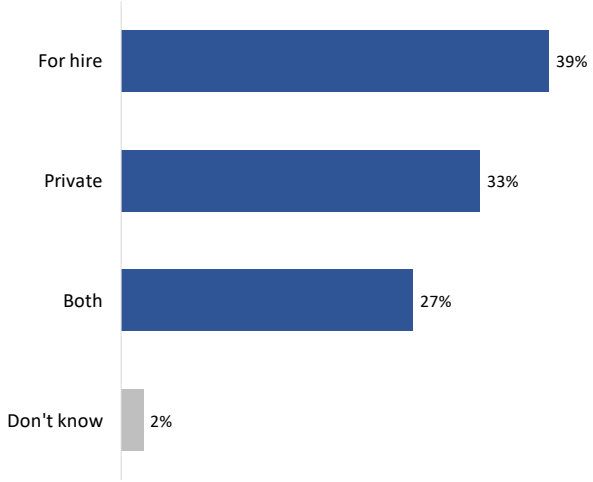


Q6. How many of these employees are employed as drivers for your company? Base: n=300; All respondents.

Fleet type is varied

The type of fleet reported by companies is varied; 39% have exclusively for-hire fleets and 33% exclusively private fleets. Additionally, a little more than one-quarter (27%) have a combination for-hire and private fleet.

Figure 4: Type of Fleet



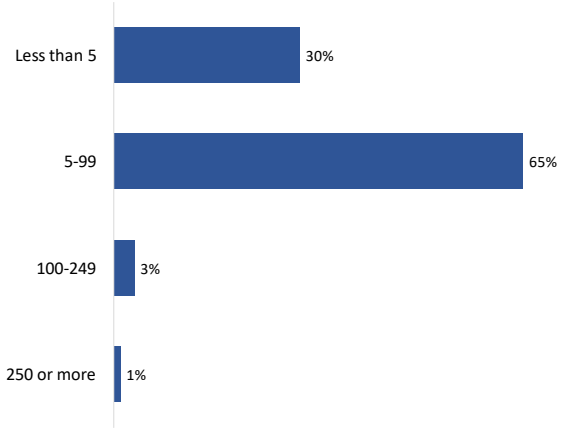
Q7. Is your fleet... Base: n=300; All respondents.

Companies based in Quebec (89%) were far more likely to report a private fleet as compared to companies headquartered elsewhere in the country. Additionally, companies that have implemented retrofits to their fleet of trucks (49%) were more likely than those that have not done so (28%) to report an exclusively private fleet.

Two-thirds of fleets have fewer than 100 trucks

A majority (65%) of freight industry representatives surveyed said their company has between five and 99 trucks in its fleet. Most of the rest (30%) have fewer than five trucks. Very few companies (4%) have more than 100 trucks in their fleet.

Figure 5: Number of trucks



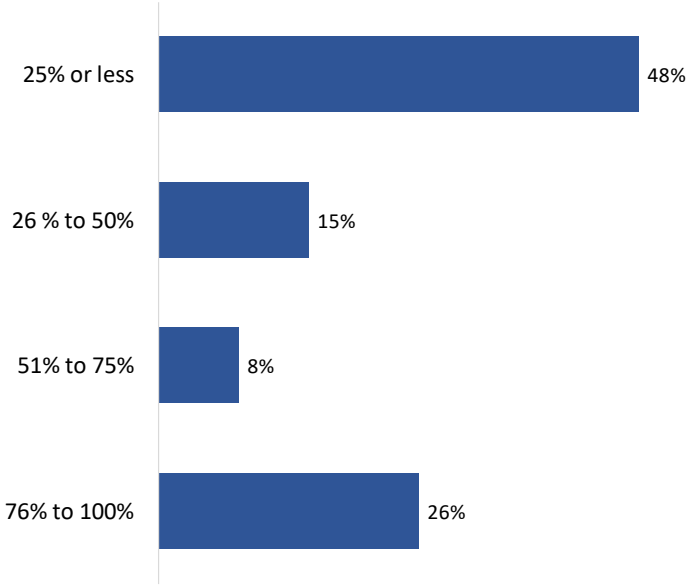
Q8. How many trucks are in your company's fleet? Base: n=300; All respondents.

Companies *not* offering eco-driving training to their drivers were more likely to report having fewer than five trucks in their fleet (36% versus 19% of companies that do offer eco-driving training). Additionally, companies that have implemented retrofits to their truck fleet (75%) were more likely than those that have not done so (61%) to have five to 99 trucks.

Nearly half say one-quarter or less of the trucks in their fleet are under five years old

Nearly half (48%) of freight industry representatives said that up to one-quarter of their company's fleet is less than five years old. Following this, only 15% reported that 26 to 50 percent of the trucks in their company's fleet are less than five years old and approximately one-third (34%) said that more than half the trucks in their company's fleet met this criterion.

Figure 6: Percentage of trucks in fleet less than five years old



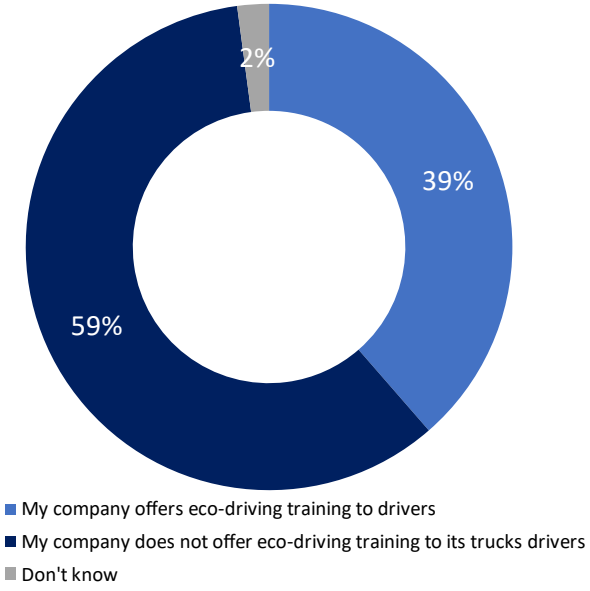
Q9. Approximately what percentage of trucks in your fleet are less than five years old? Base: n=300; All respondents.

Companies *not* offering eco-driving training to their drivers were more likely to report having fewer trucks less than five years of age in their fleet (56% versus 37% of companies that do offer eco-driving training). In contrast, companies offering eco-driving training were more likely to report that more than three-quarters of their fleet is less than five years old (35% versus 20% of those that do *not* offer training).

Many companies offer eco-driving training to drivers

Thirty-nine percent of companies offer eco-driving training to their truck drivers. Conversely, 59% do not offer their drivers this training.

Figure 7: Eco-driving training



Q37. Does your company offer eco-driving training to its truck drivers? Base: n=300; all respondents

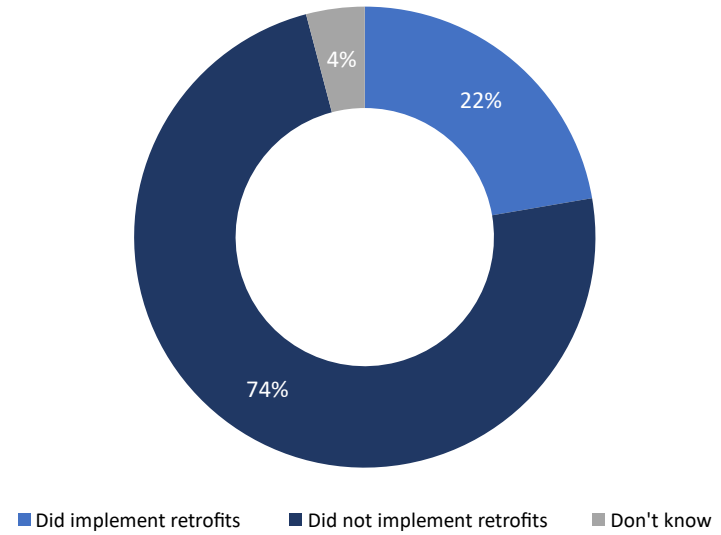
2. Retrofits

This section of the report discusses the retrofits implemented by companies in the past three years.

Majority have *not* implemented retrofits to their fleet

Nearly three-quarters (74%) of companies have *not* implemented any retrofits to the trucks in their fleet in the past three years. Conversely, about one in five (22%) have implemented retrofits within this time.

Figure 8: Implementation of retrofits



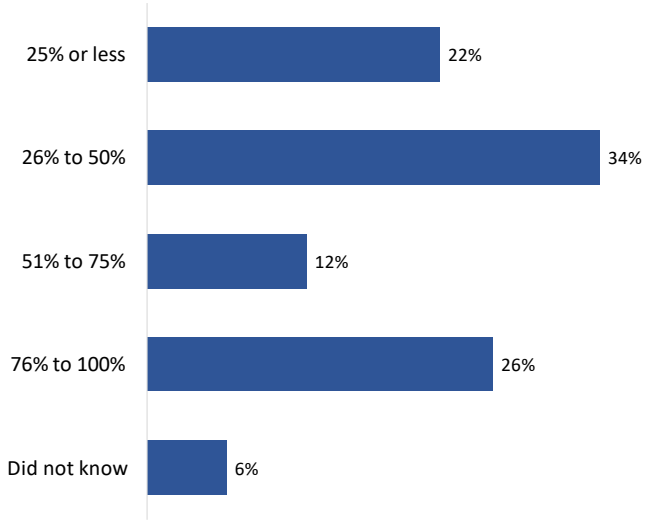
Q10. In the past 3 years, has your company implemented any retrofits to its truck fleet? Base: n=300; all respondents

Companies based in Quebec (51%) and those with exclusively private fleets (33%) were far more likely to report having implemented retrofits.

Percentage of trucks retrofited in the past three years varies considerably

Among companies that have implemented retrofits in the past three years (n=65), approximately one in five (22%) have retrofitted up to 25 percent of their trucks. Following this, one-third (34%) have implemented retrofits to 26 to 50 percent of their fleet, while 38% have retrofitted more than three-quarters of the trucks in their fleet.

Figure 9: Percentage of fleet retrofits implemented in the past 3 years

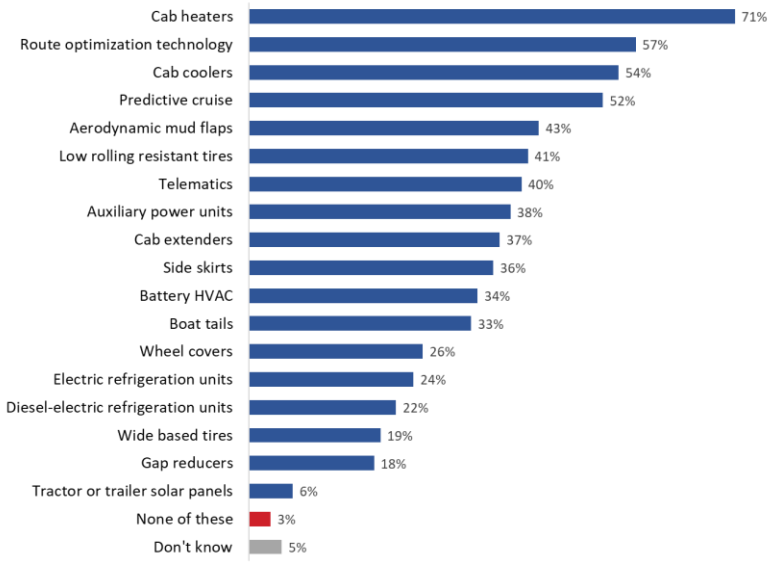


Q11. What percentage of your company's truck fleet has been retrofitted in the past 3 years? Base: n=65; companies that implemented retrofits to its truck fleet in the past 3 years

Most have implemented cab heaters; half implemented route optimization technology, cab coolers, and predictive cruise

Most companies (71%) that have completed retrofits[2] in the last three years implemented cab heaters. Following this, more than half the companies surveyed that completed retrofits in the past 3 years have implemented route optimization technology (57%), cab coolers (54%), and predictive cruise (52%). The full range of retrofits completed by companies can be found below in figure 10.

Figure 10: Type of retrofits



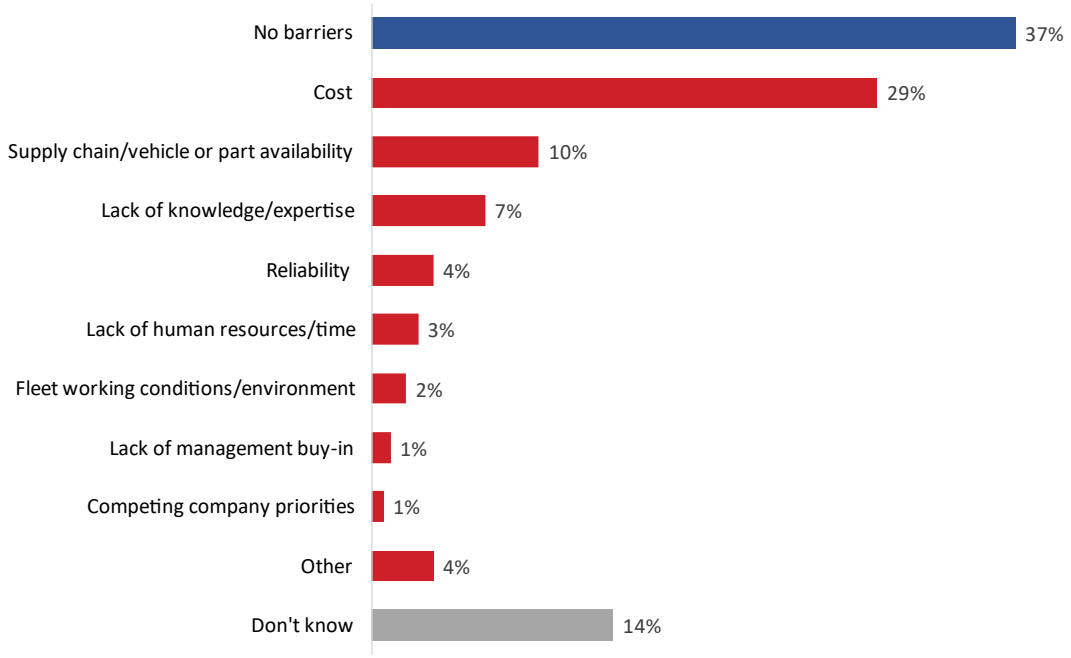
Q12. Which of the following retrofits, if any, has your company completed in the past 3 years? Base: n=65; those whose company implemented retrofits to their trucks. Multiple responses accepted.

[2] Six in 10 (61%) companies that implemented retrofits have participated in a government funding program for retrofits.

Many companies report a range of barriers to retrofitting their fleet; one-third report no barriers

Most companies surveyed (60%) reported at least one barrier faced when it comes to retrofitting their fleet. Conversely, more than one-third (37%) of these companies face no barriers to retrofitting their trucks. Among the barriers to retrofitting reported, the most common is cost (29%), followed by supply chain and vehicle or part availability (10%) and lack of required knowledge or expertise (7%). The full range of barriers identified by respondents are detailed in figure 11.

Figure 11: Barriers to retrofitting



Q13. What barriers, if any, does your company face when it comes to retrofitting its fleet? Base: n=300; all respondents. Multiple responses accepted.

Companies that have implemented retrofits to their trucks in the past three years (45%) were more likely than those that have not (26%) to report that cost is a barrier when it comes to retrofitting their fleet.

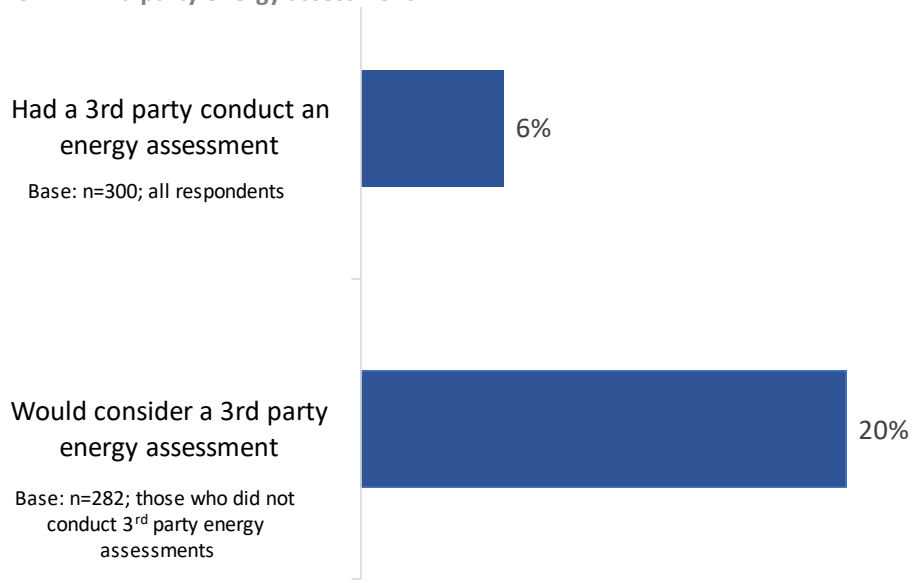
3. Fleet Energy Assessments

This section of the report discusses fleet energy assessments.

One in five would consider a third-party energy assessment; very few have already done so

Very few (6%) companies have had a third party conduct an energy assessment of their fleet. Among companies that have not had an energy assessment (n=282), exactly one in five would consider having a third party conduct an energy assessment of their fleet.

Figure 12: Third party energy assessment



Q14. Has your company ever had a third party conduct an energy assessment of your fleet? Q16. Would your company ever consider having a third party conduct an energy assessment of its fleet?

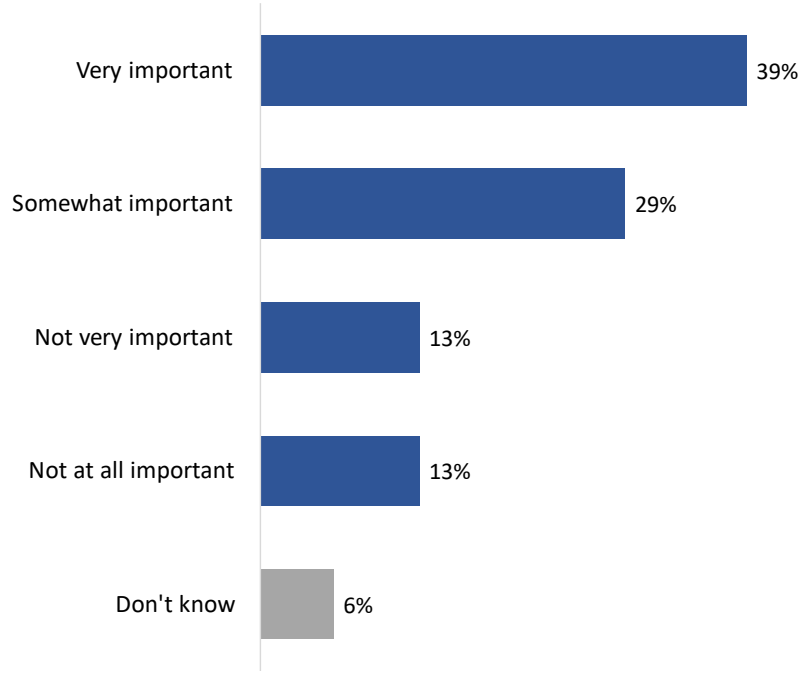
4. Government funding programs

This section of the report presents respondents' views of government funding and awareness of government funding programs.

Majority believe government funding for retrofits are an important investment

More than two-thirds (69%) of freight transportation representatives said that government funding programs are at least somewhat important. Specifically, 39% view these programs as very important and an additional 29% view them as somewhat important for fleet retrofits. At the other end of the spectrum, one-quarter consider government funding programs to be not very (13%) or not at all (13%) important.

Figure 13: Government funding for retrofits



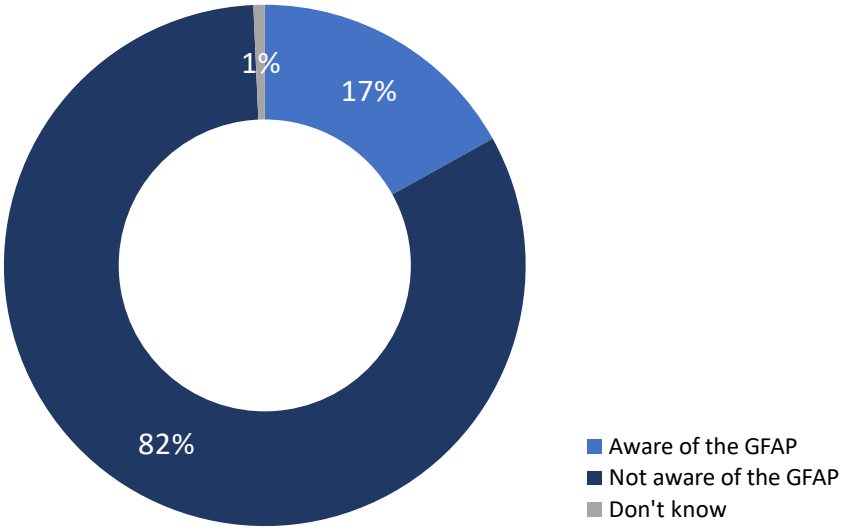
Q18. How important are government funding programs that support fleet retrofits? Base: n=300; all respondents

Companies that offer eco-driving training (80%) were significantly more likely than those that do not (61%) to report that government funding programs supporting fleet retrofits are important. Compared to companies headquartered elsewhere in the country, those in Ontario (76%) were more likely to attribute importance to government funding.

Awareness of Canada's Green Freight Assessment Program was low

Close to one in five (17%) representatives of freight transportation companies are aware of the Government of Canada's Green Freight Assessment program (GFAP), which provided funding towards fleet assessments and retrofits between 2018-2022. This program has since been renamed the Green Freight Program, which relaunched on December 12, 2022.

Figure 14: Awareness of Canada's Green Freight Assessment Program



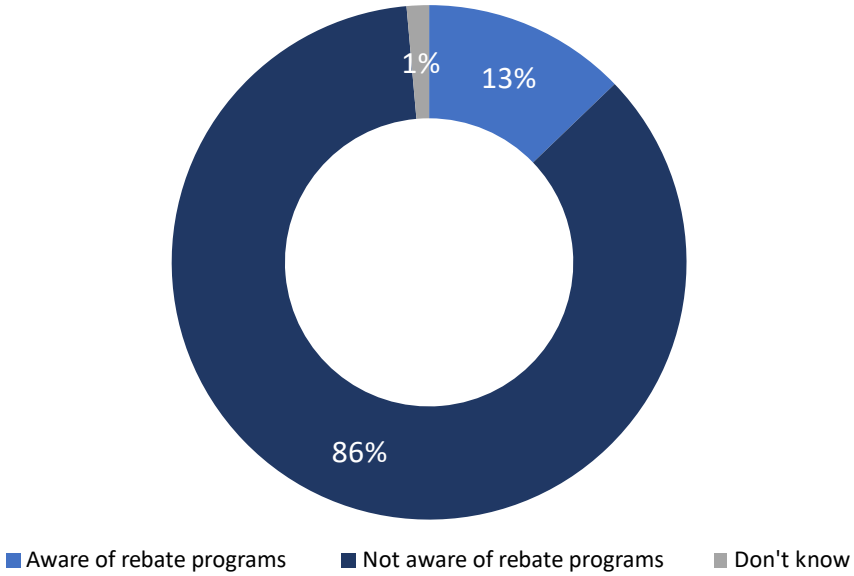
Q19. Are you aware of the Government of Canada's Green Freight Assessment Program? Base: n=300; all respondents

Companies that offer eco-driving training (26%) and those aware of provincial/territorial rebate programs (57%) were more likely to be aware of the GFAP.

Low awareness of provincial/territorial rebate programs for retrofits

Awareness of provincial/territorial rebate programs for retrofits is not widespread. Thirteen percent of freight transportation companies surveyed are aware of these programs, while more than eight in 10 (86%) are not aware.

Figure 15: Awareness of provincial/territorial rebate programs for retrofits



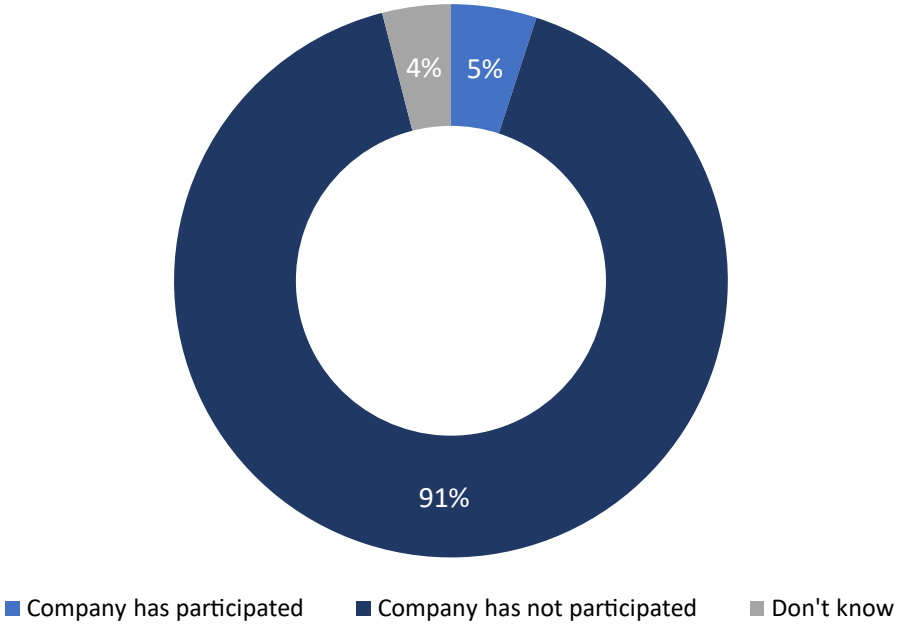
Q21. Are you aware of any [provincial/territorial] rebate programs for fleet retrofits? Base: n=300; all respondents

Companies that offer eco-driving training (21%) and those aware of the GFAP (43%) were more likely to be aware of provincial/territorial rebate programs (57%).

Few have participated in a government funded retrofit program

Use of government funded retrofit programs is limited. Specifically, 5% of the freight transportation representatives surveyed said their company has participated in one or more of these programs.

Figure 16: Participation in government funded retrofit programs

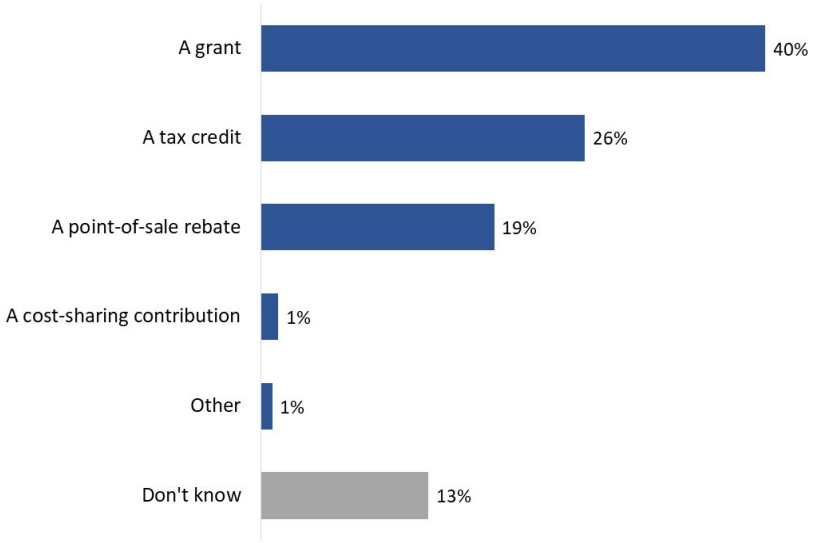


Q22. Has your company participated in any government funding programs for fleet retrofits? Base: n=300; all respondents

Grants preferred method of funding to receive

When asked what type of funding their company would prefer to receive when participating in a government funded program for fleet retrofits, 40% of respondents said their company would prefer to receive a grant. About one-quarter (26%) would prefer a tax credit, while 19% would prefer a point-of-sale rebate.

Figure 17: Preferred type of funding



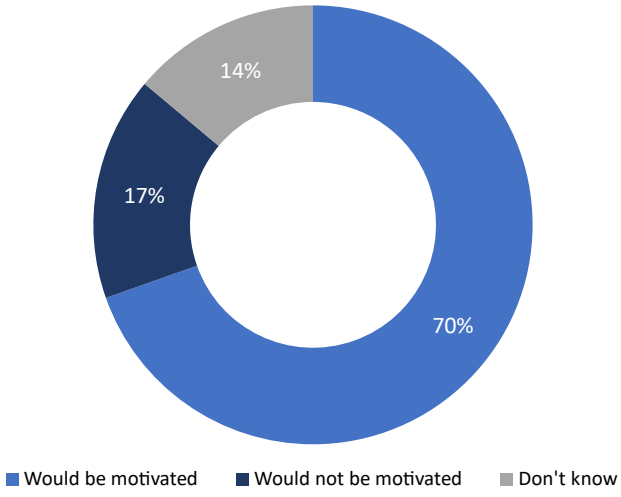
Q24. What type of funding would your company prefer to receive participating in a government funding program for fleet retrofits? Base: n=300; all respondents

Companies that have already implemented retrofits to their truck fleet (52%) were likely than those that have not (37%) to express a preference a grant.

Majority would be motivated to implement retrofits with availability of government funding

Among companies that have not implemented retrofits ***and*** that report cost as a barrier to doing so (n=58), 70% of respondents said the availability of government funding would motivate their company to consider retrofits. Seventeen percent would not be motivated to implement retrofits despite availability of government funding.

Figure 18: Government funding led motivation to implement retrofits

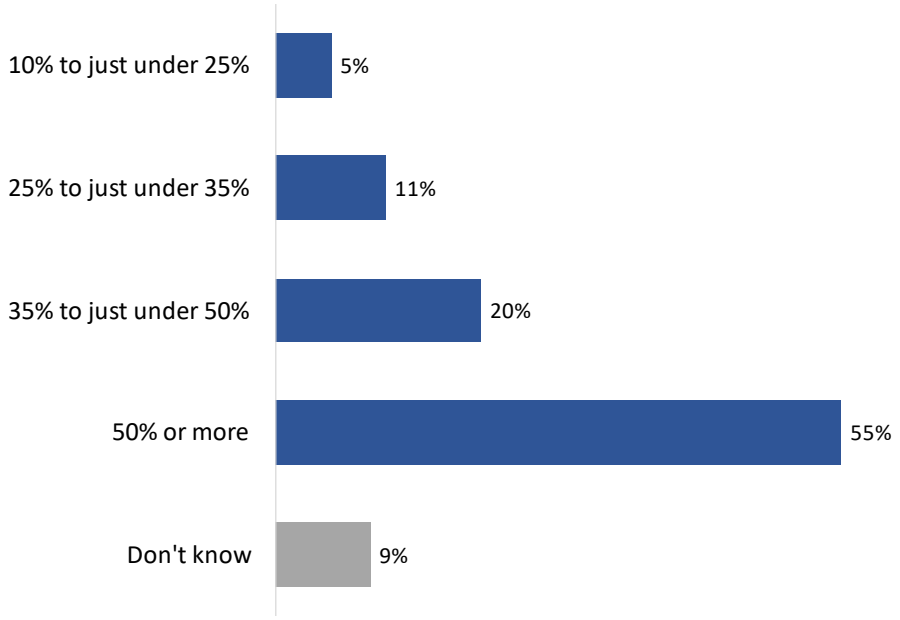


Q25. Would the availability of government funding motivate your company to consider retrofitting its fleet? Base: n=58; those who did not retrofit their fleet and said cost is a barrier

More than half would require government funding to cover at least 50 percent of retrofitting costs

Among companies that would consider implementing retrofits with government funding (n=40), over half (55%) would require government incentives to cover 50 percent or more of the associated costs to make this financially feasible for their company. Following this, one in five companies would require government funding to cover between 35 percent to just under 50 percent of the costs. Fewer (16%) companies would require less than 35 percent of the costs of retrofitting to be covered by government funding.

Figure 19: Percentage of government funding needed to motivate retrofit implementation



Q26. What percentage of the fleet retrofitting cost would your company need funded by government incentives to make retrofitting financially feasible? Base: n=39; those who would consider retrofitting if government funding is available

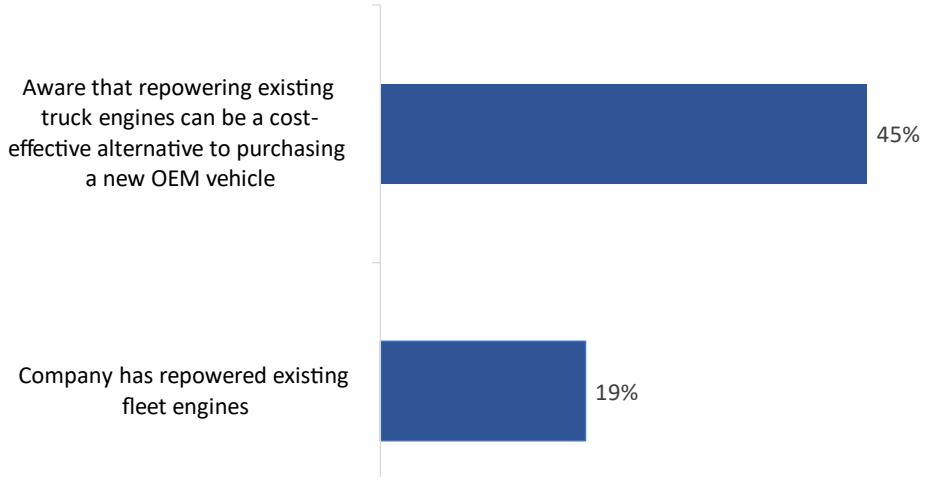
5. Repowering

This section of the report presents respondents' views and actions in relation to repowering.

Fewer than half are aware that repowering existing engines can be cost-effective; one in five have repowered existing engines

Forty-five percent of freight transportation companies surveyed are aware that repowering existing truck engines can be a cost-effective alternative to purchasing a new Original Equipment Manufacturer (OEM) vehicle. One in five (19%) companies have already repowered existing fleet engines.

Figure 20: Awareness of repowering existing fleet engines



Q27. Are you aware that repowering your existing truck engines can be a cost-effective alternative to purchasing a new OEM vehicle? Q28. Has your company repowered any of existing fleet engines?

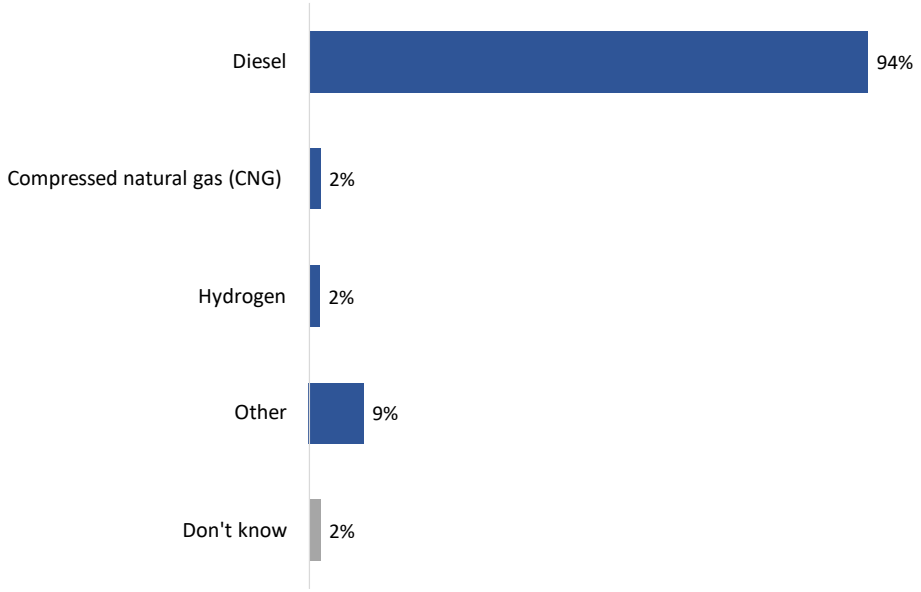
The following companies were more likely to be aware that repowering existing truck engines can be a cost-effective alternative to purchasing a new OEM vehicle:

- Companies that offer eco-driving training (58%);
- Companies aware of the GFAP (64%) and/or rebate programs (76%); and
- Companies that have implemented retrofits to their truck fleet (58%).

Large majority of repowered fleet engines use diesel

Among freight transportation companies that have repowered existing fleet engines (n=58), the vast majority (94%) use diesel fuel. Very few companies use compressed natural gas (CNG) (2%) or hydrogen (2%) to fuel their repowered fleets.

Figure 21: Type of fuel used to repower fleet engines

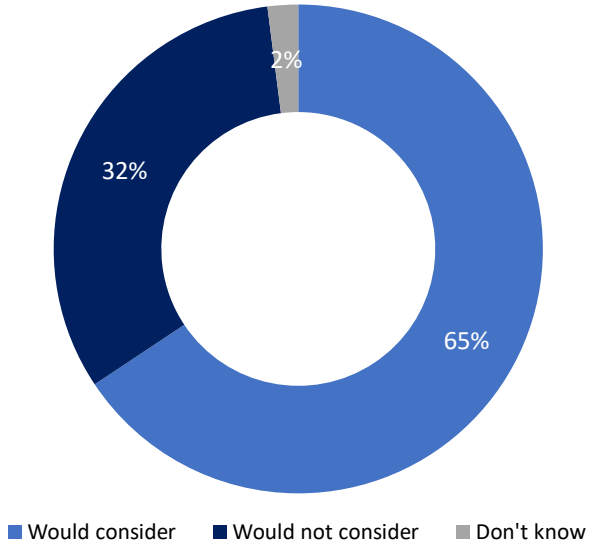


Q30. Which fuel types do your company's repowered fleet use? Base: n=58; those who repowered company's fleet engines. Multiple responses accepted.

Two-thirds would consider repowering more engines with the availability government incentives

Among freight transportation companies that have repowered some of their fleet (n=48), two-thirds (65%) would consider repowering more engines if some type of government funding was available. Conversely, one-third (32%) of companies would not consider repowering more engines *even* if some type of government funding was available.

Figure 22: Consideration of repowering more engines if government funding was available

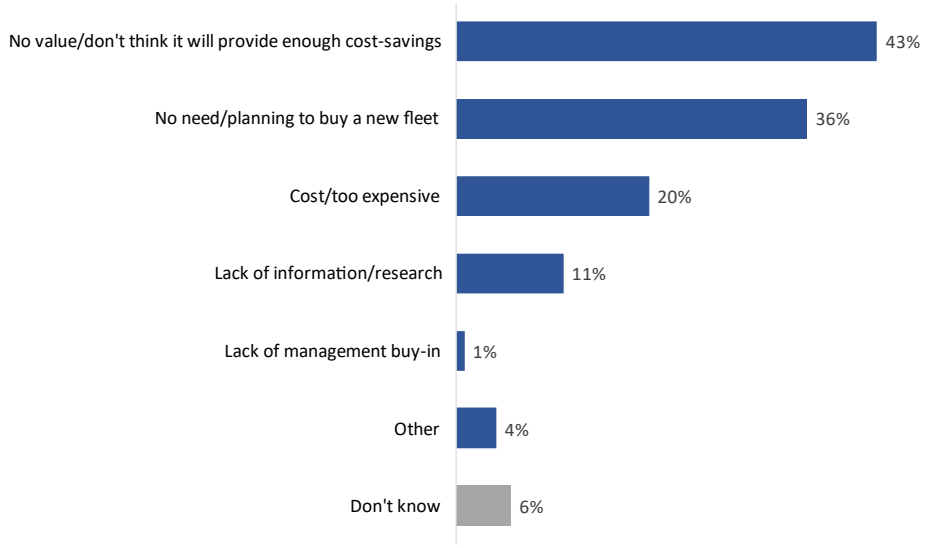


Q31. Would your company consider repowering more of its fleet engines if some type of government funding was available? Base: n=47; those who repowered <100% of their fleet engines

Many feel repowering their fleet would lack value; others plan to buy a new fleet

For companies not interested in repowering any fleet engines (n=181)[3], many believe this will not provide enough cost-savings to be of value (43%) and/or are already planning to buy a new fleet (36%). One in five (20%) said that their company believes repowering its fleet would be too expensive and one in 10 (11%) lack information or research to support decision-making.

Figure 23: Reason(s) why company is not interested in repowering their fleet



Q33. Why is your company not interested in repowering any of its fleet engines? Base: n=181; those whose company is not considering repowering. Multiple responses accepted.

[3] Seventy-five percent of surveyed companies that have not repowered any existing fleet engines are not interested in doing so.

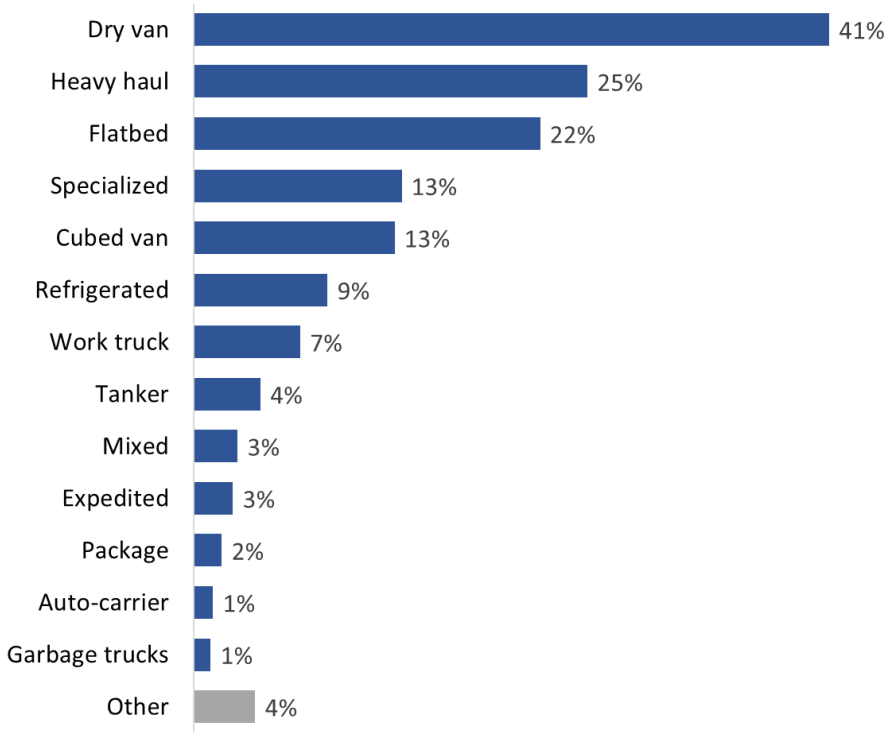
6. Fleet Profile

This section of the report presents a profile of the truck fleets of responding companies.

Many companies have dry vans in their fleet

Forty-one percent of freight transportation companies surveyed have dry vans in their fleet. Following this, exactly one-quarter have heavy haul trucks, while 22% have flatbed trucks. The full list of trucks can be found below in figure 24.

Figure 24: Type of trucks in fleet

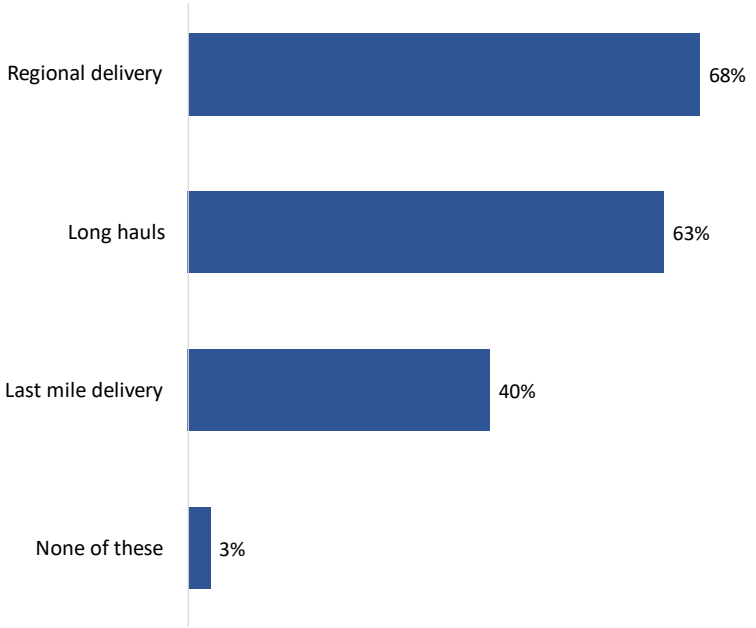


Q34. What type of trucks are in your company's fleet? Base: n=300; all respondents. Multiple responses accepted.

Most common use of trucks are regional deliveries and long hauls

Sixty-eight percent of companies surveyed use their trucks for regional deliveries, 63% for long hauls, and 40% last mile deliveries.

Figure 25: Use of trucks

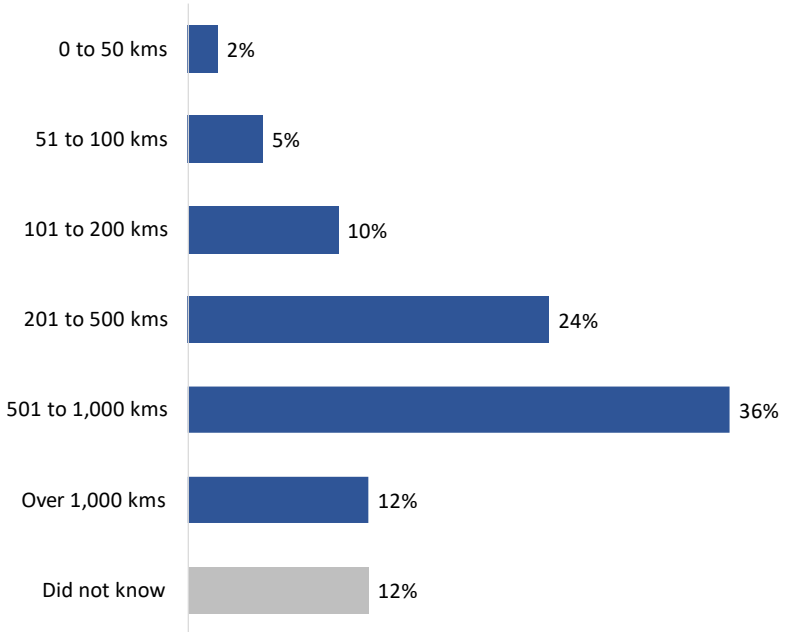


Q35. Are your trucks used for… Base: n=300; all respondents. Multiple responses accepted.

Majority travel more than 200 kilometres daily

The majority (72%) of the companies surveyed noted that their trucks travel more than 200 kilometres daily. Specifically, 24% travel between 201 and 500 kms daily, 36% travel between 501 to 1,000 kms, and 12% travel more than 1,000 kms daily.

Figure 26: Daily kilometers travelled



Q36. In an average day, how many kilometers do your trucks travel? Base: n=300; all respondents.

Appendix

1. Technical Specifications

The following specifications applied to this survey:

- A 15-minute telephone survey was administered to 300 representatives of the freight transportation industry using a computer-assisted telephone interviewing or CATI system.
- The target respondent was individuals involved in, or knowledgeable about, the management or implementation of trucking fuel efficiency programs and policies within the business' fleet of vehicles.
- The sample of freight transportation companies was obtained from Dun & Bradstreet Canada. The sample frame was drawn from NAICS code 4841 (General Freight Trucking)—specifically: 48411 (Local) and 48412 (Long Distance) and NAICS code 4842 (Specialized Freight [except Used Goods] Trucking Local—specifically: 484220 (Local) and 484230 (Long Distance).
- The distribution of completed surveys by NAICS code was:

NAICS code	No. of interviews
General freight: local (484110)	129
General freight: long distance (484121, 484122)	133
Specialized freight trucking excluding used goods (484220, 484230)	38

- The questionnaire was pre-tested in advance of the fieldwork to ensure that it measured what it intended to measure and that respondents understood the questions.
- Based on a sample of this size, the overall results can be considered accurate within 6%, 19 times out of 20).
- The response rate was 10%. The following table presents information about the final call dispositions for the survey and calculation of the response rate:

Total Numbers Attempted	**8,327**
Out-of-scope - Invalid	**1,638**
Unresolved (U)	**3,397**
No answer/answering machine	3,397
In-scope - Non-responding (IS)	**2,675**
Language barrier	19
Incapable of completing (ill/deceased)	45
Respondent refusal	1,281
Callback scheduled/not completed	1,291
Termination	39
In-scope - Responding units (R)	**617**
Completed interview	300
Quota reached	2
Not eligible	315

Response Rate[4] [R=R/(U+IS+R)]	10.16%

- The survey data was weighted by industry against the sample frame data from Dun & Bradstreet in order to ensure the sample is representative of the population. The table below shows the unweighted and weighted proportions by NAICS code.

NAICS code	Unweighted	Weighted
General freight: local (484110)	129	139
General freight: long distance (484121, 484122)	133	144
Specialized freight trucking excluding used goods (484220, 484230)	38	17

[4] This means that the response rate is calculated as the number of responding units [R] divided by the number of unresolved [U] numbers plus in-scope [IS] non-responding households and individuals plus responding units [R].

2. Survey Questionnaire

1st POINT OF CONTACT/GATEKEEPER:

Hello/bonjour, my name is [Interviewer's name]. Would you prefer to continue in English or French? / Préférez-vous continuer en anglais ou en français? May I speak to someone at your company who is most familiar with fuel efficiency tracking and management within your organization?

IF ASKED BY GATEKEEPER:

I'm calling on behalf of Phoenix SPI, a public opinion research company. We're conducting a survey for Natural Resources Canada about important issues facing the freight transportation industry across Canada. May I speak to the person who is most familiar with the fuel efficiency programs and policies within your company's fleet of vehicles?

- IF PERSON IS AVAILABLE, CONTINUE. GO TO RESPONDENT INTRODUCTION.
- IF NOT AVAILABLE, SCHEDULE CALL-BACK.

RESPONDENT:

Hello/Bonjour, my name is [INSERT NAME]. I'm calling on behalf of Phoenix SPI, a public opinion research company. We're conducting a survey for Natural Resources Canada with people who have knowledge about fuel efficiency tracking and management within the freight transportation industry. The results of this study will help guide future public policy on clean energy technology and addressing climate change.

The survey takes about 15 minutes and is voluntary. Your responses will be kept confidential and anonymous, and the information provided will be administered according to the requirements of the Privacy Act, the Access to Information Act, and any other pertinent legislation.

This survey is registered with the Canadian Research Insights Council's survey validation system. May I continue?

- Yes, now [CONTINUE]
- No, call later. Specify date/time: Date: Time:
- Refused [THANK/DISCONTINUE]

INTERVIEWER NOTE: IF A RESPONDENT ASKS ABOUT THE LEGITIMACY OF THIS SURVEY, SAY: This survey is registered with the Canadian Research Insights Council's survey validation system. The registration number is: 20221019-PH691.

A. Screening and Quotas

Before we start,

1. **May I confirm that your company operates freight transportation trucks?**

   01. Yes

02. No [TERMINATE]
03. Don't know [TERMINATE]

INTERVIEWER NOTE: IF ASKED WHAT FREIGHT TRANSPORTATION TRUCKS ARE, SAY: These typically include medium- and heavy-duty trucks used for moving goods and does not include vans.

2. **How knowledgeable would you say you are with the fuel efficiency programs and policies within your company's fleet of vehicles? This includes the tracking, management or implementation of such programs and policies. Are you… [READ LIST]**

   01. Very knowledgeable [SKIP TO Q4]
   02. Somewhat knowledgeable [SKIP TO Q4]
   03. Not very knowledgeable [ASK Q3]
   04. Not at all knowledgeable [ASK Q3]
   05. [DO NOT READ] Prefer not to answer [TERMINATE]

3. **[IF Q2=02] Can you direct me to someone at your company that is knowledgeable about the tracking, management or implementation of fuel efficiency programs and policies within your company?**

   01. Yes [GO TO RESPONDENT INTRODUCTION WITH NEW PERSON]
   02. No [SAY: May I speak to your receptionist again? GO TO GATEKEEPER INTRODUCTION]
   03. No one at my company is knowledgeable about these programs [TERMINATE]

4. **In which province or territory is your company's head office located? [DO NOT READ LIST]**

   01. Alberta
   02. British Columbia
   03. Manitoba
   04. New Brunswick
   05. Newfoundland and Labrador
   06. Northwest Territories
   07. Nova Scotia
   08. Nunavut
   09. Ontario
   10. Prince Edward Island
   11. Quebec
   12. Saskatchewan
   13. Yukon Territory
   14. Prefer not to answer [TERMINATE]

5. **How many employees work for your company? Please include part-time employees as full-time equivalents. [DO NOT READ LIST]**

   01. Less that 5 [MICRO]
   02. 5-99 [SMALL]
   03. 100-249 [MEDIUM]
   04. 250-499 [MEDIUM]
   05. 500-999 [LARGE]
   06. 1000 or more [LARGE]

07. Prefer not to answer [TERMINATE]

6. **And, how many of these employees are employed as drivers for your company?**

01. [NUMERIC OPEN; ACCEPTED RANGE = 1-9999]
02. Don't know

B. Retrofits

These next questions are about retrofits to your company's freight transportation trucks.

To start,

7. **Is your fleet… [READ LIST]**

01. Private
02. For hire
03. Both
04. [DO NOT READ] Don't know

8. **How many trucks are in your company's fleet?**

01. [NUMERIC OPEN; ACCEPTED RANGE = 1-9,999]
02. Don't know

9. **Approximately what percentage of trucks in your fleet are less than five years old?**

01. [NUMERIC OPEN; ACCEPTED RANGE = 0-100%]
02. Don't know

10. **In the past 3 years, has your company implemented any retrofits to its truck fleet? [INTERVIEWER NOTE: IF ASKED, SAY: 'By retrofits we are referring to upgrades made to your truck(s) with energy efficient devices'.]**

01. Yes
02. No [SKIP TO Q13]
03. Don't know [SKIP TO Q13]

11. **[IF Q10=01] How many of your company's truck fleet has been retrofitted in the past 3 years?**

01. [NUMERIC OPEN]
02. Don't know

12. **[IF Q10=01] Which of the following retrofits, if any, has your company completed in the past 3 years? [RANDOMIZE/READ LIST; ACCEPT MULTIPLE RESPONSES] [INTERVIEWER NOTE: IF ASKED, PLEASE REMIND RESPONDENTS THAT WE ARE ASKING ABOUT RETROFITS TO EXISTING TRUCKS.]**

01. Auxiliary power units
02. Side skirts
03. Boat tails
04. Cab heaters

05. Cab coolers
06. Aerodynamic mud flaps
07. Battery HVAC
08. Predictive cruise
09. Diesel-electric refrigeration units
10. Electric refrigeration units
11. Low rolling resistant tires
12. Wide based tires
13. Telematics
14. Tractor or trailer solar panels
15. Wheel covers
16. Gap reducers
17. Cab extenders
18. Route optimization technology
19. [DO NOT READ] Don't know
20. [DO NOT READ] None of these

13. **What barriers, if any, does your company face when it comes to retrofitting its fleet? [DO NOT READ LIST; ACCEPT MULTIPLE RESPONSES]**

01. Cost
02. Lack of knowledge/expertise
03. Lack of human resources/time
04. Competing company priorities
05. Lack of management buy-in
06. Other [specify]
07. Don't know
08. No barriers

C. Fleet Energy Assessments

14. **Has your company ever had a third party conduct an energy assessment of your fleet? [INTERVIEWER NOTE: IF ASKED, SAY: 'An energy fleet assessment is an analysis of your fleet's performance that can be used to help your company decide whether to invest in fuel-reducing technologies and retrofit your fleet.']**

01. Yes
02. No [SKIP TO Q16]
03. Don't know [SKIP TO Q16]

15. **[IF Q14=01] How important are fleet energy assessments when determining which retrofits should be made to your fleet? [READ LIST]**

01. Not at all important
02. Not very important
03. Somewhat important
04. Very important
05. [DO NOT READ] Don't know

SKIP TO Q18 UNLESS Q14=02 OR 03

16. **[IF Q14=02,03] Would your company ever consider having a third party conduct an energy assessment of its fleet?**

    01. Yes [SKIP TO Q18]
    02. No
    03. Don't know

17. **[IF Q16=02,03] Why hasn't your company considered a fleet energy assessment? [DO NOT READ LIST; ACCEPT MULTIPLE RESPONSES]**

    01. Cost/they are too expensive
    02. Lack of awareness/didn't know about energy assessments
    03. Don't trust the results
    04. Lack of value/it's not worth the cost
    05. Don't think one is needed/not planning to retrofit fleet
    06. Lack of time to look into/meet with auditors
    07. Lack of management buy-in
    08. Other [specify]
    09. Don't know

D. Government Programs

18. **In your view, how important, if at all, are government funding programs that support fleet retrofits? [READ LIST]**

    01. Not at all important
    02. Not very important
    03. Somewhat important
    04. Very important
    05. [DO NOT READ] Don't know

19. **Are you aware of the Government of Canada's Green Freight Assessment Program?**

    01. Yes [SKIP TO Q21]
    02. No
    03. Don't know

20. **[IF Q19=02,03] The Green Freight Assessment Program, or GFAP, provides funding to companies for fleet retrofits and fleet energy assessments. Have you heard of this program?**

    01. Yes
    02. No
    03. Don't know

21. **Are you aware of any [INSERT BASED ON Q4: provincial / territorial] rebate programs for fleet retrofits?**

    01. Yes
    02. No

03. Don't know

22. **Has your company participated in any government funding programs for fleet retrofits?**

    01. Yes
    02. No [SKIP TO Q24]
    03. Don't know [SKIP TO Q24]

23. **[IF Q22=01] Thinking about the government funding programs your company has participated in for fleet retrofits, how was funding provided? Was it… [READ LIST]**

    01. A grant
    02. A point of sale rebate
    03. A cost sharing contribution
    04. A tax credit
    05. [DO NOT READ] Other [Specify]
    06. [DO NOT READ] Don't know

24. **What type of funding would your company prefer to receive [IF Q22=02,03: if / Q22=01: when] participating in a government funding program for fleet retrofits? [READ LIST]**

    01. A grant
    02. A rebate
    03. A cost sharing contribution
    04. A tax credit
    05. [DO NOT READ] Other [Specify]
    06. [DO NOT READ] Don't know

25. **[IF Q10 ≠ 1 AND Q13=01] Earlier you said that cost is a barrier to retrofitting your company's fleet. Would the availability of government funding motivate your company to consider retrofitting its fleet?**

    01. Yes
    02. No [SKIP TO Q27]
    03. Don't know [SKIP TO Q27]

26. **What percentage of the fleet retrofitting cost would your company need funded by government incentives to make retrofitting financially feasible? Would you say… [READ LIST]**

    01. Less than 10%
    02. 10% to just under 25%
    03. 25% to just under 35%
    04. 35% to just under 50%
    05. 50% or more
    06. [DO NOT READ] Don't know

E. Repowering

Changing topics,

27. **Are you aware that repowering your existing truck engines can be a cost-effective alternative to purchasing a new OEM vehicle? An engine repower consists of replacing an existing engine with a new one that has been certified to meet cleaner emission standards. [INTERVIEWER NOTE: IF ASKED, 'OEM' REFERS TO ORIGINAL EQUIPMENT MANUFACTURER]**

    01. Yes
    02. No
    03. Don't know

28. **Has your company repowered any of existing fleet engines?**

    01. Yes
    02. No [SKIP TO Q32]
    03. Don't know [SKIP TO Q32]

29. **[IF Q28=01] What percentage of your company's fleet engines have been repowered?**

    01. [NUMERIC OPEN; ACCEPTED RANGE = 1-100%]
    02. Don't know

30. **[IF Q28=01] Which fuel types do your company's repowered fleet use? [DO NOT READ; ACCEPT MULTIPLE RESPONSES]**

    01. Propane
    02. Compressed natural gas (CNG)
    03. Renewable natural gas (RNG)
    04. Hydrogen
    05. Ethanol
    06. Other [Specify]
    07. Don't know

SKIP TO Q34 UNLESS Q29=LESS THAN 100%

31. **[IF Q29=<100%] Would your company consider repowering more of its fleet engines if some type of government funding was available?**

    01. Yes
    02. No
    03. Don't know

SKIP TO Q34

32. **[IF Q28=02,03] Is your company thinking about repowering any of its fleet engines in the next 2 to 3 years?**

    01. Yes
    02. No
    03. Don't know

33. **[IF Q32=02] Why is your company not interested in repowering any of its fleet engines? [DO NOT READ LIST; ACCEPT MULTIPLE RESPONSES]**

01. Cost/too expensive
02. No value/don't think it will provide enough cost-savings
03. Lack of information/research
04. No need/planning to buy a new fleet
05. Lack of management buy-in
06. Other [specify]
07. Don't know

F. Fleet Profile

These last questions are about your company's fleet.

34. **What type of trucks are in your company's fleet? [IF HELPFUL, PROMPT BY READING SOME ITEMS; ACCEPT MULTIPLE RESPONSES]**

01. Refrigerated
02. Package
03. Specialized
04. Expedited
05. Tanker
06. Flatbed
07. Mixed
08. Dry van
09. Heavy haul
10. Auto-carrier
11. Garbage trucks
12. Cubed van
13. Work truck
14. Other [Specify]
15. Don't know

35. **Are your trucks used for… [READ LIST; ACCEPT MULTIPLE RESPONSES]**

01. Last mile delivery
02. Regional delivery
03. Long hauls
04. [DO NOT READ] None of these
05. [DO NOT READ] Don't know

36. **In an average day, how many kilometers do your trucks travel?**

01. [NUMERIC OPEN; ACCEPTED RANGE = 1-9999]
02. Don't know

37. **Does your company offer eco-driving training to its truck drivers? Eco-driving training refers to any training designed to improve drivers' knowledge of fuel efficiency techniques.**

01. Yes
02. No
03. Don't know

Finally,

38. **What's your position within the company? [DO NOT READ LIST. ACCEPT ONE RESPONSE]**

    01. Owner/operator
    02. Operation manager
    03. Freight manager
    04. General manager
    05. Administrator
    06. Other [Specify]
    07. Prefer not to answer

Thank you very much for your time and participation. The results of the research will be available to the general public, on the Library and Archives website, in the coming months.