KANTAR

Natural Resources Canada | Ressources naturelles Canada

Green Freight Programs Survey on Freight Industry 2022

Final Report

Prepared for Natural Resources Canada

Supplier name: Kantar

Contract number: # 23483-220939/001/CY

Contract value: $88,758.68

Award date: January 06, 2022

Delivery date: March 31, 2022

Registration number: POR # 084-21

For more information on this report, please contact the NRCAN at: nrcan.por-rop.rncan@canada.ca

Ce rapport est aussi disponible en français.

Green Freight Programs Survey on Freight Industry

Final Report

Prepared for Natural Resources Canada by Kantar

March 2022

Natural Resources Canada (NRCan) commissioned Kantar to conduct a public opinion research survey of the Canadian freight transportation industry. The aim of this research was to assess perspectives on reducing fuel use and improving energy efficiency in freight transportation among the heavy-duty trucking industry, as well as establish a baseline for future measures. A total 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 were surveyed by telephone in February and March of 2022. This publication reports on the findings of this research.

Cette publication est aussi disponible en français sous le titre: 2022 Sondage des programmes de transport de marchandises éco-énergétiques sur l'industrie du transport de marchandises

Catalogue Number: M144-294/1-2022E-PDF

International Standard Book Number (ISBN): 978-0-660-43566-4

Related publications (registration number): Sondage de 2022 des programmes de transport de marchandises écoénergétiques sur l'industrie du transport de marchandises

Catalogue Number: M144-294/1-2022E-PDF

ISBN: 978-0-660-43567-1

Table of Contents

1. Executive Summary

1.1. Research Purpose and Objectives

The SmartWay program was designed to help Canadian freight transportation businesses improve supply chain sustainability through measuring, benchmarking, and improving freight transportation efficiency and thus, resulting in reduced fuel costs for businesses while transporting goods in the cleanest most efficient way possible. While the program was launched in the US in 2004 by the Environmental Protection Agency (EPA), in 2012, Natural Resources Canada (NRCan) began to administer the program in Canada.

Responsibility to reduce emissions from supply chains is becoming increasingly important in customer and corporate decision-making. As a result, businesses are reaching out to business partners with similar goals, turning fuel efficiency and emissions reductions into a business-to-business proposition. By moving goods in the cleanest, most efficient way possible, SmartWay partners foster higher productivity while protecting the environment.

1.2. Research Objectives

The overall objective of the research was to assess perspectives on reducing fuel use and improving energy efficiency in freight transportation among the heavy-duty trucking industry, as well as to follow-up on a baseline survey conducted for Natural Resources Canada in November 2018.

The specific research objectives included:

- Assess familiarity with the SmartWay freight transportation partnership program;
- Determine the types of fuel efficiency information that businesses track;
- Understand the perceived importance of tracking fuel consumption;
- Understanding what, if any, fuel reduction activities have been implemented/managed in the last year;
- Determine which, if any, green freight programs are used to help track fuel use;
- Understand what, if any, fuel reduction technologies the heavy-duty trucking industry has invested in;
- Identify barriers to adopting fuel reduction activities/technologies;
- Determine the types and sources of information on fuel efficiency that are considered useful;
- Understand what impact, if any, the COVID-19 pandemic has had on the freight industry.

The results of this research will be used to inform program and policy development for Natural Resources Canada and to address several Government of Canada ministerial priorities such as investing in clean energy

technology delivering benefits to the environment and the economy and taking national leadership on climate change by protecting the environment and growing the economy.

1.3. Methodology

The findings of this study are based on a telephone survey conducted from February 18 to March 22, 2022, among 300 representatives of the Canadian freight transportation industry, representing general freight trucking (local and long distance) and specialized freight trucking (excluding used goods), who are involved in or at least knowledgeable about the management or implementation of trucking fuel efficiency programs and policies within their business' fleet of vehicles.

The survey obtained an overall response rate of 10.7%. The margin of error is +/-6% at 95% confidence level, 19 times out of 20.

The sample was drawn from a purchased list of NAICS codes 4841 (general freight trucking) and 4842 (specialized freight trucking - excluding used goods). A census-style approach was undertaken, meaning that all available sample was drawn and used to achieve the completions outlined below:

- 484110: General freight trucking, local: N=129
- 484121 and 484122: General freight trucking, long distance: N=133
- 484220 and 484230: Specialized Freight Trucking - excluding used goods: N=38

To meet the overall goal of identifying perspectives on reducing fuel use and improving energy efficiency, the study explores attitudes toward fuel consumption by assessing the importance of tracking fuel consumption and fuel efficiency activities and participation in such activities, as well as the perceived barriers to adopting fuel reduction activities and technologies. The study also explores familiarity with, participation in, and usage of green freight transportation programs, with a focus on the SmartDriver Training program, the SmartWay Transport Partnership, Green Freight Assessment Program and Zero Emission Vehicle Infrastructure Program. The study also addressed the impact of the COVID-19 pandemic on the freight transportation business.

1.3.1. Sub-group analyses, statistical significance and rounding

Analysis was undertaken to establish any differences based on business characteristics such as location (region), type of fleet (private, for-hire and both), number of trucks, type of trucks, size of business, use of tracking, use of fuel reduction technologies or activities and familiarity with the green freight transportation programs noted above. Further, comparisons to the results of the baseline survey conducted for Natural

Resources Canada in November 2018 were also undertaken. Only differences significant at the 95% confidence level are presented in this report[1].
The numbers presented throughout this report are rounded to the closest full number. Totals may not add up to 100%.

1.4. Contract Value

The total contract value for the project was **$88,758.68** including applicable taxes.

1.5. Statement of Political Neutrality

I hereby certify as a representative of Kantar 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 include information on electoral voting intentions, political party preferences, standings with the electorate or ratings of the performance of apolitical party or its leaders.

Tanya Whitehead
Kantar
Vice President

1.6. Summary of Findings

Respondent Profile

Three-hundred representatives from the Canadian freight transportation industry were interviewed. Half of the respondents surveyed were from businesses with fewer than 10 employees (51%) while the remaining 49% had 10 or more employees.

Businesses represented in this survey were distributed regionally as follows: Atlantic Canada (6%), Quebec (31%), Ontario (26%) the Prairies (27%) and BC (9%).

Businesses surveyed had a variety of fleet types: 39% had exclusively private fleets, 35% had exclusively for-hire fleets, and 24% had a combination of both.

[1] The number of percentage points that is considered statistically significant varies based on the size of the sample. For example, 3% difference would be signification for a sample of n=1,000 but not for a sample of n=300.

Furthermore, 46% of businesses had fewer than 10 trucks while 48% had 10 or more trucks in their fleet.

Businesses indicated they had a variety of trucks in their fleets. Most common were dry vans (30%), followed by flatbeds (28%), heavy haul trucks (25%) and specialized (21%). Further, trucks tend to be used mostly for regional (62%) (within a particular region, typically less than 200 km from home terminal) or long-haul (58%) (more than 200 km from the home terminal) while some (18%) are last mile (the final step in the supply chain where a package transfer from a business to a consumer).

Green Freight Programs

Familiarity and participation in green transportation programs among the Canadian freight transportation industry remains the same as found in the 2018 survey, and continues to be relatively low. A little more than one-third (36%) of Canadian freight transportation businesses report being familiar (4 or 5 on a 5-point scale) with at least one of the following Canadian green transportations programs: SmartDriver Training Program, Green Freight Assessment Program, SmartWay Transport Partnership and/or Zero Emission Vehicle Infrastructure Program.

No changes have been observed since the 2018 survey in relation to participation in green transportation programs with approximately one-in-four (26%) businesses participating in at least one. Participation continues to be strongest in the Smart Driver Training (11%) programs and the SmartWay Transport Partnership (9%), followed by the Zero Emission Vehicle Infrastructure Program (8%) Green Freight Assessment program (5%) and “other” green freight transportation programs (4%).

Familiarity varies by program, with the SmartDriver Training Program having the highest familiarity (21%) followed by the SmartWay Transport Partnership (17%), Zero Emissions Vehicle Infrastructure Program (16%) and Green Freight Assessment Program (11%). As in 2018, businesses that are more familiar with green transportation programs are also more likely to participate in them.

Tracking Fuel Consumption and Investment in Fuel Reduction Technologies

Similar to 2018, a majority (82%) of the businesses in the Canadian freight transportation industry consider tracking fuel consumption important (4 or 5 on a 5-point scale) with two-thirds (66%) considering it “very” important. In 2018, demographic differences between businesses played a role in the perceptions of the importance of tracking fuel consumption. In 2022, perceptions are similar regardless of demographics, especially with regard to fuel tracking.

Given the perceived importance of tracking fuel consumption, it is not surprising to find that virtually all businesses in the Canadian freight transportation industry (98%) track at least some information related to the fuel efficiency of their fleets and/or invest in at least one fuel reduction technology or activity (92%).

The most commonly tracked information includes:

- Fuel consumption (90%);

- Total kilometers travelled (89%);
- Driving habits (69%);
- Average speed (65%)
- Idle time (63%);
- Empty kilometers travelled annually (51%); and
- Annual average payload (51%).

The most common technologies invested in or activities undertaken include:

- Electronic on-board devices (67%);
- Auxiliary power units and/or cab heaters (59%);
- Driver-trainer or incentive programs (50%);
- Tire technology (50%);
- Anti-idling equipment (43%);
- Aerodynamic equipment - truck (40%);
- Improved trailer capacity utilization programs (33%);
- Aerodynamic equipment- trailer (31%); and
- Engine power (30%)

There has been a decrease in 2022 from 2018 in terms of investment in a number of technologies: electronic on-board devices (to 67% from 77% in 2018); auxiliary power units and/or cab heaters (59% from 66%) and anti-idling equipment (43% from 51%) This may be a function of previous investments made by businesses and more modern fleets that come with these technologies as standard.

Driver Training

Two-thirds (66%) of freight transportation businesses allocate at least some time annually for training, while just over one-quarter (28%) do not allocate any time for driver training. Just under one-in-five (17%) of freight transportation businesses offer eco-driver training in particular.

Barriers to Adopting or Implementing Fuel Reduction Activities or Technologies

Most Canadian freight transportation businesses (89%) say they face barriers when trying to adopt or implement fuel reduction activities or technologies. Competing priorities are a larger barrier in 2022 than 2018 (cited by 46% of respondents vs. 36%) while a lack of buy-in from senior management as a barrier has reduced compared to 2018 (9% vs. 14%). Other common barriers include uncertainty about the return on investment (51%), lack of human resources or time (47%), uncertainty about the performance of fuel reduction activities or technologies (44%), competing operational priorities (36%), lack of funds (34%) and lack of knowledge (33%).

Information on Fuel Efficiency

Canadian freight transportation businesses were asked to identify the types of information on fuel efficiency they consider most useful from a set list. Similar to 2018, about three-quarters of businesses consider on-road performance of energy efficient technologies (74%) and fuel consumption ratings for heavy duty vehicle (HDV) (72%) to be useful. More than half of businesses (56%) continue to find a business case for adopting energy efficient technologies and practices to be useful. Somewhat fewer consider data on the energy efficiency of Canada's HDV fleet (45%) and stories on fleets transition to decarbonizing operations (41%) to be useful.

Impact of COVID-19

Respondents were asked about the impact of the COVID-19 pandemic on their business. Just over half (51%) indicated the COVID-19 pandemic had a negative impact (1 or 2 on a 5-point scale), while 15% indicated the COVID-19 pandemic had a positive impact on their business.

The top three reasons cited as a negative impact included:

- Lack of workers, not enough drivers (40%);
- Government mandates, restrictions and/or lockdowns (22%); and
- The pandemic slowed down the general operation of the business (12%)

The top three reasons cited as a positive impact included:

- Increased business, service demand and/or volume of work (53%);
- More people were staying home (15%); and
- Their business was considered an essential service (10%)

Businesses were also asked about the impact of the COVID-19 pandemic on investments related to fuel reduction, new truck purchases and retrofitting. About two in three respondents indicated the pandemic had no impact on investment in fuel reduction (64%) or retrofitting (67%), while 49% indicated it had no impact with regard to new truck investment.

Demographic Differences

Analysis was undertaken to establish any differences based on business characteristics such as region, type of fleet (private, for-hire and both), number of trucks, type of trucks, etc. While most business characteristics have no impact on the business' perspectives and behaviour related to reducing fuel use and improving energy efficiency, the number of trucks does tend to play a role.

Businesses with 20+ trucks in their fleet tend to have different perspectives and behaviours related to fuel efficiency. More specifically:

- They are more familiar with the SmartWay Transport Partnership than businesses with fewer than 20 trucks (29% vs. 7-9%);
- They are more likely to participate in at least one green transportation program (42% vs. 15-19%);
- They are more likely to invest in more technologies or activities compared to those who have fewer trucks; and
- They are more likely to offer the training compared to those with fewer than 20 trucks (28% vs. 12-16%).

Conclusions

In summary, Canada's freight transportation industry still has low awareness of Natural Resources Canada's green transportation programs, however research outcomes indicate they have a strong interest in improving energy efficiency.

Low participation

Participation in green transportation programs among the freight transportation industry continues to be relatively low and this is especially true for businesses with fleets of private vehicles or those with less than 20 trucks. Low participation is likely driven by low familiarity with the programs given the high importance of tracking fuel consumption among businesses as well as their high participation in tracking activities and investment in fuel-efficient technologies and activities.

Barriers on fuel efficiency activities or technologies

A majority of the freight transportation industry invest in at least one fuel reduction technology or activity however, most of them face barriers when trying to adopt or implement fuel reduction activities or technologies. Addressing barriers related to a lack of knowledge on fuel efficiency activities or technologies and uncertainties about the performance of various fuel-efficient technologies and the return on investment can further encourage the uptake of tracking fuel-efficiency and fuel-efficient technologies among the freight transportation industry.

Outreach smaller fleets (less than 20 trucks)

Furthermore, outreach to businesses that have smaller fleets (less than 20 trucks) may also help to improve uptake given their lower overall uptake and participation in green freight programming and adoption of fuel efficiency tracking and technology.

Impact of COVID-19

It is important to consider the impact of the COVID-19 pandemic on the results of this research. Specifically, over half of businesses indicated that COVID-19 pandemic has had a negative impact on their business which is likely to have an impact on willingness and financial ability of freight transportation industry to invest in this area along with the capacity given the labour shortages experienced.

2. Detailed Findings

2.1. Familiarity and Usage of Green Transportation Programs and Activities

2.1.1. Familiarity with the Green Transportation Programs

Familiarity and participation in green transportation programs among the Canadian freight transportation industry remains the same as found in the 2018 survey and continues to be relatively low. A little more than one-third (36%) of freight transportation businesses report being familiar (4 or 5 on a 5-point scale) with at least one of the following green transportations programs:

- SmartDriver Training Program
- Green Freight Assessment Program
- SmartWay Transport Partnership
- Zero Emission Vehicle Infrastructure Program

Two-thirds (64%) report “no familiarity at all” with any of the green transportation programs noted above.

Familiarity varies by program, with the SmartDriver Training Program having the highest familiarity (21%) followed by the SmartWay Transport Partnership (17%), Zero Emissions Vehicle Infrastructure Program (16%) and the Green Freight Assessment Program (11%).

Similar to 2018, familiarity with the various programs does not vary based on business demographics with the exception of familiarity with the SmartWay Transport Partnership where:

- Businesses with fleets of private vehicles are less familiar with the SmartWay Transport Partnership (5%) than businesses with for hire (33%) or both (14%) in their fleet;
- Businesses with 20+ trucks are more familiar with the SmartWay Transport Partnership than those with less than 20 trucks (29% vs. 7-9%); and
- Businesses with expedited and dry vans in their fleet are more familiar with the SmartWay Transport Partnership than those with other types of vehicles (29-37% vs. 5-21%).

Businesses who are familiar with at least one green transportation program have higher familiarity among other Canadian green transportation programs. For example, those who are familiar with the SmartDriver Training Program are more familiar with the SmartWay Transport Partnership (52% vs. 14%) and the Green Freight Assessment Program (59% vs. 16%). Complete details can be found in the tables below.

Exhibit 2.1.1.a Familiarity with the Green Transportation Programs by Total

Familiarity with the Green Transportation Programs Top 2 Box (4 or 5 on a 5-point scale)	2022 TOTAL	2018 TOTAL
Base=actual	(300) %	(300) %
NET: Any Program	36	30
Smart Driver Training	21	21
Green Freight Assessment Program	11	17
SmartWay Transport Partnership	17	10
Zero Emission Vehicle Infrastructure Program	16	N/A
None of the above	64	70

Q11. Using a scale of 1 to 5 where 1 is not at all familiar and 5 is very familiar, how familiar are you with the following Canadian green transportation programs?

Exhibit 2.1.1.b Familiarity with the Green Transportation Programs by Total, Type of Fleet, Number of Trucks, Number of Employees

Familiarity with the Green Transportation Programs Top 2 Box (4 or 5 on a 5-point scale)	2022 TOTAL	Type of Fleet			Number of Trucks				Number of Employees			
		Private	For Hire	Both	Less than 5	5-9	10-19	20 or more	Less than 4	5-9	10-49	50+
		(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)	(N)	(O)	(P)
Base=actual	(300) %	(115) %	(107) %	(72) %	(79) %	(56) %	(47) %	(97) %	(91) %	(60) %	(105) %	(39) %
NET: Any Program	36	24	49F	36	27	30	23	44IK	30	25	36	61MNO
Smart Driver Training	21	14	24	26	15	23	15	25	15	15	20	36MN
Green Freight Assessment Program	11	8	16	8	7	13	2	9	10	8	10	15
SmartWay Transport Partnership	17	5	33FH	14	8	7	9	29IJK	7	12	16	47MNO
Zero Emission Vehicle Infrastructure Program	16	11	23F	15	14	16	10	14	15	13	15	21
None of the above	64	76G	51	64	73L	70	77L	56	70P	75P	64P	39

Q11. Using a scale of 1 to 5 where 1 is not at all familiar and 5 is very familiar, how familiar are you with the following Canadian green transportation programs?

Note: Letters denote statistically significant difference. For example, if there is a B then the result is significantly higher than the corresponding result in column B.

Exhibit 2.1.1.c Familiarity with the Green Transportation Programs by Familiarity with Program – Transport Partnership, Green Freight, Smartdriver Training, Zero Emission Vehicle Infrastructure Program

Familiarity with the Green Transportation Programs Top 2 Box (4 or 5 on a 5-point scale)	2022 Total	Familiar with Program - Transport Partnership		Familiar with Program - Green Freight		Familiar with Program – Smart Driver Training		Familiar with Program - Zero Emission Vehicle Infrastructure Program	
		Yes (E)	No (F)	Yes (G)	No (H)	Yes (I)	No (J)	Yes (K)	No (L)
Base=actual	(300) %	(52) %	(247) %	(33) %	(265) %	(63) %	(233) %	(50) %	(246) %
NET: Any Program	36	100F	23	100H	28	100J	19	100L	24
Smart Driver Training	21	52F	14	59H	16	100J	-	48L	15
Green Freight Assessment Program	11	31F	7	100	-	30J	6	36L	6
SmartWay Transport Partnership	17	100F	-	49H	13	42J	9	39L	12
Zero Emission Vehicle Infrastructure Program	16	38F	12	55H	11	38J	10	100L	-
None of the above	64	-	77E	-	72G	-	81I	-	76K

Q11. Using a scale of 1 to 5 where 1 is not at all familiar and 5 is Very familiar, how familiar are you with the following Canadian green transportation programs?
Note: - = no data, Letters denote statistically significant difference. For example, if there is a B then the result is significantly higher than the corresponding result in column B.

Exhibit 2.1.1.d Familiarity with the Green Transportation Programs by Type of Truck

Familiarity with the Green Transportation Programs Top 2 Box (4 or 5 on a 5-point scale)	2022 TOTAL	Type of Truck						
		Refrig-erated (A)	Package (B)	Special-ized (C)	Expedited (D)	Tanker (E)	Flatbed (F)	Mixed (G)
Base=actual	(300) %	(41) %	(30) %	(62) %	(16) %	(37) %	(85) %	(28) %
NET: Any Program	36	46N	40	38N	62FMN	29	30	46N
Smart Driver Training	21	30N	24	22	40N	19	17	24
Green Freight Assessment Program	11	12	9	10	24L	5	9	17L
SmartWay Transport Partnership	17	28MN	16	17	37ELMN	8	16	21
Zero Emission Vehicle Infrastructure Program	16	17	23	12	32F	15	8	28F
None of the above	64	54	60	62	38	71	70DH	54

Q11. Using a scale of 1 to 5 where 1 is not at all familiar and 5 is Very familiar, how familiar are you with the following Canadian green transportation programs?
Note: - = no data, Letters denote statistically significant difference. For example, if there is a B then the result is significantly higher than the corresponding result in column B.

Exhibit 2.1.1.d Familiarity with the Green Transportation Programs by Type of Truck cont'd

Familiarity with the Green Transportation Programs Top 2 Box (4 or 5 on a 5-point scale)	2022 TOTAL	Type of Truck						
		Dry Van (H)	Heavy Haul (I)	Auto-carrier (J)	Garbage Trucks (K)	Cubed Van (L)	Work Truck (M)	Other (N)
Base=actual	(300) %	(92) %	(77) %	(3) %	(7) %	(37) %	(47) %	(77) %
NET: Any Program	36	46FMN	32	31	13	30	27	20
Smart Driver Training	21	27N	19	-	-	20	19	10
Green Freight Assessment Program	11	10	8	-	-	-	4	6
SmartWay Transport Partnership	17	29EILMN	14	-	-	8	7	5
Zero Emission Vehicle Infrastructure Program	16	14	14	31	13	11	14	13
None of the above	64	54	68	69	87	70	73DH	80ACDGH

Q11. Using a scale of 1 to 5 where 1 is not at all familiar and 5 is Very familiar, how familiar are you with the following Canadian green transportation programs?
Note: - = no data, Letters denote statistically significant difference. For example, if there is a B then the result is significantly higher than the corresponding result in column B.

2.1.2. Driver Training

Two-thirds (66%) of freight transportation businesses allocate at least some time annually for training. Twenty-nine percent offer less than 10 hours of training per year, while 30% offer 11-50 hours, and seven per cent offer over 50 hours of training per year. Just over one-quarter (28%) do not allocate any time for driver training.

A number of demographic and attitudinal factors appear to be related to whether or not a business allocates annual training time to their drivers. In particular, businesses that offer no training:

- Are more likely to be in Quebec compared to other parts of Canada (47% vs. 16-29%);
- Have less than five trucks (61% vs. 10-28%); and
- Are more likely to have private fleets (41%) than for hire (13%) or mixed fleets (30%).

Further, a number of attitudinal and awareness factors play a role in the whether or not a business allocates annual training time to their drivers. In particular, a business is more likely to offer at least some annual driver training if the business:

– Believes it is important to track fuel consumption in their fleet (14% vs. 61%);

– Currently uses some fuel reduction technologies or activities (68% vs. 45%); and

– Has some familiarity with a program such as the SmartDriver Training (82% vs. 63%), the Green Freight Assessment Program (81% vs. 65%), the SmartWay Transport Partnership (81% vs. 64%) and/or the Zero Emission Vehicle Infrastructure Program (79% vs. 64%).

Just under one-in-five (17%) of freight transportation businesses offer eco-driver training in particular. Businesses with more than 20 trucks are more likely to offer the training compared to those with fewer than 20 (28% vs. 12-16%) as are those who are familiar with SmartDriver Training program (35% vs. 13%), Green Freight Assessment Program (35% vs. 15%) and the SmartWay Transport Partnership (29% vs. 15%). Familiarity with Zero Emission Vehicle Infrastructure Program does not appear to increase the likelihood of offering eco-training to drivers.

Exhibit 2.1.2.a. Annual Hours of Driver Training by Total, Region, Type of Fleet, Number of Trucks

Annual Hours of Driver Training	2022 TOTAL	Region					Type of Fleet			Number of Trucks			
		Atlantic (A)	Quebec (B)	Ontario (C)	Prairies (D)	BC (E)	Private (F)	For Hire (G)	Both (H)	Less than 5 (I)	5-9 (J)	10-19 (K)	20 or more (L)
Base= Actual	(300) %	(18) %	(92) %	(80) %	(80) %	(26) %	(115) %	(107) %	(72) %	(79) %	(56) %	(47) %	(97) %
None	28	29	47CDE	16	20	18	41G	13	30G	61JKL	28L	17	10
Less than 10 hours	29	39	32	23	31	26	30	27	29	19	35	42I	33
11-50 hours	30	22	13	49B	33B	32B	20	45FH	27	9	28I	33I	40I
50+ hours	7	5	2	8	11B	15B	3	11F	10	3	3	5	14I
DK/Refused	5	5	6	4	4	8	7	3	4	9	5	2	4

QNEW7. For each driver, approximately how many hours per year does your company allocate for driver training? Is it…
*Note: * = less than 0.5%, - = no data*
Note: - = no data, Letters denote statistically significant difference. For example, if there is a B then the result is significantly higher than the corresponding result in column B.

Exhibit 2.1.2.a. Annual Hours of Driver Training by Total, Track, Fuel Reduction Tech/Activity, Familiarity with Program for Transport Partnership, Green Freight, Smart Driver Training and Zero Emissions

Annual Hours of Driver Training		Fuel Tracking Activities		Fuel Reduction Tech/Activity		Familiarity with Program – Transport Partnership		Familiarity with Program – Green Freight		Familiarity with Program – Smart Driver Training		Familiarity with Program – Zero Emission	
	2022 Total	Yes (A)	No (B)	Yes (C)	No (D)	Yes (E)	No (F)	Yes (G)	No (H)	Yes (I)	No (J)	Yes (K)	No (L)
Base= Actual	(300) %	(294) %	(6) %	(278) %	(22) %	(52) %	(247) %	(33) %	(265) %	(63) %	(233) %	(50) %	(246) %
None	28	27	86A	26	50C	12	31E	15	29	13	32I	14	31K
Less than 10 hours	29	29	14	30	20	18	31	23	30	22	31	23	29
11-50 hours	30	31	-	31	22	52F	26	41	29	50J	25	42	29
50+ hours	7	7	-	8	4	11	7	18H	6	11	6	14	6
DK/Refused	5	6	-	6	4	7	5	4	6	5	5	7	5

QNEW7. For each driver, approximately how many hours per year does your company allocate for driver training? Is it…
*Note: * = less than 0.5%, - = no data, Letters denote statistically significant difference. For example, if there is a B then the result is significantly higher than the corresponding result in column B*

Exhibit 2.1.2.b. Eco-driver Training by Total, Number of Trucks, Track, Familiarity with Program for Transport Partnership, Green Freight, Smart Driver Training and Zero Emissions

Eco Driver Training		Number of Trucks				Fuel Tracking Activities		Familiarity with Program – Transport Partnership		Familiarity with Program – Green Freight		Familiarity with Program – Smart Driver Training		Familiarity with Program – Zero Emission	
	2022 Total	Less than 5 (I)	5-9 (J)	10-19 (K)	20 or more (L)	Yes (A)	No (B)	Yes (E)	No (F)	Yes (G)	No (H)	Yes (I)	No (J)	Yes (K)	No (L)
Base= Actual	(300) %	(79) %	(56) %	(47) %	(97) %	(294) %	(6) %	(52) %	(247) %	(33) %	(265) %	(63) %	(233) %	(50) %	(246) %
Yes	17	10	12	16	28I	17	-	29F	15	35H	15	35J	13	19	17
No	79	86L	82	82	69	79	100	68	81	65	81	63	84I	73	81
DK/ Refused	4	4	5	2	4	4	-	2	4	-	4	1	4	8	2

QNEW6. Does your company offer eco-driving training to its truck drivers?
*Note: * = less than 0.5%, - = no data, Letters denote statistically significant difference. For example, if there is a B then the result is significantly higher than the corresponding result in column B*

2.1.3. Participation in Green Freight Programs

No changes have been observed since the 2018 survey in relation to participation in green transportation programs. Among the Canadian freight transportation industry participation remains moderately low; with approximately one-in-four (26%) businesses participating in at least one.

Participation continues to be strongest in the SmartDriver Training (11%) and the SmartWay Transport Partnership (9%) programs, followed by the Zero Emission Vehicle Infrastructure Program (8%) Green Freight Assessment program (5%) and "other" green freight transportation programs (4%) such as in-house training, GPS (e.g., Geotab), and the Eco-trucking program (1% each).

Participation in green freight programs does not generally vary by business demographics except for the number of trucks in their fleet. More specifically, business with 20 or more trucks are more likely to participate in at least one green transportation program (42% vs. 15-19%).

Similar to 2018, businesses that are more familiar with green transportation programs are also more likely to participate in them. For example, businesses familiar with the Transport Partnership program were more likely to be participants in the SmartDriver Training Program (20% vs. 9%) and Green Freight Assessment Program (11% vs. 3%) and Zero Emission Vehicle Infrastructure Program (17% vs. 6%). However, it should be noted that familiarity with a program does not guarantee participation.

Among those who are familiar with any green freight assessment program (36%), 73% participate in at least one green freight program, a significant increase (+13%) over 2018. Participation among those who are familiar with the program varies widely by individual programs. More specifically:

- Among those familiar with the SmartDriver Training Program (21%), 33% participate in the program;
- Among those who are familiar with the Green Freight Assessment program (11%), 26% participate in the program;
- Among those who are familiar with the SmartWay Transport Partnership (17%), 44% participate in the program; and
- Among those who are familiar with the Zero Emission Vehicle Infrastructure Program (16%), 22% participate in the program.

Exhibit 2.1.2.a Participation in Green Freight Programs

Programs or Activities	2022 Total	2018 Total	Familiar With Program – Transport Partnership[2] Yes (E)	Familiar With Program – Transport Partnership[2] No (F)	Familiar With Program – Green Freight Yes (G)	Familiar With Program – Green Freight Yes (H)	Familiar With Program – Smart Driver No (I)	Familiar With Program – Smart Driver Yes (J)	Familiar With Program – Zero Emissions Yes (K)	Familiar With Program – Zero Emissions No (L)
Base = actual	(300) %	(300) %	(52) %	(247) %	(33) %	(265) %	(63) %	(233) %	(50) %	(246) %
SmartDriver Training	11	n/a	20F	9	23H	9	33J	5	19	9
SmartWay Transport Partnership	9	14	44F	2	18	8	23J	6	9	9
Zero Emission Vehicle Infrastructure program	8	n/a	17F	6	13	8	13	6	22L	5
Green Freight Assessment Program	5	12	11F	3	26H	2	6	4	6	4
Ecocamionnage (eco trucking) Program	1	1	2	1	-	1	-	1	-	1
In-house training	1	1	-	1	-	1	-	1	-	1
GPS (e.g. Geotab, etc.)	1	1	-	1	-	1	-	1	-	1
Don’t know/Not sure	*	n/a	-	*	-	*	-	*	-	*
Other	1	n/a	2	*	-	1	1	*	2	*
None	74	74	34	82E	46	77G	48	81I	58	77K

Q12. Which of the following green transportation programs, if any, does your company participate in?
*Note: * = less than 0.5%, - = no data, Letters denote statistically significant difference. For example, if there is a B then the result is significantly higher than the corresponding result in column B*

[2] Familiar represents 4 or 5 on a 5-point scale

Exhibit 2.1.2.b Participation in Green Freight Programs Among those who are Familiar with the program, Participate in Program

Programs Or Activities	2022 Familiar With Program[3]	2018 Familiar With Program[4]	Participate In Program Yes	Participate In Program No
Base = actual	(300) %	(300) %	(Varies by Program)	(Varies by Program)
SmartWay Transport Partnership	17	10	43	57
SmartDriver Training	21	21	32	68
Green Freight Assessment Program	11	17	25	75
Zero Emission Vehicle Infrastructure Program	16	N/A	22	78
Any	36	30	73	27

Q11. Using a scale of 1 to 5 where 1 is not at all familiar and 5 is very familiar, how familiar are you with the following Canadian green transportation programs?
Q12. Which of the following green transportation programs, if any, does your company participate in?
*Note: * = less than 0.5%, - = no data, Letters denote statistically significant difference. For example, if there is a B then the result is significantly higher than the corresponding result in column B*

2.2. Attitudes towards Fuel Consumption

2.2.1. Importance of Tracking Fuel Consumption

Again in 2022, a majority (82%) of the businesses in the Canadian freight transportation industry consider tracking fuel consumption important (4/5 on a 5-point scale) with two-thirds (66%) considering it “very” important. Though not statistically significant, slightly fewer businesses (-2%) do not consider tracking fuel consumption important (7%) (1/2 on a 5-point scale) in 2022.

The importance of tracking fuel consumption does not vary based on business demographics. A slight change from 2018 when businesses that only had short-haul trucks in their fleets were less likely to consider tracking fuel-consumption important and businesses that invested in fuel reduction technologies or activities consider the tracking of fuel consumption more important than those who didn’t.

[3] Familiar represents 4 or 5 on a 5-point scale

[4] Familiar represents 4 or 5 on a 5-point scale

Exhibit 2.2.1. Importance of Tracking Fuel Consumption by Total

	2022 Total	2018 Total
Base = actual	(300) %	(300) %
Net: Important	82	80
5 – Very important	66	63
4 - Important	14	17
3 - Neither important, nor unimportant	11	11
2 - Not important	4	5
1 - Not at all important	4	4
Net: Not important	7	9

Q4. Using a scale of 1 to 5 where 1 is not at all important and 5 is very important, how important would you say it is to track fuel consumption within your fleet?
*Note: * = less than 0.5%, - = no data*

2.3. Fuel Efficiency Activities

In this section we explore the activities undertaken for tracking fuel efficiency along with technologies that businesses have invested in.

2.3.1. Tracking Fuel Efficiency Activities

As in 2018, virtually all businesses in the Canadian freight transportation industry (98%) track at least some information related to the fuel efficiency of their fleets in 2022. Fuel consumption (90%) and total kilometres travelled annually (89%) are the most commonly tracked information, followed by driving habits (69%) average speed (65%), idle time (63%), annual average payload (52%), empty kilometres travelled annually (51%), and other (18%). Other tracking activities include maintenance, cost of fuel and tire quality (3% each), brakes and distance/mileage tonnage (2% each) and fuel quality (1% each).

Businesses that invest in fuel reduction technologies or activities continue to be more likely to track fuel efficiency than those who do not invest in fuel reduction technologies, and businesses that are familiar with SmartDriver are more likely to track average speed and empty kilometres compared to businesses that are not familiar with these programs. For complete details please see the table below.

Exhibit 2.3.1.a Tracking Fuel Efficiency Activities by Total, Fuel Reduction Tech/Activity

% of businesses tracking efficiency activities	2022 Total	2018 Total	Business Conducts Fuel Reduction Tech/Activity	
			Yes (C)	No (D)
Base = actual	(300) %	(300) %	(278) %	(22) %
Annual average payload	52	53	52	46
Fuel consumption	90	91	92D	72
Total kilometres travelled annually	89	89	91D	73
Empty kilometres travelled annually	51	58	54D	19
Driving habits, for example, keeping steady speeds, coasting to decelerate, etc.	69	66	71	46
Average speed	65	70	68D	39
Idle time	63	70	66D	33
OTHER (NET)	18	25	18	18
Safety items	*	1	*	-
Cost of fuel	3	4	3	4
Maintenance of vehicle/mechanics	3	5	2	9
Distance/mileage	2	4	2	-
Tire quality	3	2	3	4
Brakes	2	2	2	-
Weight/tonnage	*	2	*	-
Gas stations/Fuel quality or cost by jurisdiction	1	1	1	-
Misc. Other	9	12	9	9
None of the above	2	1	1	9

Q5. Now, thinking about freight trucks that your company uses, which of the following do you track? Please indicate yes or no for each answer.
*Note: * = less than 0.5%, - = no data, Letters denote statistically significant difference. For example, if there is a B then the result is significantly higher than the corresponding result in column B*

Exhibit 2.3.1.b Tracking Fuel Efficiency Activities by Total, Familiar with Program – SmartDriver Training

	2022 Total	2018 Total	Familiar with Program - Smart Driver Training[5] Yes (I)	No (J)
Base = actual	(300) %	(300) %	(50) %	(246) %
Annual average payload	52	53	63	49
Fuel consumption	90	91	94	89
Total kilometres travelled annually	89	89	96	88
Empty kilometres travelled annually	51	58	68J	48
Driving habits, for example, keeping steady speeds, coasting to decelerate, etc.	69	66	78	67
Average speed	65	70	79J	62
Idle time	63	70	74	60
OTHER (NET)	18	25	25	16
Safety items	*	1	2	-
Cost of fuel	3	4	3	3
Maintenance of vehicle/mechanics	3	5	2	3
Distance/mileage	2	4	5	2
Tire quality	3	2	8J	2
Brakes	2	2	5	1
Weight/tonnage	*	2	1	-
Gas stations/Fuel quality or cost by jurisdiction	1	1	-	1
Misc. Other	9	12	11	9
None of the above	2	1	-	3

Q5. Now, thinking about freight trucks that your company uses, which of the following do you track? Please indicate yes or no for each answer.
*Note: * = less than 0.5%, - = no data, Letters denote statistically significant difference. For example, if there is a B then the result is significantly higher than the corresponding result in column B*

2.3.2. Fuel-efficiency technologies and activities

While the vast majority of the Canadian freight transportation industry continues to invest in at least one fuel reduction technology or activity (92%). Investments in electronic on-board devices, auxiliary power units and/ or cab heaters and anti-idling equipment have decreased in 2022 compared to 2018 levels (67% vs. 77%; 59% vs. 66%; 43% vs. 51% respectively).

[5] Familiar represents 4 or 5 on a 5-point scale

The most common technologies or activities undertaken in 2022 include: electronic on-board devices (67%), auxiliary power units and/ or cab heaters (59%), tire technology (50%), driver-trainer or incentive programs (50%), anti-idling equipment (43%), aerodynamic equipment - truck (40%), improved trailer capacity utilization programs (33%), aerodynamic equipment – trailer (31%), engine power (30%) and “other” (13%). Other activities include using different fuels or fuel-efficient supplements and following the speed limit (2% each), investing in newer, more fuel-efficient technologies (1%) and miscellaneous others (9%).

Investment in fuel reduction technologies or activities continues to be higher as the number of trucks in a fleet increases. For example, similar to 2018, businesses that have 20 or more trucks in their fleet are more likely to invest in most technologies or activities compared to those who have fewer trucks. Investment also varies by the type of trucks a business operates. Specifically, refrigerated trucks are more likely to invest in aerodynamic equipment – truck and trailer and driver training or incentive programs compared to other types of trucks while businesses that have expediated trucks are more likely to invest in improved trailer capacity utilization programs or policies compared to other types of truck. Further, businesses that are familiar with green transportation programs like the Green Smart Driver Training Program and the Zero Emission Vehicle Infrastructure Program, are more likely to invest in fuel reduction technologies or activities. Complete details can be found in the table below.

Exhibit 2.3.2.a. Fuel-efficiency technologies and activities by Total, Number of Trucks

Fuel-efficiency technologies and activities	2022 Total	2018 Total	Number of Trucks			
			Less than 5 (I)	5-9 (J)	10-19 (K)	20 or more (L)
Base = actual	(300) %	(300) %	(79) %	(56) %	(47) %	(97) %
Electronic On-board Devices Such as Electronic Logs, GPS, etc.	67	77	39	53	85IJ	93IJ
Auxiliary Power Units And/ Or Cab Heaters	59	66	48	54	68	71I
Tire Technology	50	51	39	46	49	61I
Driver-trainer Or Incentive Programs	50	47	31	43	47	73IJK
Anti-idling Equipment	43	51	30	46	47	54I
Aerodynamic Equipment - Truck	40	47	30	32	38	55IJ
Improved Trailer Capacity Utilization Programs or Policies	33	36	22	27	34	41I
Aerodynamic Equipment - Trailer	31	n/a	15	27	25	51IJK
Engine repower	30	n/a	17	28	25	47IJK
Aerodynamic Equipment	n/a	47	n/a	n/a	n/a	n/a
OTHER (NET)	13	10	16	16	6	14
Use different fuel type vehicles or fuel-efficient supplements	2	4	3	5	-	1
Following the speed limit	2	1	3	-	-	3
Buying new vehicles with fuel efficient technologies	1	2	-	4	-	1
Avoid rush hour or traffic	-	1	-	-	-	-
Misc. Other	9	5	11	9	6	9
None of the above	8	5	16L	5	7	1

Q6. Which of the following fuel reduction technologies or activities has your company implemented? Please indicate yes or no for each one.
*Note: * = less than 0.5%, - = no data, Letters denote statistically significant difference. For example, if there is a B then the result is significantly higher than the corresponding result in column B*

Exhibit 2.3.2.b. Fuel-efficiency technologies and activities by Total, Familiar with Program – Smart Driver Training, Familiar with Program – Zero Emission Infrastructure Program

Fuel-efficiency technologies and activities	2022 TOTAL	Familiar with Program – Smart Driver Training		Familiar with Program – Zero Emission Infrastructure Program	
		YES	NO	YES	NO
Base = actual	(300) %	(63) %	(233) %	(50) %	(246) %
Electronic On-board Devices Such as Electronic Logs, GPS, etc.	67	76	65	76	66
Auxiliary Power Units And/ Or Cab Heaters	59	69	57	67	58
Tire Technology	50	69J	45	65L	47
Driver-trainer Or Incentive Programs	50	70J	44	62	47
Anti-idling Equipment	43	56J	40	47	43
Aerodynamic Equipment - Truck	40	52J	37	48	39
Improved Trailer Capacity Utilization Programs or Policies	33	56J	27	46L	30
Aerodynamic Equipment - Trailer	31	49J	26	40	30
Engine repower	30	38	29	23	31
Aerodynamic Equipment	n/a	14	13	9	14
OTHER (NET)	13	1	2	2	2
Use different fuel type vehicles or fuel-efficient supplements	2	2	2	-	2
Following the speed limit	2	1	1	2	1
Buying new vehicles with fuel efficient technologies	1	-	-	-	-
Avoid rush hour or traffic	-	15	13	16	13
Misc. Other	9	11	8	8	9
None of the above	8	4	9	6	9

*Q6. Which of the following fuel reduction technologies or activities has your company implemented? Please indicate yes or no for each one. Note: * = less than 0.5%, - = no data, Letters denote statistically significant difference. For example, if there is a B then the result is significantly higher than the corresponding result in column B*

Exhibit 2.3.2.c. Fuel-efficiency technologies and activities by Type of Truck

Fuel-efficiency technologies and activities	2022 TOTAL	Type of Truck						
		Refrig-erated (A)	Package (B)	Special-ized (C)	Expedited (D)	Tanker (E)	Flatbed (F)	Mixed (G)
Base = actual	(300) %	(41) %	(30) %	(62) %	(16) %	(37) %	(85) %	(28) %
Electronic On-board Devices Such as Electronic Logs, GPS, etc.	67	92CEI MN	83N	72	93N	67	77N	71
Auxiliary Power Units And/ Or Cab Heaters	59	81ILM N	69N	64N	74	62	72LN	60
Tire Technology	50	70LN	67L	66LN	82KLN	53	60L	56
Driver-trainer Or Incentive Programs	50	78EFG IMN	52	57	87EFGI MN	53	56	50
Anti-idling Equipment	43	58	65LN	63LN	80EGIL N	45	53	43
Aerodynamic Equipment - Truck	40	72CEF GILMN EFGIL MN	69	44	67LMN	38	41	36
Improved Trailer Capacity Utilization Programs or Policies	33	53N	54N	44	74EFGH ILMN	35	34	32
Aerodynamic Equipment - Trailer	31	74CEF GIKLM N	54EILN	42IN	68EILM N	24	39	32
Engine repower	30	34	48L	45L	30	24	44L	41
Aerodynamic Equipment	n/a	13	17	15	12	17	13	4
OTHER (NET)	13	-	-	-	-	6	-	-
Use different fuel type vehicles or fuel-efficient supplements	2	3	4	4	-	3	1	4
Following the speed limit	2	-	-	2	-	6	-	-
Buying new vehicles with fuel efficient technologies	1	-	-	-	-	-	-	-
Avoid rush hour or traffic	-	15	29H	22	25	8	12	23
Misc. Other	9	10	14	9	12	5	12	-
None of the above	8	3	-	3	-	9	7	15H

Fuel-efficiency technologies and activities	2022 TOTAL	Type of Truck						
		Dry Van (H)	Heavy Haul (I)	Auto-carrier (J)	Garbage Trucks (K)	Cubed Van (L)	Work Truck (M)	Other (N)
Base = actual	(300) %	(92) %	(77) %	(3) %	(7) %	(37) %	(47) %	(77) %
Electronic On-board Devices Such as Electronic Logs, GPS, etc.	67	88CEI MN	70	100	68	80	69	60
Auxiliary Power Units And/ Or Cab Heaters	59	72LN	58	100	68	46	53	44
Tire Technology	50	52	55	69	26	35	51	44
Driver-trainer Or Incentive Programs	50	73EFG IMN	44	100	55	54	44	45
Anti-idling Equipment	43	57N	48	100	71	36	52	39
Aerodynamic Equipment - Truck	40	57ILM N	38	100	26	32	32	33
Improved Trailer Capacity Utilization Programs or Policies	33	42	36	61	26	29	37	27
Aerodynamic Equipment - Trailer	31	57EFG ILMN	24	100EILN	26	22	28	24
Engine repower	30	39	42L	69	39	19	31	28
Aerodynamic Equipment	n/a	14	12	-	26	11	4	13
OTHER (NET)	13	2	-	-	-	3	-	1
Use different fuel type vehicles or fuel-efficient supplements	2	3	3	-	-	6	2	1
Following the speed limit	2	1	-	-	-	-	-	-
Buying new vehicles with fuel efficient technologies	1	-	-	-	-	-	-	-
Avoid rush hour or traffic	-	9	18	31	13	17	11	17
Misc. Other	9	8	9	-	26	3	2	10
None of the above	8	2	8	-	16	3	7	10

*Q6. Which of the following fuel reduction technologies or activities has your company implemented? Please indicate yes or no for each one. Note: * = less than 0.5%, - = no data, Letters denote statistically significant difference. For example, if there is a B then the result is significantly higher than the corresponding result in column B*

2.3.3. Barriers to adopting fuel reduction activities/technologies

In 2022, most Canadian freight transportation businesses (89%) say they face barriers when trying to adopt or implement fuel reduction activities or technologies. Uncertainty about the return on investment (51%) is of concern to more than half, followed by a lack of human resources or time (47%) and uncertainty about the performance of fuel reduction activities or technologies (44%). Many businesses also indicated that competing operational priorities (36%), lack of funds (34%), lack of knowledge (33%), access to refueling infrastructures (29%) and access to alternative fuel, refilling/charging infrastructure (28%) create barriers to adopting fuel reduction activities or technologies. A small number of businesses indicated that a lack of senior management buy-in (9%) or other reasons (14%) create barriers. Other reasons cited included technical ability or alternative technology not being available (3%), legislation barriers (3%), lack of “good” drivers (1%), costs of fuel or fuel reduction technologies (1%), the belief that new trucks have reduced efficiency (1%) and miscellaneous others (6%).

Competing priorities are a larger barrier in 2022 than 2018 (cited by 46% of respondents vs. 36%) while a lack of buy-in from senior management as a barrier has reduced compared to 2018 (9% vs. 14%).

Exhibit 2.3.3. Barriers to adopting fuel reduction activities/technologies by Total

Barriers	2022 % of businesses that face barriers	2018 % of businesses that face barriers
Base = actual	(300) %	(300) %
Uncertainty About the Return on Investment	51	50
Lack Of Human Resources or Time	47	54
Uncertainty About the Performance	44	53
Competing Operational Priorities	36	46
Lack Of Funds	34	38
Lack Of Knowledge	33	39
Access To Refueling Infrastructures	29	26
Access to alternative fuel refilling/charging infrastructure	28	n/a
OTHER (NET)	14	15
Technical ability not there/Alternative technology not available	3	-
Legislation gets in the way	3	1
Lack of good drivers	1	1
Increased costs of fuel, fuel reduction technologies (e.g. Air Def Systems, etc.)	1	3
Newer trucks/Newer devices on trucks have reduced the efficiency	1	2
Lack of parking spaces, rest stops, etc.	*	1
Emission technology is a barrier/Gets in the way	*	2
Weather/Climate	*	*
Hauling heavier loads	-	-
Drivers ignore fuel efficiency to reach destinations on time	-	1
Other (Final)	6	8
None of the above	11	10

Q8. Which of the following challenges or barriers, if any, has your company encountered when trying to adopt or implement fuel reduction activities or technologies? Please answer yes or no for each one.
*Note: * = less than 0.5%, - = no data, Letters denote statistically significant difference. For example, if there is a B then the result is significantly higher than the corresponding result in column B*

2.3.4. Usefulness of Fuel Efficiency Information

Canadian freight transportation businesses were asked to identify the types of information on fuel efficiency they consider most useful from a set list. About three-quarters of businesses consider on-road performance of energy efficient technologies (74%) and fuel consumption ratings for HDV (72%) to be useful. Similar to 2018, more than half of businesses (56%) find a business case for adopting energy efficient technologies and practices to be useful. Somewhat fewer consider data on the energy efficiency of Canada's HDV fleet (45%) and stories on fleets transition to decarbonizing operations (41%) to be useful.

While there are few regional differences when it comes to useful information, businesses outside of Quebec find stories on fleet transition to decarbonizing operations more useful than those inside of Quebec (46-75% vs 25%). Further, business that have invested in fuel reduction technology or activity are more interested in business cases for adopting energy efficient technologies and practices (61% vs. 17%) and stories on fleets transition to decarbonizing operations (45% vs 0%) useful.

Exhibit 2.3.4. Importance of Fuel Efficiency Information by Total, Region and Fuel Reduction Tech/Activity

			Region					Fuel Reduction Tech/Activity	
	2022 Total	2018 Total	Atlantic (A)	Quebec (B)	Ontario (C)	Prairies (D)	BC (E)	Yes (C)	No (D)
Base = actual	(198) %	(236) %	(13) %	(65) %	(55) %	(44) %	(20) %	(187) %	(11) %
On-road performance of energy efficient technologies	74	71	92	63	81B	74	75	75	51
Fuel consumption ratings for HDV	72	73	100C	70	64	74	81	73	54
Business case for adopting energy efficient technologies and practices	56	57	84	52	56	56	60	59D	15
Data on the energy efficiency of Canada's HDV fleet	45	46	61	46	38	48	50	47	17
Stories on fleets transition to decarbonizing operations	41	38	75B	22	46B	46B	54B	43D	-
Other (Final)	6	4	-	-	7	9	15B	5	10
Don't know	*	1	-	-	2	-	-	*	-

Q13. From the following, what kind of information on fuel efficiency do you find most useful?
*Note: * = less than 0.5%, - = no data, Letters denote statistically significant difference. For example, if there is a B then the result is significantly higher than the corresponding result in column B*

2.4. Impact of COVID-19

2.4.1. Overall Impact

New in 2022, the survey looked at the impact of the COVID-19 pandemic on Canadian freight transportation businesses. Just over half (51%) of respondents indicated the COVID-19 pandemic had a negative impact (1/2 on a 5-point scale), while 30 per cent indicated it had no impact (3 on a 5-point scale). Fifteen per cent indicated the COVID-19 pandemic had a positive impact on their business while four per cent did not know.

Regional variations exist in relation to the impact of the COVID-19 pandemic. More specifically, businesses in the Prairies were more likely to indicate the COVID-19 pandemic had a negative impact compared to businesses in other regions (66% vs 42-55%). Further, businesses with larger fleets (20+ vehicles) were also more likely to indicate the COVID-19 pandemic had a negative impact on their business than business with less than 20 vehicles in their fleet (68% vs 41-54%).

Exhibit 2.4.1. Overall Impact

Overall Impact	2022 Total	Region					Number of Trucks			
		Atlantic (A)	Quebec (B)	Ontario (C)	Prairies (D)	BC (E)	Less than 5 (I)	5-9 (J)	10-19 (K)	20 or more (L)
Base = actual	(300) %	(18) %	(92) %	(80) %	(80) %	(26) %	(79) %	(56) %	(47) %	(97) %
POSITIVE (NET)	15	28D	14	21D	7	23	17	16	19	13
5 – Very positive	4	11	2	5	1	7	4	4	4	4
4 – Positive	12	17	12	16	6	15	13	12	14	9
3 – No Impact	30	17	42CD	22	25	29	39L	38L	23	17
NEGATIVE (NET)	51	55	42	48	66BC	48	44	41	54	68IJ
2 – Negative	39	50	33	39	48	33	28	36	43	54I
1 – Very Negative	12	5	9	8	19	15	15	5	11	15
Don't Know	4	-	2	10D	1	-	1	5	4	1

QNEW1. The COVID-19 pandemic has had various impacts on different types of businesses. Would you say COVID-19 has had a very negative, negative, no impact, positive or very positive impact on your company's operations?
*Note: * = less than 0.5%, - = no data, Letters denote statistically significant difference. For example, if there is a B then the result is significantly higher than the corresponding result in column B*

2.4.2. Reasons for Impact

The survey further probed about the reasons for the impact of the COVID-19 pandemic on the business. Among those who indicated the pandemic had a negative impact, the following were cited as the key reasons:

- Lack of workers, not enough drivers (40%)
- Government mandates, restrictions and/or lockdowns (22%)
- Increased expenses/costs (11%)
- Slowed down the general operation of the business (12%)
- Lack of available parts (10%)
- Drivers unavailable due to COVID infection (10%)
- Restrictions and shutdowns impact on working drivers (9%)
- Loss of revenue/ fewer customers (9%)
- Lack of supplies to deliver (7%)
- Lack of available trucks/ scheduling conflicts / delayed delivery (7%)
- Miscellaneous other (25%)

While those who indicated the COVID-19 pandemic had a positive impact on their business cited the following key reasons:

- Increased business, service demand and/or volume of work (53%)
- More people were staying home (15%)
- Considered an essential service (10%)
- Increase revenue/sales (10%)
- Low-level contact work for employees/lighter workload (7%)
- No issues or beneficial impact of COVID-19 mandates (6%)
- Business remained steady (6%)
- Local business not impacted by cross border restrictions (4%)
- Miscellaneous other (19%)

Exhibit 2.4.2. Negative Reasons for Impact by Total

Negative Reasons for Impact	2022 Total
Base=actual	**(155) %**
Lack of workers / Not enough drivers / Job cuts	40
Due to government mandates / Restrictions / Lockdowns	22
Increase in costs / Expenses	11
Slowed down the general operation of the company	12
Lack of available parts	10
Drivers unavailable due to contracting COVID-19	10
Restrictions and shutdowns impact on working drivers	9
Loss of revenue / Fewer customers	9
Lack of supplies to deliver	7
Lack of delivery trucks available / Scheduling conflicts / Delayed delivery	7
Business is concentrated locally / No need to cross borders or worry about COVID-19 restrictions across the border	3
Low-level contact work for employees / Lighter workload	1
Increase in revenue / Sales	1
More people staying at home	1
Business / Work has remained steady / Nothing has changed	1
Other	21
None/Don't Know	1

QNEW2. Why has the pandemic had [insert answer from QNew1] on your company's operations?
*Note: * = less than 0.5%, - = no data*

Exhibit 2.4.2. Positive Reasons for Impact by Total

Positive Reasons for Impact	2022 Total
Base=actual	**(46) %**
Business has boomed / We have been busy / Increase in service demand / Volume of work	53
More people staying at home	15
Increase in costs / Expenses	12
We are an essential service (e.g. food products, fuel, farming equipment, etc.)	10
Increase in revenue / Sales	10
Low-level contact work for employees / Lighter workload	7
No issues / Vaccine mandate has been beneficial / Haven't been affected by COVID-19 / Workers got vaccinated	6
Lack of workers / Not enough drivers / Job cuts	6
Business / Work has remained steady / Nothing has changed	6
Business is concentrated locally / No need to cross borders or worry about COVID-19 restrictions across the border	4
Loss of revenue / Fewer customers	2
Lack of delivery trucks available / Scheduling conflicts / Delayed delivery	2
Slowed down the general operation of the company	2
More people staying at home	15
Other	13
None/Don't Know	5

QNEW2. Why has the pandemic had [insert answer from QNew1] on your company's operations?
*Note: * = less than 0.5%, - = no data*

2.4.3. Impact on Investment

Businesses were also asked about the impact of the COVID-19 pandemic on investments related to fuel reduction, new truck purchases and retrofitting. About two in three respondents indicated the pandemic had no impact on investment in fuel reduction (64%) or retrofitting (67%) while 49% indicated it had no impact with regard to new truck investment.

Nearly one-quarter (24%) indicated the pandemic increased their investments in new trucks, 21% indicated it increased their investments in fuel reduction, and 16% indicated it increased their investments in retrofitting.

Reductions in investment due to the pandemic were largest for new trucks (23%) followed by fuel reduction and retrofitting (12% each).

Not unexpectedly, businesses that increased their investments were more likely to already have invested in fuel reduction technology, while those who decreased investments were less likely to already invest in fuel reduction technology/activities

Exhibit 2.4.3. Impact on Investment

Fuel Reduction	2022 TOTAL
Base=actual	(300) %
MORE (NET) 1/2	21
1 – Much more investment	11
2 – Slightly more investment	10
3 – No change in investment	64
LESS (NET) 4/5	12
4 – Slightly less investment	4
5 – Much less investment	7
Don’t know	3

QNEW3. Now, thinking about the impact of COVID-19 on your business’ investments, how has the COVID-19 pandemic impacted your company’s investment in each of the following areas.
*Note: * = less than 0.5%, - = no data*

New Truck	2022 TOTAL
Base=actual	(300) %
MORE (NET) 1/2	24
1 – Much more investment	9
2 – Slightly more investment	16
3 – No change in investment	49
LESS (NET) 4/5	23
4 – Slightly less investment	11
5 – Much less investment	12
Don't know	4

QNEW3. Now, thinking about the impact of COVID-19 on your business' investments, how has the COVID-19 pandemic impacted your company's investment in each of the following areas.
*Note: * = less than 0.5%, - = no data*

Retrofitting	2022 TOTAL
Base=actual	(300) %
MORE (NET) 1/2	16
1 – Much more investment	10
2 – Slightly more investment	5
3 – No change in investment	67
LESS (NET) 4/5	12
4 – Slightly less investment	5
5 – Much less investment	7
Don't know	5

QNEW3. Now, thinking about the impact of COVID-19 on your business' investments, how has the COVID-19 pandemic impacted your company's investment in each of the following areas.
*Note: * = less than 0.5%, - = no data*

2.5. Respondent Profile

Three-hundred representatives from the Canadian freight transportation industry were interviewed and the profile is similar to those interviewed in 2018. Half of the respondents that were surveyed were from businesses with fewer than 10 employees (51%), 35% were from businesses with 10-49 employees and the 13% were from businesses with 50+ employees. Businesses represented in this survey were distributed regionally as follows: Atlantic Canada (6%), Quebec (31%), Ontario (26%) the Prairies (27%) and BC (9%). Businesses surveyed had a variety of fleets types; 39% had exclusively private fleets, 35% had exclusively for-hire fleets, and 24% had a combination of both. Furthermore, 46% of businesses had less than 10 trucks while 16% had 10-19 and 32% had 20 or more trucks in their fleet. Seven per cent of businesses did not know how many trucks they had in their fleet.

New to the survey this year, businesses indicated they had a variety of trucks in their fleets. Most common were dry vans (30%) followed by flatbeds (28%), heavy haul trucks (25%), specialized (21%), work trucks (16%), refrigerated (14%), cubed van (13%), tanker (12%), package (10%), mixed (9%), expedited (6%), garbage truck (2%) and auto-carrier (1%). Further, trucks tend to be used mostly for regional (62%) (within a particular region, typically less than 200 km from home terminal) or long-haul (58%) (more than 200 km from the home terminal) while some (18%) are last mile (the final step in the supply chain where a package transfer from a business to a consumer).

Further, it would appear that fleets are modernizing, where close to half of businesses had less than 50% of their fleets being more than 5 years old in 2018 while in 2022 just over one-third of the businesses (38%) have less than half of the fleet more than five years old.

Exhibit 2.4.a Respondent Profile: Region

Region	2022 TOTAL	2018 TOTAL
Base = actual	(300) %	(300) %
Newfoundland and Labrador	1	1
Nova Scotia	3	2
Prince Edward Island	-	*
New Brunswick	2	3
Quebec	31	35
Ontario	26	24
Manitoba	5	5
Saskatchewan	4	3
Alberta	17	16
British Columbia	9	11
Northwest Territories	-	-
Nunavut	-	-
Yukon	-	-
DK/Refused	1	1

Q16. In which province is your office located?
*Note: * = less than 0.5%, - = no data*

Exhibit 2.4.c. Respondent Profile: Type of Fleet

Type Of Fleet	2022 TOTAL	2018 TOTAL
Base = actual	(300) %	(300) %
Private	39	41
For hire	35	35
Both	24	23
DK/Refused	2	1

Q17. Is your fleet:
*Note: * = less than 0.5%, - = no data*

Exhibit 2.4.c. Respondent Profile: Number of Trucks

Number of Trucks	2022 TOTAL	2018 TOTAL
Base = actual	(300) %	(300) %
Less than 5	27	27
5 – 9	19	18
10 - 19	16	17
20 or more	32	34
Don't know	7	4

Q18. How many trucks are in your company's fleet?

Exhibit 2.4.d. Respondent Profile: Type of Truck

Type of Truck in Fleet	TOTAL
Base=actual	(300) %
Dry van	30
Flatbed	28
Heavy haul	25
Specialized	21
Work truck	16
Refrigerated	14
Cubed van	13
Tanker	12
Package	10
Mixed	9
Expedited	6
Garbage trucks	2
Auto-carrier	1
Don't know	4
Other (Final)	26

QNEW4. Which of the following trucks are in your fleet?
*Note: * = less than 0.5%, - = no data*

Exhibit 2.4.e. Respondent Profile: Type of Truck

What Trucks Are Used For	2022 TOTAL
Base=actual	(300) %
Regional Delivery	62
Long haul	58
Last mile	18
DK/Refused	5

QNew5B. Are your trucks used for…?

Exhibit 2.4.f. Respondent Profile: Age of Fleet

Percentage of Trucks In The Fleet Less Than Five Years Old	2022 TOTAL	2018 TOTAL
Base = actual	(227) %	(300) %
Less than 25	25	36
25-49	13	14
50-74	20	20
75 or more	25	27
Don't know	13	4

Q20. What percentage of trucks in your fleet are less than five years old?

Exhibit 2.4.g. Respondent Profile: Number of Drivers

Number of Drivers in Fleet	2022 TOTAL
Base = actual	(227) %
Less than 4	31
5-9	20
10-49	35
50+	13
Don't know	2

QNEW5. How many drivers does your company employ?

3. Methodology

3.1. Methodological Overview

A telephone survey was conducted from February 18 to March 22, 2022, among representatives of the Canadian freight transportation industry who are involved in or knowledgeable about the management or implementation of trucking fuel efficiency programs and policies within their business' fleet of vehicles.

A list of Canadian freight transportation industry businesses belonging to general freight: local (NAICS code 484110), general freight: long distance (NAICS codes 484121 &484122), and specialized freight trucking; excluding used goods (NAICS codes 484220 & 484230) was purchased.

The sample was drawn from a purchased list of NAICS codes 4841 (general freight trucking) and 4842 (Specialized freight trucking - excluding used goods). A census-style approach was undertaken, meaning that all available sample was draw and used to achieve the completions outlined below:

- 484110: General freight trucking, local: N= 129
- 484121 and 484122: General freight trucking, long distance: N=133
- 484220 and 484230: Specialized Freight Trucking - excluding used goods: N=38

In total, 300 telephone interviews were conducted. Findings from these 300 completions are extrapolated to Canadian freight transportation businesses (NAICS 4841) and specialized freight trucking businesses (NAICS code 4842 excluding used goods) with a margin of error of +/-6% 19 times out of 20.

Table 3.1.a. Quota and Completes

NAICS Code	Completes
4841: General freight trucking, local (484110)	129
4841: General freight trucking, long distance (484121 and 484122)	133
4842: Specialized freight trucking local and long distance (excluding used goods)	38
Total	300

Questionnaire

Kantar used the 2018 survey as the base for the 2022 survey. A few questions related to the COVID-19 pandemic and demographics were added while a few demographics were removed. The resulting survey included 22 questions that were primarily closed-ended. The survey took an average of 17.2 minutes to complete.

Survey Pretest

A survey pretest was conducted on January 28th and 31st by completing 20 questionnaires: 10 in English and 10 in French, under live field conditions. Results of the pre-test indicated that some revisions to introduction were required, and adjustments were made. Pretesting occurred at the beginning of the Freedom Convoy and identified lower willingness towards participating in a Government of Canada survey than in previous years. As such fieldwork was put on hold until February 18th. Pretest results were kept in the final data as changes were made only to the introduction.

Sample Design and Selection

The sample was drawn from a purchased list of Canadian freight transportation industry businesses belonging to general freight: local (NAICS code 484110), general freight: long distance (NAICS codes 484121 & 484122), and specialized freight trucking; excluding used goods (NAICS codes 484220 & 484230). The following table presents the number of records available by corresponding NAICS code. Respondents were screened to ensure that they were involved in or knowledgeable about the management or implementation of trucking fuel efficiency programs and policies within the business' fleet or vehicles.

Table 3.1.b. Sample Records by NAICS Code

Sum of Records		
NAICS Code	NAICS Description	Number of Records
484110	General freight trucking, local	6840
484121	General freight trucking, long distance, truckload	5580
484122	General freight trucking, long distance, less than truckload	
484220	Specialized freight (except used goods) trucking, local	1831
484230	Specialized freight (except used goods) trucking, long-distance	
Total		**14251**

Survey Administration

The telephone survey, on average 17.2 minutes long, was conducted using computer assisted telephone interviewing (CATI) technology by Market Pulse in the official languages of choice of the respondent. Fieldwork took place during the day on weekdays and ran for four weeks (February 18 to March 22, 2022). Interviews were done in accordance with the Privacy Act and the Access to Information Act. The field staff directly involved in data collection, including interviewers, were located in Canada, and survey data were stored on servers and back-up servers located solely in Canada.

As noted previously, the Freedom Convoy occurred from January 22nd to February 23rd, 2022. The proximity of the fieldwork to the Freedom Convoy and its connection to the trucking industry may have influenced participation and potentially results.

Non-response Bias

The response rate for this survey was 10.7%. In order to maximize response Kantar undertook the following:

- A minimum of 8 call backs were made before retiring a number
- Call backs were rescheduled at different times and days in order to maximize the possibility of an answer
- Appointments and call backs were offered at flexible times so respondents could take the survey at the most convenient time

As with all samples, there is a possibility of non-response bias. In particular, this survey does not include members of the population who only work on weekends or who may have been ill or on leave during the field period. In addition, some groups within the population are systemically less likely to answer surveys. To address the issue of non-response bias, data were weighted to be representative of the NAICS codes population in the freight transportation businesses in Canada. Complete weighting details can be found in the following section.

Weighting

Weighting adjustments were applied to the final edited, clean data to ensure that the data were representative of freight transportation businesses in Canada. The weighting matrix for this project is based on the population numbers (unique businesses in Canada) as provided by the list provider in the three NAICS groups. The three groups are: general freight: local (484110), general freight: long distance (484121 & 484122), and specialized freight trucking excluding used goods (484220 & 484230) (see the tables below).

Table 3.1.c. Weighting Matrix

NAICS CODE	ACTUAL	WEIGHTED
General freight: local (484110)	129	144
General freight: long distance (484121 &484122)	133	118
Specialized freight trucking excluding used goods (484220 & 484230)	38	38
Total	**300**	**300**

Margin of Error

With a population of 14,251 freight transportation businesses, a sample size of 300 provides a margin of error of +/-6% at 19 times out of 20 (95% confidence level).

Response Rate

A total of 14,251 numbers were dialled, of which n=300 completed the survey. The overall response rate achieved for the telephone study was 10.7%. The following table outlines the sample disposition and response rate.

Table 3.1.d. Response Rate Calculation

Total Numbers Attempted	14251
Invalid	4350
NIS	4343
Fax/Modem	7
Business/Non-residential	0
Unresolved (U)	**5920**
Busy	250
No answer	2702
Answering machine	2968
In-scope - non-responding (IS)	**2917**
Illness, incapable	0
Selected respondent not available	180
Household refusal	0
Respondent refusal	2700
Qualified respondent break-off	37
In-scope - Responding units (R)	**1064**
Language disqualifies	76
No one 18+	0
Quota full	3
Other disqualify	685
Completed interviews	300
Response Rate = R/(U+IS+R)	**10.7%**

Tabulated Data

Detailed tables are included under separate cover.

4. Appendix B: Survey Instrument

4.1. English Survey

2022 SmartWay Freight Industry Survey

INTRO_G. Gatekeeper Introduction

Hello, can I speak to someone at your company who is involved in or knowledgeable about fuel efficiency tracking and management within your organization?

IF NECESSARY-

Hello/Bonjour my name is [INSERT NAME], from Kantar. We are currently conducting a survey on behalf of Natural Resources Canada and the Government of Canada and are speaking to 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, improving energy efficiency in freight transportation, and protecting the environment.

Can I speak to the person who is involved in or knowledgeable about the tracking, management or implementation of fuel efficiency programs and policies within your company's fleet of vehicles?

The purpose of the survey is to assess perspectives on reducing fuel use and improving energy efficiency in freight transportation among the heavy-duty trucking industry. The feedback received will be used by the Natural Resources Canada to inform program and policy development for natural resources and to address several Government of Canada and Ministerial priorities including investing in clean energy technology delivering benefits for the environment and the economy, including jobs. As part of this survey, you will be asked to give your opinion. Your participation is completely voluntary and your decision whether or not to participate will not affect any dealings you may have with the Government of Canada.

INTRO_R. Respondent Introduction

Hello/Bonjour my name is [INSERT NAME], from Kantar. We are currently conducting a survey on behalf of the Government of Canada and are speaking to 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 improving energy efficiency in freight transportation and protecting the environment.

[If NECESSARY: Should you wish to verify the legitimacy of this survey you may contact Carmela Liscio at Carmela.Liscio@kantar.com.]

Your participation is voluntary, and your responses will be kept entirely confidential and anonymous. This survey will take about 12 minutes to complete.

Would you prefer that I continue in English or French? Préférez-vous continuer en français ou en anglais?

-English
-French

SCREENING

Q1. Knowledge of fuel efficiency within the company

Are you involved in or knowledgeable about the tracking, management or implementation of fuel efficiency programs and policies within your company's fleet of vehicles?

Yes- **Go to Q3**
No - **Go to Q2**

Q2. Who has knowledge?

Can you direct me to someone at your company that does?

Yes- loop back to Respondent Introduction with this new person

No- "Can I please speak to your receptionist again" Loop back to Gatekeeper introduction

No one at my company is knowledgeable - **TERMINATE**

Q3. Operate Heavy duty freight trucks

Does your company operate freight transportation trucks?

ANSWER LIST [SINGLE PUNCH]

Yes
No- Terminate

INTERVIEWER INSTRUCTION: IF ASKED WHAT FREIGHT TRANSPORTATION TRUCKS ARE: THESE TYPICALLY INCLUDE HEAVY AND LIGHT DUTY TRUCKS USED FOR MOVING GOODS – VANS DO NOT COUNT

Main Survey

Q4. Importance of Tracking Fuel Consumption

Using a scale of 1 to 5 where 1 is not at all important and 5 is very important, how important would you say it is to track fuel consumption within your fleet?

1- Not at all important
2-
3-
4-
5- Very important
99- Don't know (DO NOT READ)

Q5. Type of info tracked

Now, thinking about freight trucks that your company uses, which of the following do you track? Please indicate yes or no for each answer.

[INTERVIEWER: READ LIST AND PAUSE FOR A YES/NO AFTER EACH]

STATEMENTS [RANDOMIZE]

1. Annual average payload
2. Fuel consumption
3. Total Kilometers travelled annually (PROGRAMMING INSTRUCTION – ALWAYS PUT THIS BESIDE EMPTY KM TRAVELLED – randomize the two)
4. Empty kilometers travelled annually
5. Driving habits, for example, keeping steady speeds, coasting to decelerate, etc.
6. Average speed
7. Idle time
8. Anything else, please specify?_____ **(specify) – KEEP LAST**

ANSWER LIST
Yes
No
DON'T KNOW (DO NOT READ)

PROGRAMMING NOTE: KEEP ANSWERS 3 AND 4 (km) TOGETHER

Q6. Investment in technology

Which of the following fuel reduction technologies or activities has your company implemented? Please indicate yes or no for each one.
[INTERVIEWER: READ LIST AND PAUSE FOR A YES/NO AFTER EACH]

STATEMENTS [RANDOMIZE LIST]

- Electronic on-board devices such as electronic logs, GPS, etc.
- Anti-idling equipment
- Aerodynamic equipment – Truck
- Aerodynamic equipment – Trailer
- Engine repower
- Tire technology
- Low carbon vehicles (electric and/or hybrid, natural gas)
- Auxiliary power units and/ or cab heaters
- Improved trailer capacity utilization programs or policies
- Driver-trainer or incentive programs
- Anything else, please specify?_____ (specify) – KEEP LAST

ANSWER LIST
Yes
No
DON'T KNOW (DO NOT READ)

Q8. Barriers to fuel reduction

Which of the following challenges or barriers, if any, has your company encountered when trying to adopt or implement fuel reduction activities or technologies? Please answer yes or no for each one.

[INTERVIEWER: READ LIST AND PAUSE FOR A YES/NO AFTER EACH]

STATEMENTS [RANDOMIZE LIST]
Lack of funds
Uncertainty about the performance
Lack of knowledge
Lack of human resources or time
Competing operational priorities
Lack of senior management buy-in
Uncertainty about the return on investment
Access to refueling infrastructures
Access to alternative fuel refilling/charging infrastructure
Anything else, please specify? _____ **(specify) – KEEP LAST**

ANSWER LIST
Yes
No
DON'T KNOW (DO NOT READ)

QNew1: Short-term impact of COVID-19
The COVID-19 pandemic has had various impacts on different types of businesses. Would you say COVID-19 has had a very negative, negative, no impact, positive or very positive impact on your company's operations?
1 - Very negative

2 - Negative
3 – No impact
4 – Positive
5 - Very positive
99 - DON'T KNOW (DO NOT READ)

QNew2: Open-end impact
Why has the pandemic had [insert answer from QNew1] on your company's operations?
_____ - [RECORD ANSWER]

QNew3: Long-term impact of COVID-19
Now, thinking about the impact of COVID-19 on your business' investments, how has the COVID-19 pandemic impacted your company's investment in each of the following areas.
OPERATIONS (RANDOMIZE LIST)
Fuel reduction
New truck purchases
Retrofitting

1 – Much more investment
2 – Slightly more investment
3- No change in investment
4 – Slightly less investment
5 – Much less investment
99 - DON'T KNOW (DO NOT READ)

Q11. Familiarity with Programs

Using a scale of 1 to 5 where 1 is not at all familiar and 5 is very familiar, how familiar are you with the following Canadian green transportation programs?

PROGRAMS (RANDOMIZE LIST)
SmartDriver Training
SmartWay Transport Partnership
Green Freight Assessment Program
Zero Emission Vehicle Infrastructure Program

1 Not at all familiar
2
3
4
5 Very familiar
99-Don't know (DO NOT READ)

Q12. SmartWay Program Awareness

Which of the following green transportation programs, if any, does your company participate in? [Select all that apply]

STATEMENTS [RANDOMIZE]

SmartWay Transport Partnership
SmartDriver Training
Green Freight Assessment Program
Zero Emission Vehicle Infrastructure Program
Other please specify_____ [FIXED]

Q13.
From the following, what kind of information on fuel efficiency do you find most useful? [Select all that apply]

READ LIST

ANSWER LIST (RANDOMIZE)
On-road performance of energy efficient technologies
Fuel consumption ratings for HDV
Stories on fleets transition to decarbonizing operations
Business case for adopting energy efficient technologies and practices
Data on the energy efficiency of Canada's HDV fleet
Other please specify_____ [FIXED]

DEMOGRAPHICS

We are almost done, just a few more questions for classification purposes.

Q16. Province
In which province is your office located?

ANSWER LIST [SINGLE PUNCH]
Newfoundland and Labrador
Nova Scotia
Prince Edward Island
New Brunswick
Quebec
Ontario
Manitoba
Saskatchewan
Alberta
British Columbia
Northwest Territories
Nunavut
Yukon

DK/Refused

Q17. Type of Fleet

Is your fleet:
[Read List]

Private
For hire
Both
DK/Refused (DO NOT READ)

QNew5: Type of Operation (number of trucks)
How many drivers does your company employ? [Read List if they do not know exact amount]
Less than 4
5-9
10-49
50+
Don't Know/Refused (DO NOT READ)

Q18. Number of trucks
How many trucks are in your company's fleet?
Numeric box to enter number in
ANSWER LIST
[NUMERIC OPEN- RANGE 1-9999]
DON'T KNOW [DO NOT READ]

QNew4: Truck Type
Which of the following trucks are in your fleet?
[Read list]

Refrigerated
Package
Specialized
Expedited
Tanker
Flatbed
Mixed
Dry van
Heavy haul
Auto-carrier
Garbage trucks
Cubed van
Work truck
Other
DK/Refused (DO NOT READ)

QNew5: Truck Use
Are your trucks used for…
[Read list]

Last mile
Regional Delivery
Long haul
DK/Refused (DO NOT READ)

Q20. Less than 5 years
What percentage of trucks in your fleet are less than five years old?

ANSWER LIST
[NUMERIC OPEN- RANGE 0-100]
DON'T KNOW [DO NOT READ]

QNew6:
Does your company offer eco-driving training to its truck drivers?
Yes
No
DK/Refused

QNew7
For each driver, approximately how many hours per year does your company allocate for driver training? Is it… **[read list]**
None
Less than 10 hours
11-50 hours
50+ hours
DK/Refused (DO NOT READ)

End display

Thank you for your time on this important study! The results, once compiled, can be found on the Library and Archives website. [IF ASKED: at https://www.bac-lac.gc.ca/].