



WEBINAR

THE RISE OF LIGHT-DUTY TRUCKS: REVERSING THE TREND

Présenté par

équiterre

In collaboration with



HEC MONTRÉAL

Write your questions in the Q&A!

Agenda

Introduction

Understanding the transformation of the vehicle fleet

Polytechnique Montréal

Limitless: car advertising in Canada

Équiterre

Consumer motivations for purchasing light-duty trucks in Canada

CIRANO et HEC Montréal

Break

Understanding the impacts of the vehicle fleet transformation

Polytechnique Montréal

Addressing rising emission from the light-duty truck class

Équiterre

Q&A

Équiterre & sustainable mobility

REDUCTION AND MODAL TRANSFER

Vehicle fleet, distances to travel

Mobilization

Collaboration with different groups
(Alliance TRANSIT, J'ai ma passe, etc.)

Awareness

Promotion of sustainable mobility, alternatives to solo driving (cocktail transport, e-bike, etc.)

Influence

Advocacy for public and active transportation at the federal and provincial levels, representation on the Politique de mobilité durable Advisory Committee

CAR FLEET IMPROVEMENT

Energy efficiency and decarbonization

Mobilization

Close collaboration with automotive and electrification stakeholders (Roulons électrique)

Awareness

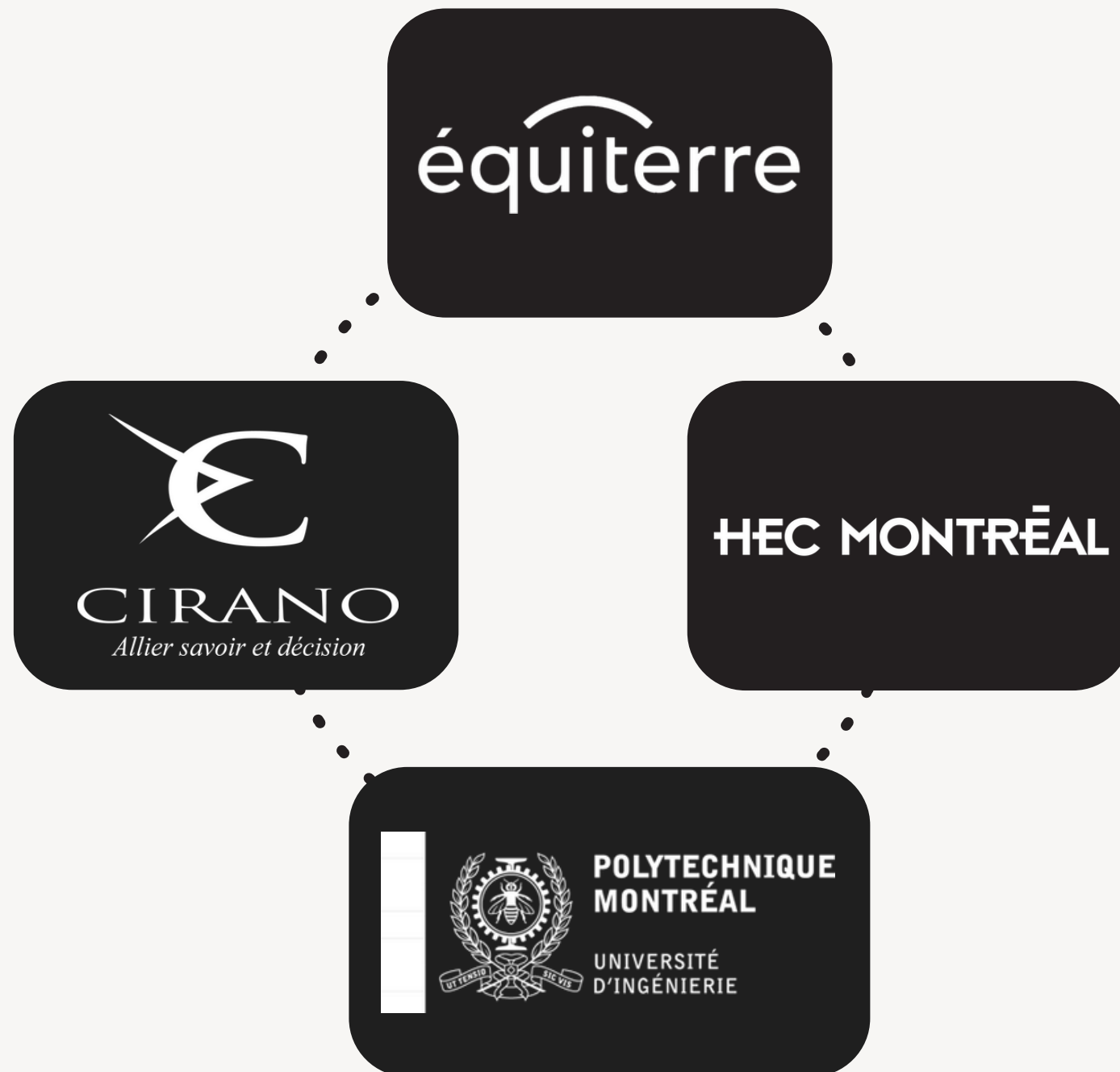
Transportation electrification campaigns
(individual electric vehicles, school buses, etc.)

Influence

Advocacy for stricter vehicle emission standards, representation on Québec's ZEV advisory committee

An extensive study to explore an alarming trend.

PARTNERS



TOPICS DISCUSSED

Causes of the phenomenon

- Socio-economic and historical factors
- The role of advertising
- Consumer portrait : survey, interviews and focus groups

Impacts

Solutions

Reducing social acceptability

FINANCIAL SUPPORT

Innovation, Science and Economic Development Canada

To carry out this research, Équiterre received funding under the Contributions Program for Non-Profit Consumer and Voluntary Organizations of Innovation, Science and of Innovation, Science and Economic Development Canada. The opinions expressed in this document are not necessarily those of Innovation, Science and Economic Development Canada or the Government of Canada.

Context

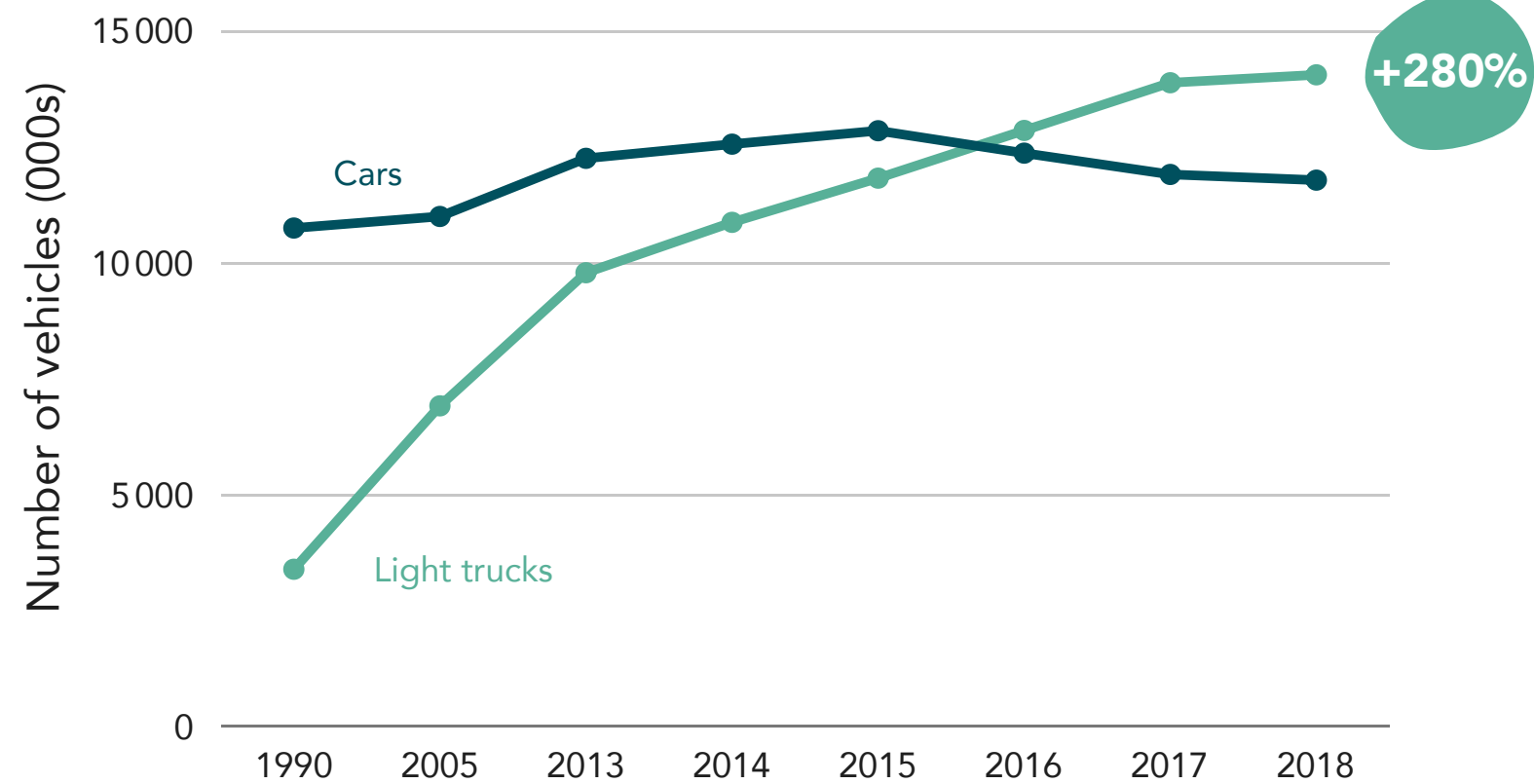
Growing popularity of light-duty trucks in Canada

The number of light-duty trucks in the vehicle fleet increased by 280% between 1990 and 2018

Impacts on...

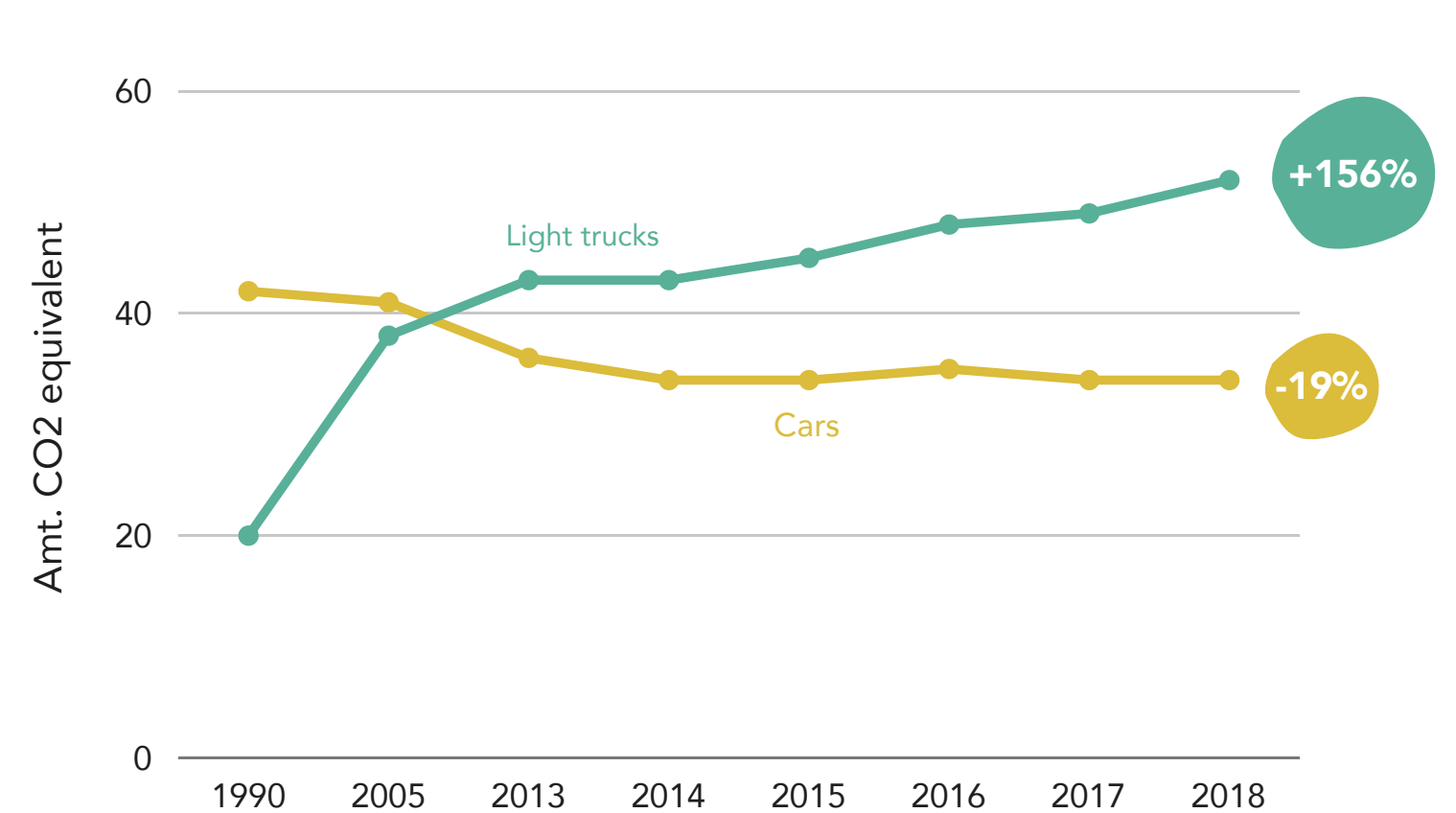
- Climate and environment
- Public safety
- Health
- Road infrastructure and congestion
- Canadian family finances

SALES OF NEW VEHICLES CANADA 1990-2018



Note: Light-duty trucks include most light-duty trucks, mini-vans and sport utility vehicles.
Source: Statistics Canada. Table 20-10-0002-01 New Motor Vehicle Sales by type of vehicle

CHANGES IN AMOUNT OF GHG EMISSIONS BY CATEGORY 1990-2018



Source: Environment and Climate Change Canada 2018

UNDERSTANDING THE TRANSFORMATION OF THE CANADIAN VEHICLE FLEET



Pre Catherine Morency, Ing., Ph.D.

Full professor

Polytechnique Montreal
Holder of the Mobility Chair
Holder of the Canada Research Chair
on the mobility of people



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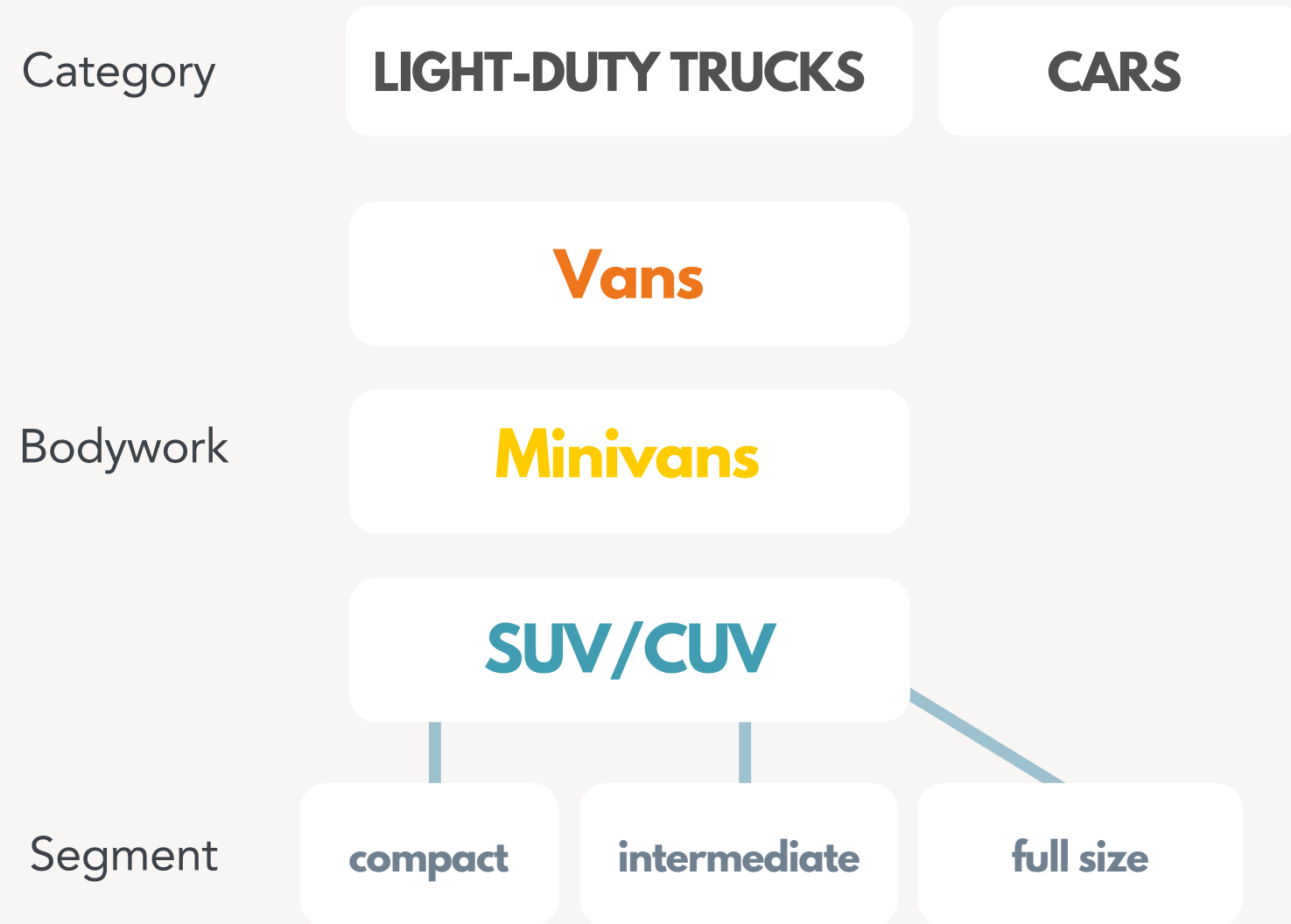
**IN 2020, WHAT WAS THE MARKET SHARE
OF LIGHT-DUTY TRUCKS AMONG NEW
VEHICLES SOLD IN CANADA?**

- 1. 30-45 %**
- 2. 45-60 %**
- 3. 60-75 %**
- 4. 75-90 %**

Methodology

DEFINING THE OBJECT OF STUDY

Evolutionary analysis of supply



Detailed analysis of supply
CVS (Canadian Vehicle
Specifications Database)



Analysis of government
and regulatory definitions

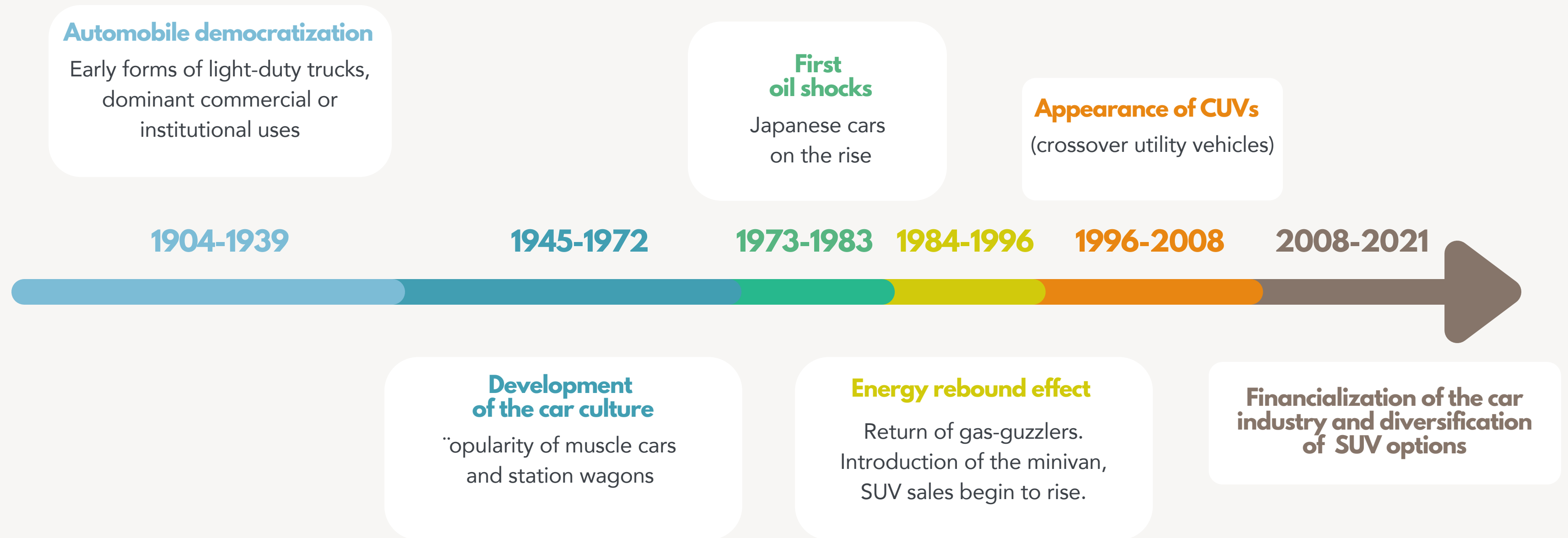
UNDERSTANDING THE FLEET TRANSFORMATION

Evolutionary analysis of the demand



History of light-duty trucks

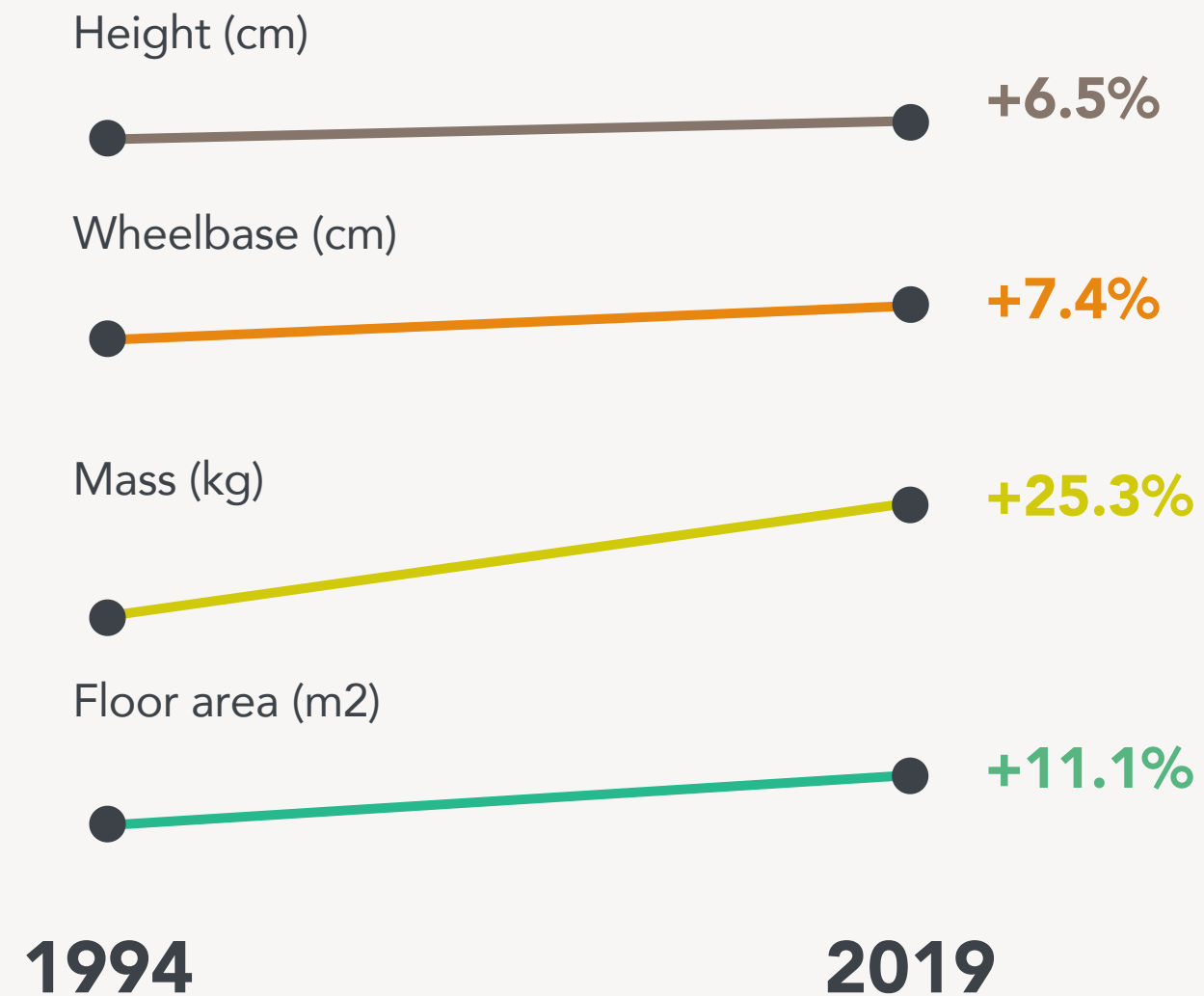
Explanatory factors observed during each period accumulate over time.



UNDERSTAND THE TRANSFORMATION OF THE VEHICLE FLEET AND ITS IMPACTS

Evolutionary analysis of the supply side

Evolution of average vehicle properties marketed in Canada



Slight decrease

in the supply of sedans, hatchbacks and pickup trucks

Slightly greater decline

in the supply of family cars

Significant and steady increase

in the number of SUVs available

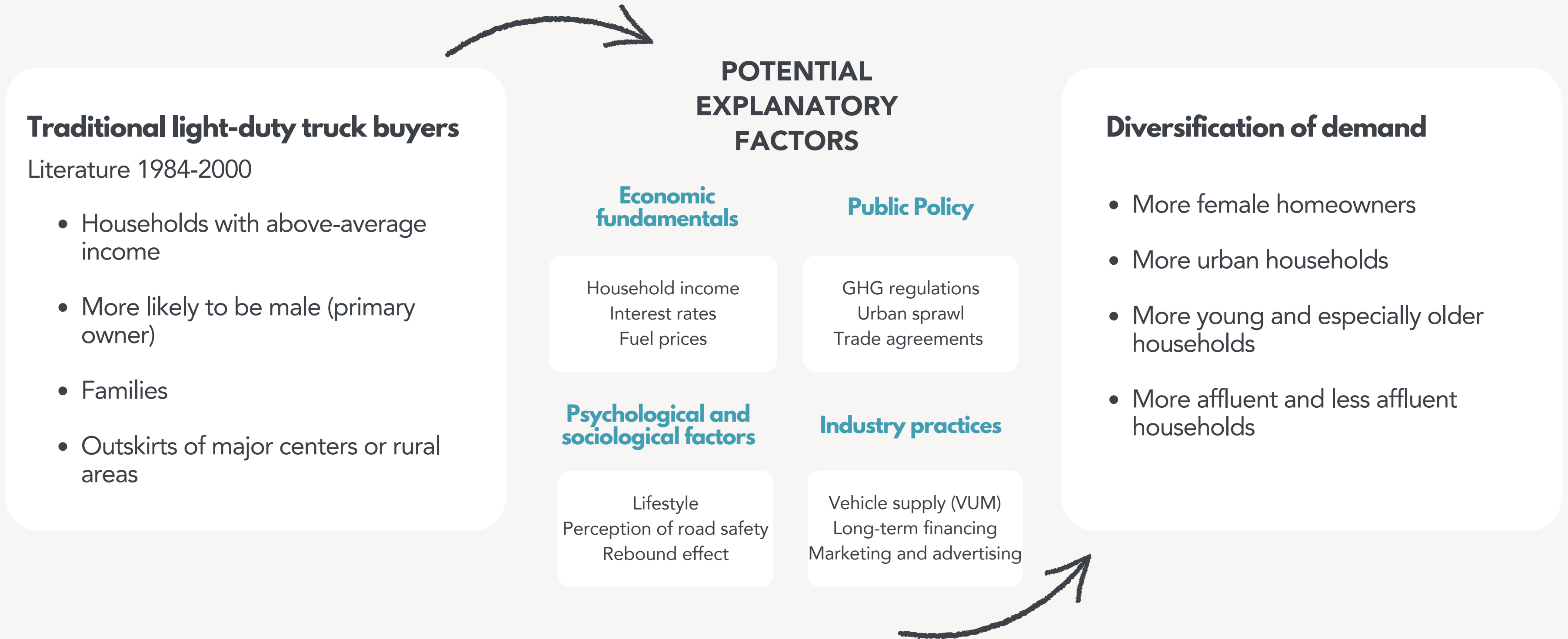


Inconsistent vehicle classification



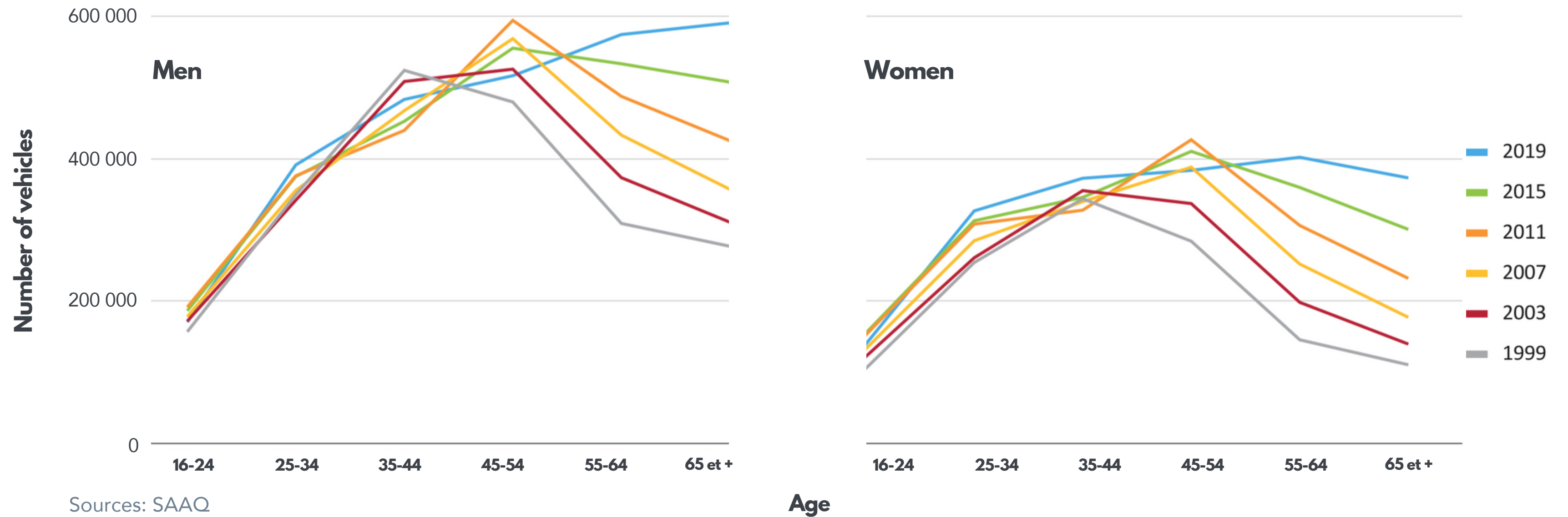
Industry and government definitions are not helpful in understanding the market

Analysis of the demand



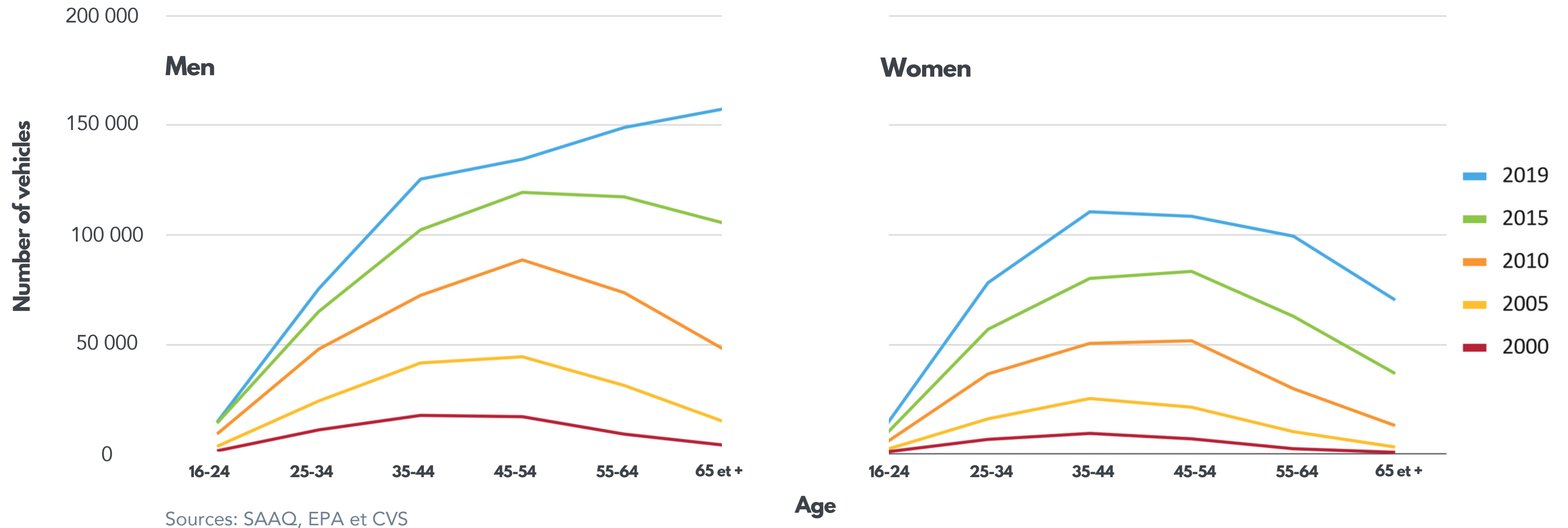
Fleet evolution in Quebec

Passenger vehicles of the SUV/CUV type by age and type of owner, Quebec, 2000-2019



Fleet transformation (demand)

Passenger vehicles of the SUV/CUV type by age and type of owner, Quebec, 2000-2019



Key findings

1 Classification not anchored on clear metrics
= **hinders a clear understanding of the market** and its transformations for government, researchers and consumers

Diversity of properties of SUVs/CUVs



= similar size

BUT belong to 2 categories (cars and light-duty trucks) and 4 types

2 Important demographic effect of persistence of motorization

3 Strong transformation in the physical properties of the vehicles

↓ **IMPACTS** ↓

Security

GHG

Efficiency of road networks

Use of public rights-of-way

Household financial health

Supply diversification

4

Attraction from a diversity of buyers

Supply and demand heterogeneity

**ACCORDING TO OUR STUDY,
WHAT PERCENTAGE OF CANADIAN
NEWSPAPERS AND MAGAZINES **AUTO ADS**
FEATURE LIGHT-DUTY TRUCKS?**

a. 12 %

b. 34 %

c. 56 %

d. 79%

LIMITLESS: CAR ADVERTISING IN CANADA



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Context

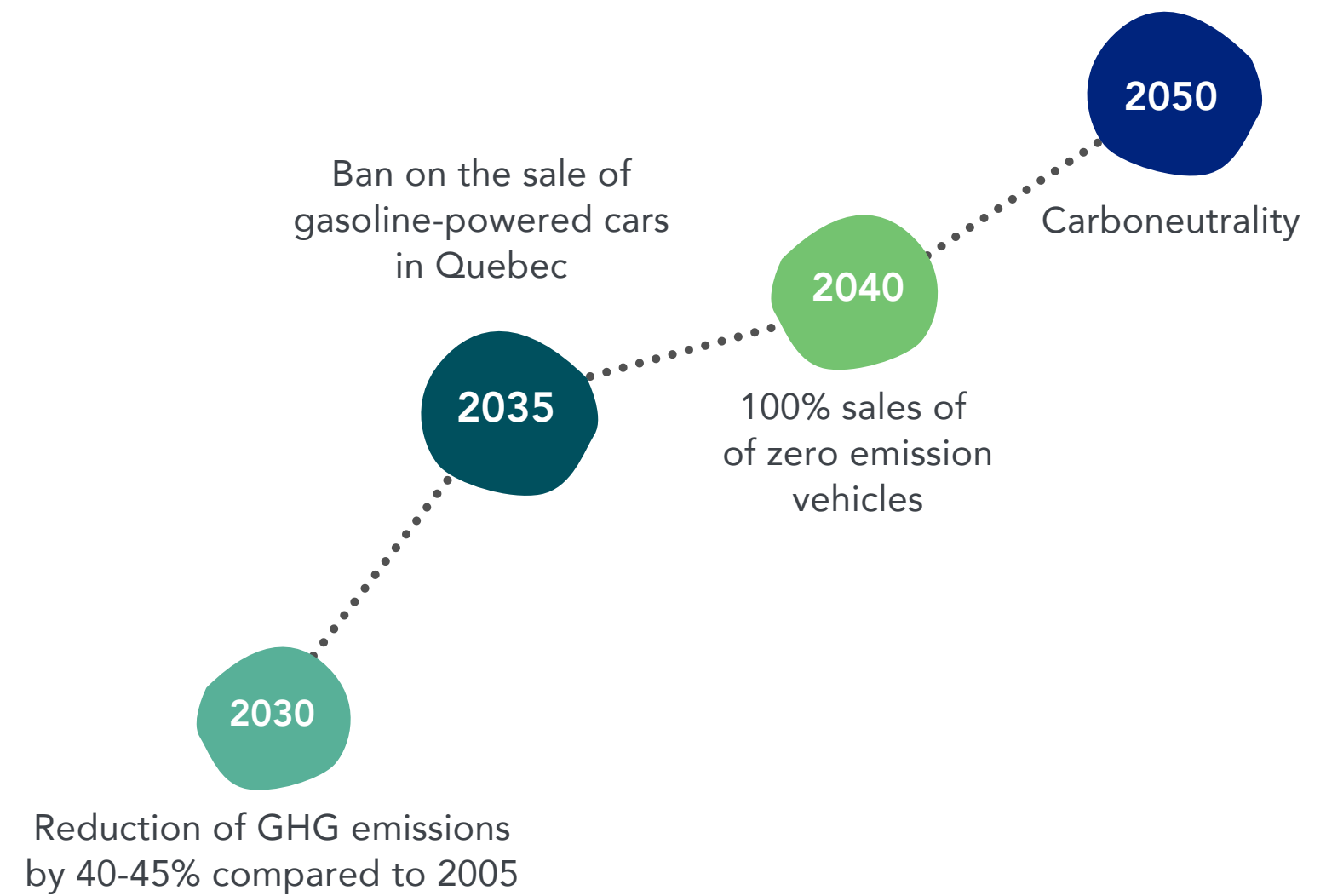
The importance and influence of car advertising in Canada

Investment in digital advertising



79% Canadian newspapers and magazines car advertising promoting light-duty trucks

Government commitments

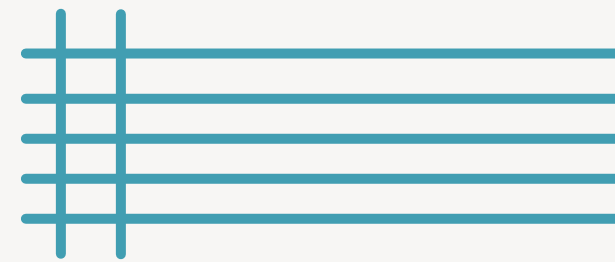


Methodology

CONTENT ANALYSIS



in 683 magazines and 446 newspapers
between Jan. 1, 2019 and May 1, 2020



Analysis grid based on literature
and interviews with experts

- Literature
- Interviews with experts
- Preliminary analysis of 20 ads

REGULATORY FRAMEWORK ANALYSIS



Analysis of legal documents
and standards

Car advertising

CONCERNS AROUND AD CONTENT

Nature

Car ads showcase natural environments to promote light-duty trucks

Attractive financing

Used to make these vehicles look more attractive and affordable, when they are in fact more expensive than standard cars

Security

A recurring sales pitch, when in fact light-duty trucks are more dangerous to motorists and pedestrians

Fuel and CO2

No ads display the vehicle's fuel consumption and/or CO2 emissions



L'ÉVÈNEMENT TRACTION INTÉGRALE INTELLIGENTE INTELLIGENT MOBILITY™

Taux à partir de **0,9%**[†] au financement ou à la location sur les modèles sélectionnés. + **1000\$*** de bonus traction intégrale sur modèles sélectionnés.

OU PROFITEZ D'UNE DE NOS OFFRES DE LOCATION AVANTAGEUSES SUR LES MODÈLES À TRACTION AVANT.

<p>LOUEZ L'OUTBACK À TRACTION AVANT POUR 288 \$ / MOIS AVEC 3 300 \$ EN COMPTANT INITIAL PENDANT 60 MOIS. C'EST COMME PAYER 59\$* / SEMAINE. Valeur au détail de 28 208\$. + 9\$* pour avoir la traction intégrale intelligente.</p>	<p>LOUEZ L'OUTBACK À TRACTION AVANT POUR 288 \$ / MOIS AVEC 3 300 \$ EN COMPTANT INITIAL PENDANT 60 MOIS. C'EST COMME PAYER 59\$* / SEMAINE. Valeur au détail de 28 208\$. + 9\$* pour avoir la traction intégrale intelligente.</p>
<p>LOUEZ L'OUTBACK À TRACTION AVANT POUR 288 \$ / MOIS AVEC 3 300 \$ EN COMPTANT INITIAL PENDANT 60 MOIS. C'EST COMME PAYER 55\$* / SEMAINE. Valeur au détail de 24 763\$. + 9\$* pour avoir la traction intégrale intelligente.</p>	<p>LOUEZ L'OUTBACK À TRACTION AVANT POUR 288 \$ / MOIS AVEC 3 300 \$ EN COMPTANT INITIAL PENDANT 60 MOIS. C'EST COMME PAYER 499\$* / MOIS. Valeur au détail de 40 708\$. INCLUT LA TRACTION INTÉGRALE.</p>

LA TOUTE NOUVELLE LOUEZ L'ALTIMA S POUR 344 \$ / MOIS AVEC 2 299 \$ EN COMPTANT INITIAL PENDANT 60 MOIS. C'EST COMME PAYER **79\$*** / SEMAINE. Valeur au détail de **29 908\$**.

VISITEZ C... POUR TOUTES LES DÉTAILS | L'ASSOCIATION DES CONCESSIONNAIRES NISSAN DU QUÉBEC

Observations

FEW CONSTRAINTS IN TERMS OF ADVERTISING PRACTICES



Canada

There are no federal laws or regulations specific to car advertising.



Belgium

The Car Advertising Code includes restrictions on the use of off-road locations related to the use of non-highway locations and requires that messages do not mislead the public about the environmental effects of the product.



United Kingdom

Car advertisements must include the fuel consumption and and CO2 emissions of vehicles.



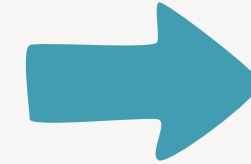
Australia

Standards exist to prohibit the depiction of environmental damage in advertising.



Sweden

Terms such as "environmentally friendly" can only be used in advertisements if, throughout its life cycle, the promoted product does not harm or improve the environment.



FINDINGS

THE ADVERTISING REGULATORY FRAMEWORK DOES NOT YET APPLY TO THE CAR INDUSTRY IN CANADA

CAR ADVERTISING, BOTH IN TERMS OF CONTENT AND REGULATORY FRAMEWORK...



- **ZEV SALES TARGETS**
- **GHG EMISSION REDUCTION TARGETS**



Recommendations

1.

Recognizing the increase in light-duty trucks as a public health and safety issue

2.

Forming an independent advisory committee

To provide advice and guidance to governments in the development and implementation of public policies

3.

Build on existing advertising restrictions

Promotion of tobacco products, unsafe driving messages, children's ads

4.

Progressively tighten the regulatory framework for car advertising
+
Increase investments in the promotion of sustainable mobility

- Create a code for car advertising

Requirement to display CO2 emissions, fuel consumption and retail price

Restrictions on the representation and use of nature

- Establish a mechanism for the review and validation of car advertising content
- Support and carry out more campaigns to promote sustainable mobility

"The vehicles being sold are getting bigger and heavier. This alarming trend runs counter to the climate objectives of our governments. To reverse it, we need to better regulate advertising practices."

Andréanne Brazeau
Mobility Analyst at Équiterre

CONSUMER MOTIVATIONS WHEN PURCHASING LIGHT-DUTY TRUCKS IN CANADA



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HEC MONTRÉAL



Methodology

SAMPLE



representative
of the Canadian population

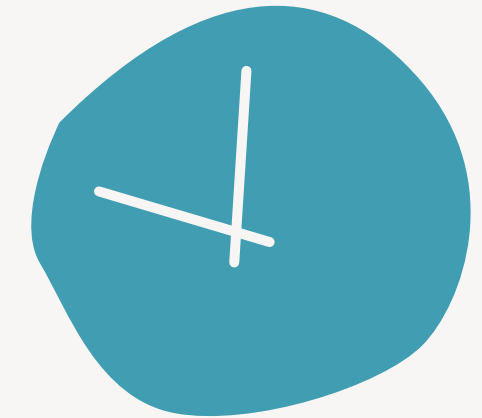
DATA COLLECTION

Online survey

**from October 27 to
November 30, 2020**

administered by Qualtrics

AVERAGE SURVEY DURATION



25.8 minutes

Key findings

Canadians agree that their vehicle is indispensable



Sample average

Main vehicle

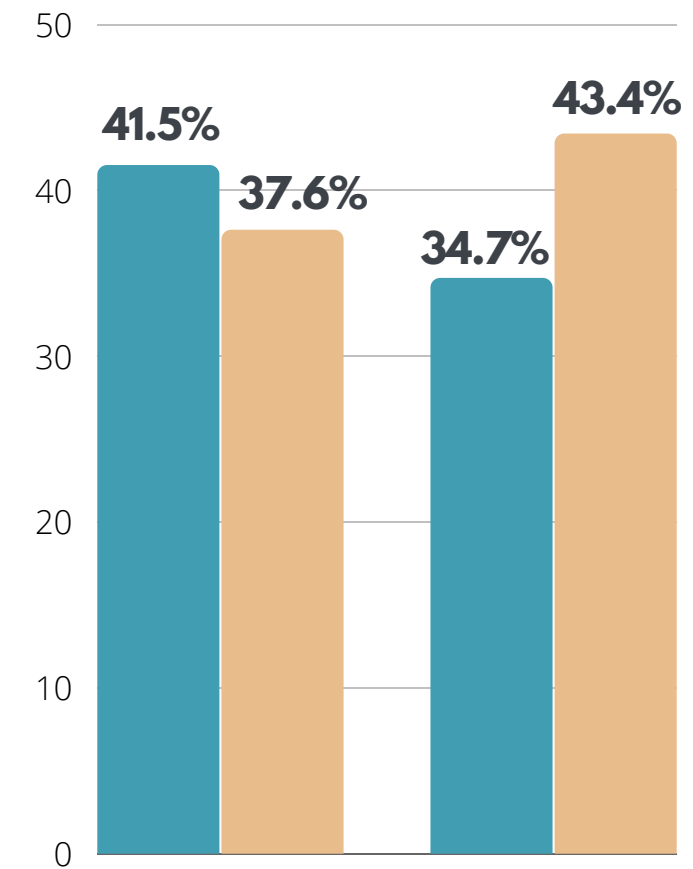
51% light-duty truck

including

38% SUV

7% pick-up

6% minivan



Dealer financing

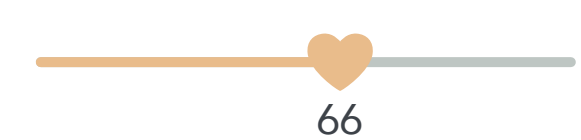
Personal savings

The most popular types of vehicles

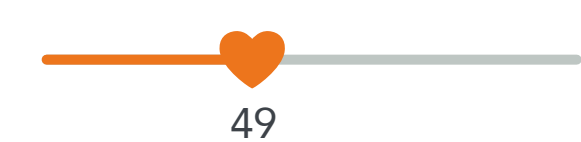
SUV



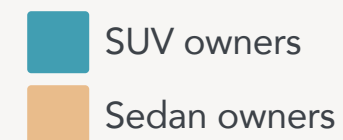
Sedan



Minivan



CONSUMER MOTIVATIONS FOR PURCHASING LIGHT-DUTY TRUCKS IN CANADA



Purchase intention

The purchasing likelihood is highest for:

SUVs



Sedans



Electric vehicles



Major factors influencing SUV preference

1

Personal and contextual factors

2

Aspects related to the external environment such as social norms or media influence

3

Product-related aspects

4

Individual psychological factors such as values and attitudes

1 Personal contextual aspects

Who is most likely to buy a light-duty truck?

People who use their vehicles to transport materials

pick-up truck

People living in rural areas

pick-up truck

Households with higher income

SUV

People who currently own an SUV

SUV

Households with more members

SUV

Women



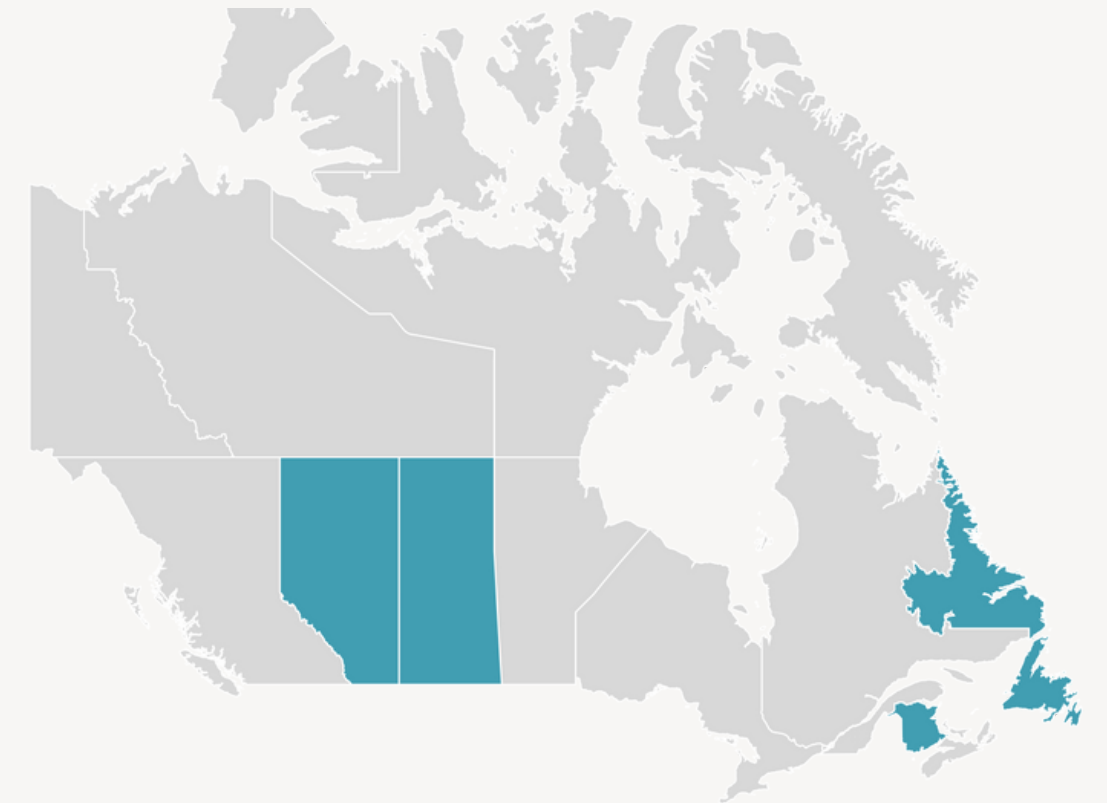
average of 4.86

SUV



average of 4.61

Provinces where SUVs are most popular

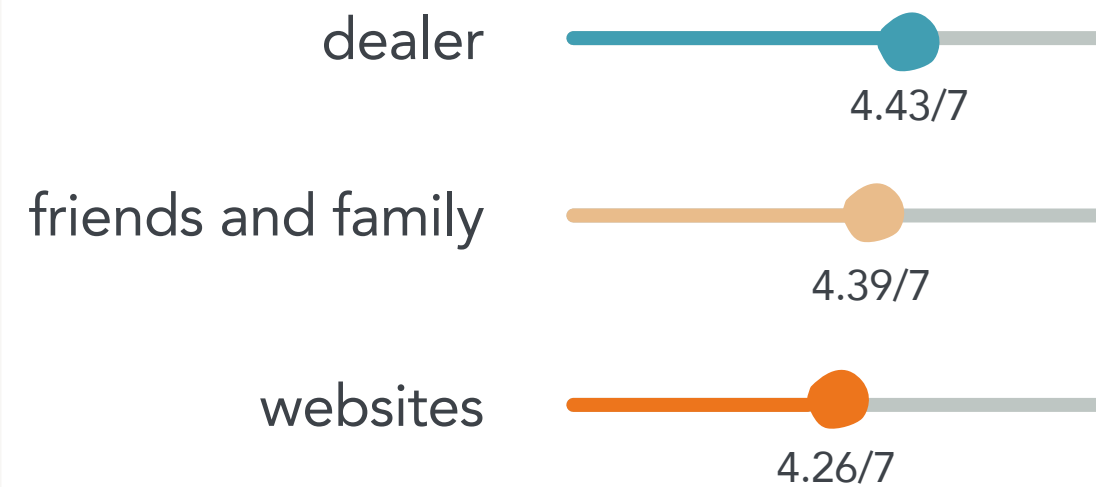


Saskatchewan (45.5%)
New-Brunswick (46.9%)
Newfoundland and Labrador (46.7%)
Alberta (43.6%)

2

Aspects related to the external environment

Most used source of information when purchasing



Media influence on SUV purchase intention

Strong correlations with...

TV and radio ads **(0.256)**
and social media **(0.250)**

as sources of information

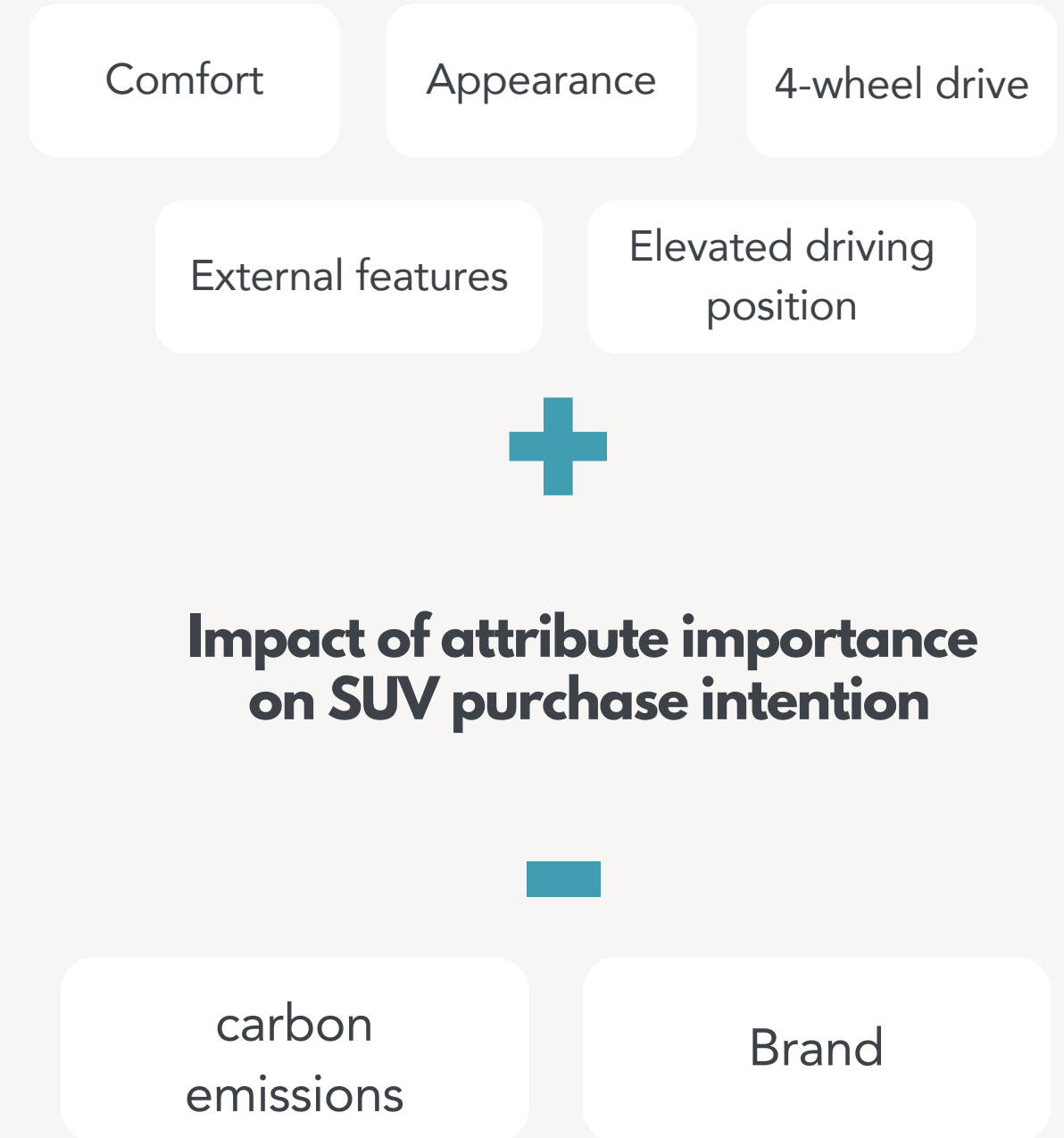
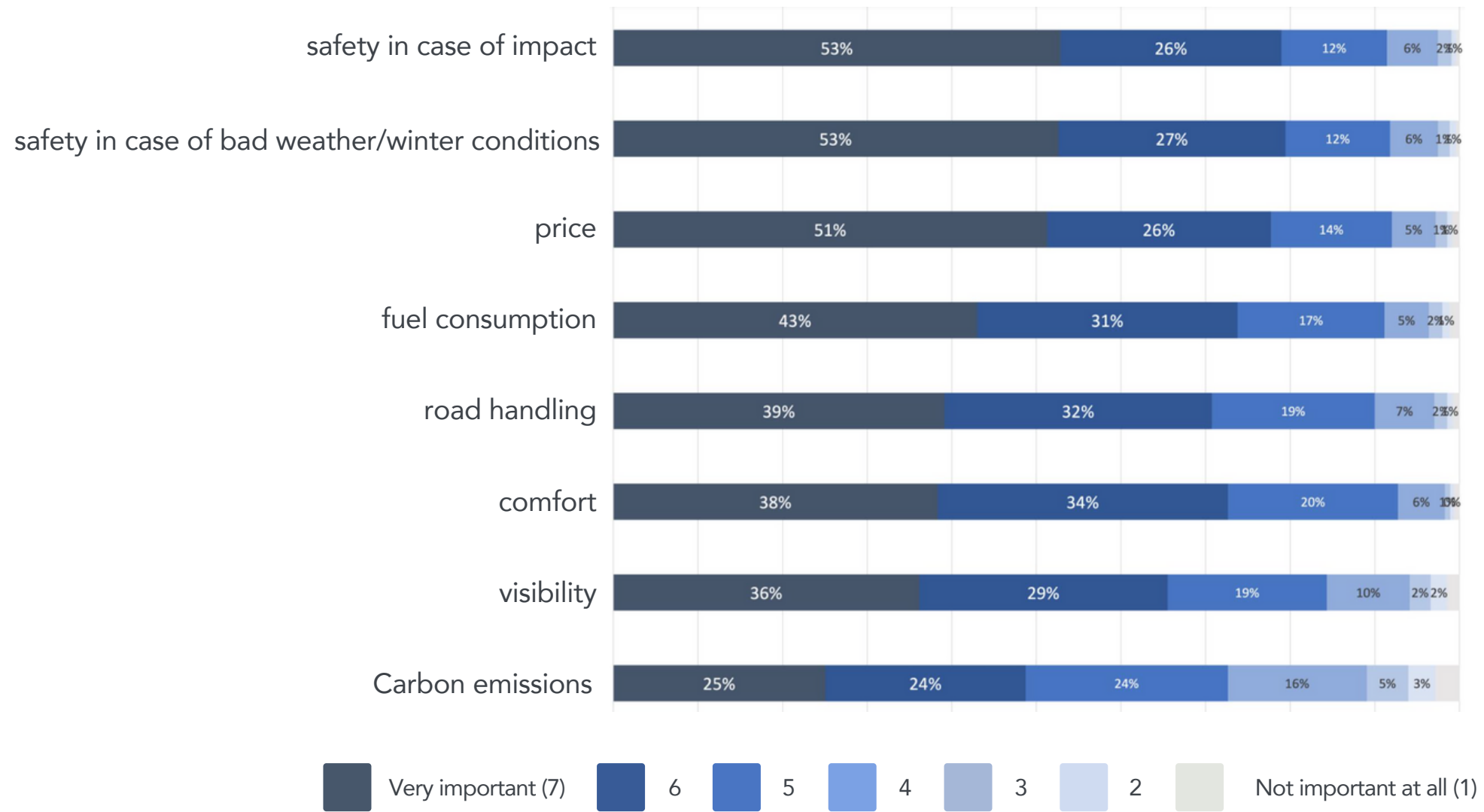
**WHAT DO YOU THINK
THE CANADIAN PUBLIC
RESPONDED TO THE
FOLLOWING QUESTION:**

**"WHAT IS THE MOST
IMPORTANT FACTOR
WHEN BUYING
A VEHICLE?"**

- 1. Safety**
- 2. Price**
- 3. Fuel consumption**
- 4. Comfort**
- 5. Handling**
- 6. Carbon emissions**
- 7. Cargo capacity**
- 8. Four wheel drive**

3 Product-related aspects

Importance given to different aspects when buying a vehicle



4 Individual psychological factors

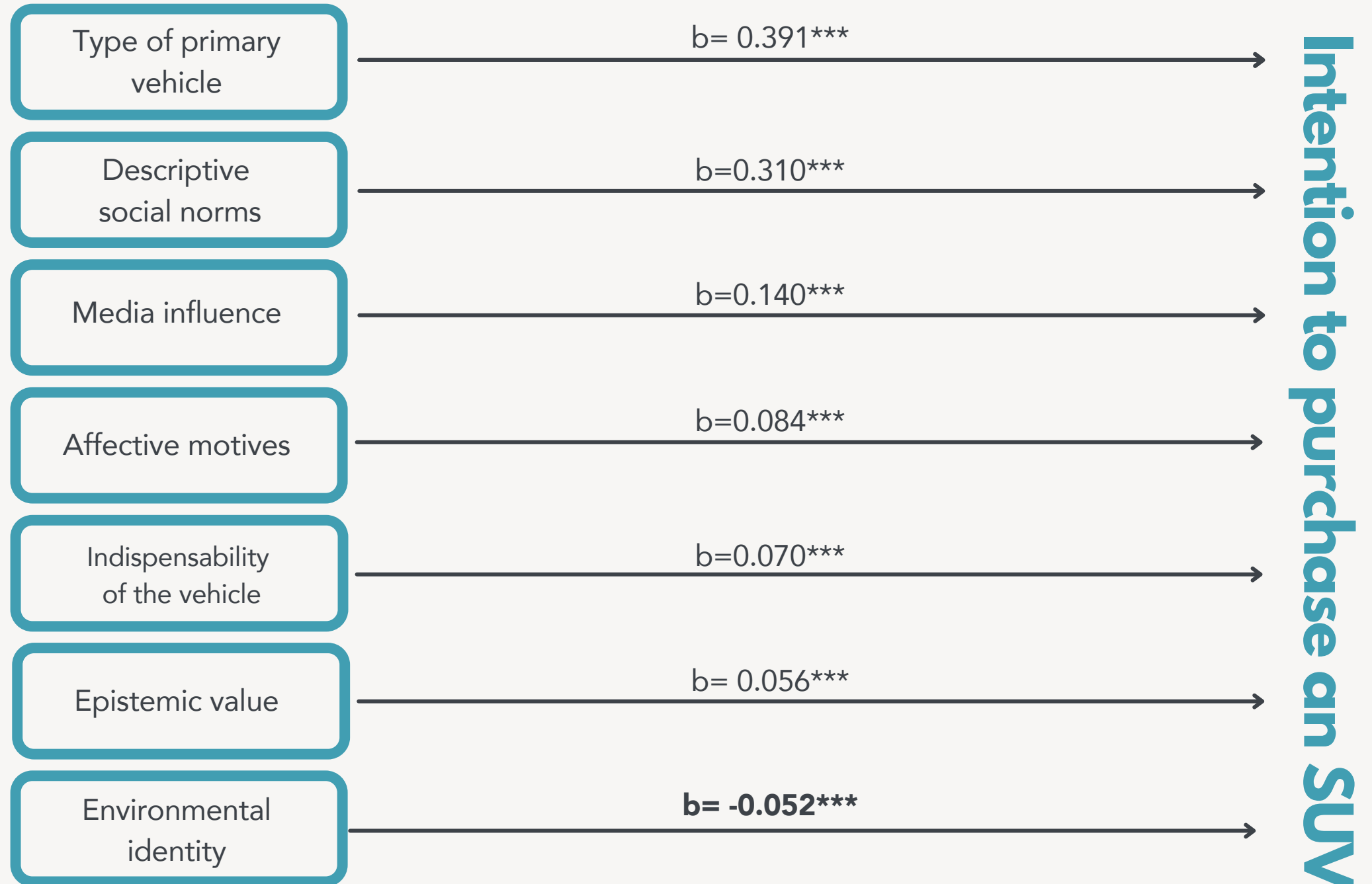
Dominant values and attitudes that guide a person's life

People who score high on affective motives, i.e. the pleasure of driving

more
likely to buy an SUV

People who have a stronger environmental identity

less
likely to buy an SUV



ANALYSIS OF MOTIVATIONS



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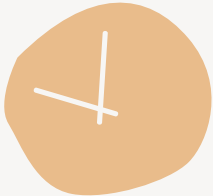
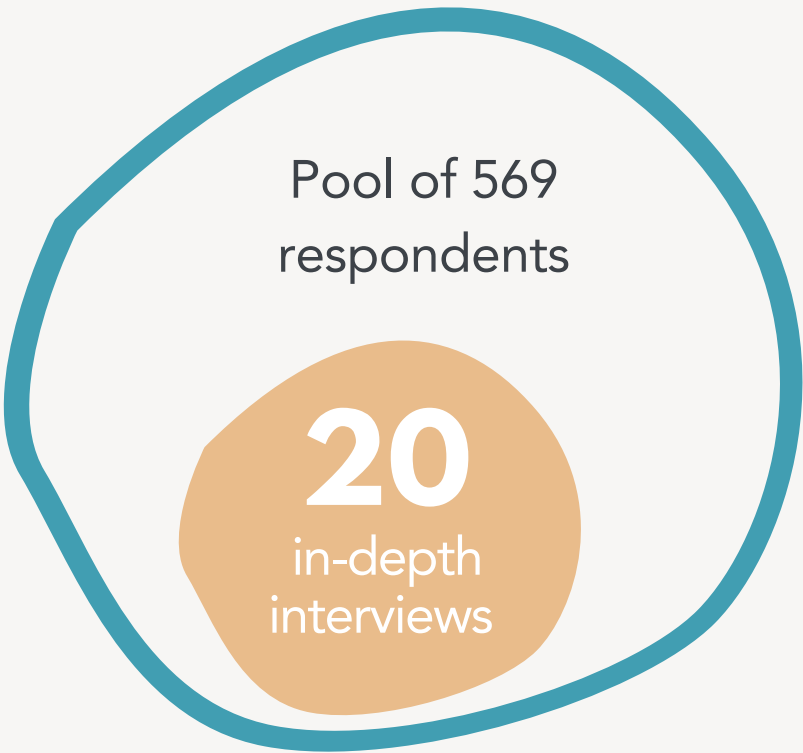
HEC Montréal

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Methodology

Interviews



Length
42 → 87 minutes

Verbatim
112 pages

Objective

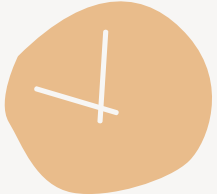
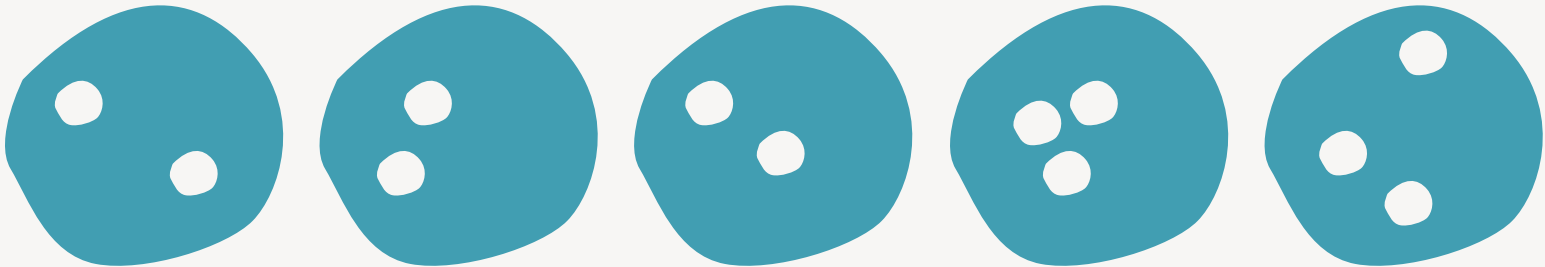
Scrutinize the aspects that were found to be the most important ones

Selection

Individuals from diverse backgrounds based on demographics and vehicle ownership

Focus groups

Number : 5
2 or 3 participants per group



Length
77 minutes average

Objective

Evaluate reactions to different types of ads

Selection

People with oral fluency and varying opinions

Methodology

Execution

Interviews

Semi-structured interview guide

- 1 Break the ice and learn about the interviewee
- 2 Deepen our understanding of the of the participant's specific perspective
Ex: SUV image, considerations, driving pleasure
- 3 Use of projective techniques to deepen certain potentially sensitive or delicate subjects

What features do you think are being promoted in SUV ads?

Our respondents who own SUVs often consider that their vehicles confer a certain social status and prestige. What do you think about this?

Focus groups

3 steps

Short-term" memories of existing SUV ads with visual support

- Long-term" memories of SUV ads
- Comparison of their responses with the results of Brazeau and Denoncourt (2021)

Participants' reactions to the presentation of existing SUV advertisements

Key findings

Interviews

Motivations and perceptions

Quo vadis?

Reflection on electric vehicles

Omnipresence of vehicles and driving pleasure

The decision-making process: from idea to reality

- First filter: sacrifices and influence of vehicle style
- Searching for information
- Understanding the financial aspects of buying a car
- Influence of government tax instruments

Understanding the SUV phenomenon

- SUV image
- Valued characteristics of SUVs

Normative influences and vehicles as inspirational products

Driving in the Canadian climate

Understanding the SUV phenomenon

Interviews

Pro SUV



- It meets all their needs
- It couldn't be more perfect!

"I can't think of anything negative I could say about an SUV, really, I just can't come up with anything bad to say"

Lise

Anti SUV



- High fuel consumption
- Unnecessary size
- High cost
- They provide a false sense of security

"An image of excess. It is over the top. (...) for the average motorists, who is probably just going to work, dropping kids off at school, when the roads are cleared, they don't need it"

Brigitte

Positive points made

The practical side of space

- Ex : storage space for Brigitte's walker

Safety

- Feelings of road presence, sturdiness and stability thanks to the larger size and heavier weight
- Feelings of increased protection in case of an accident
- Protection against the harsh Canadian climate

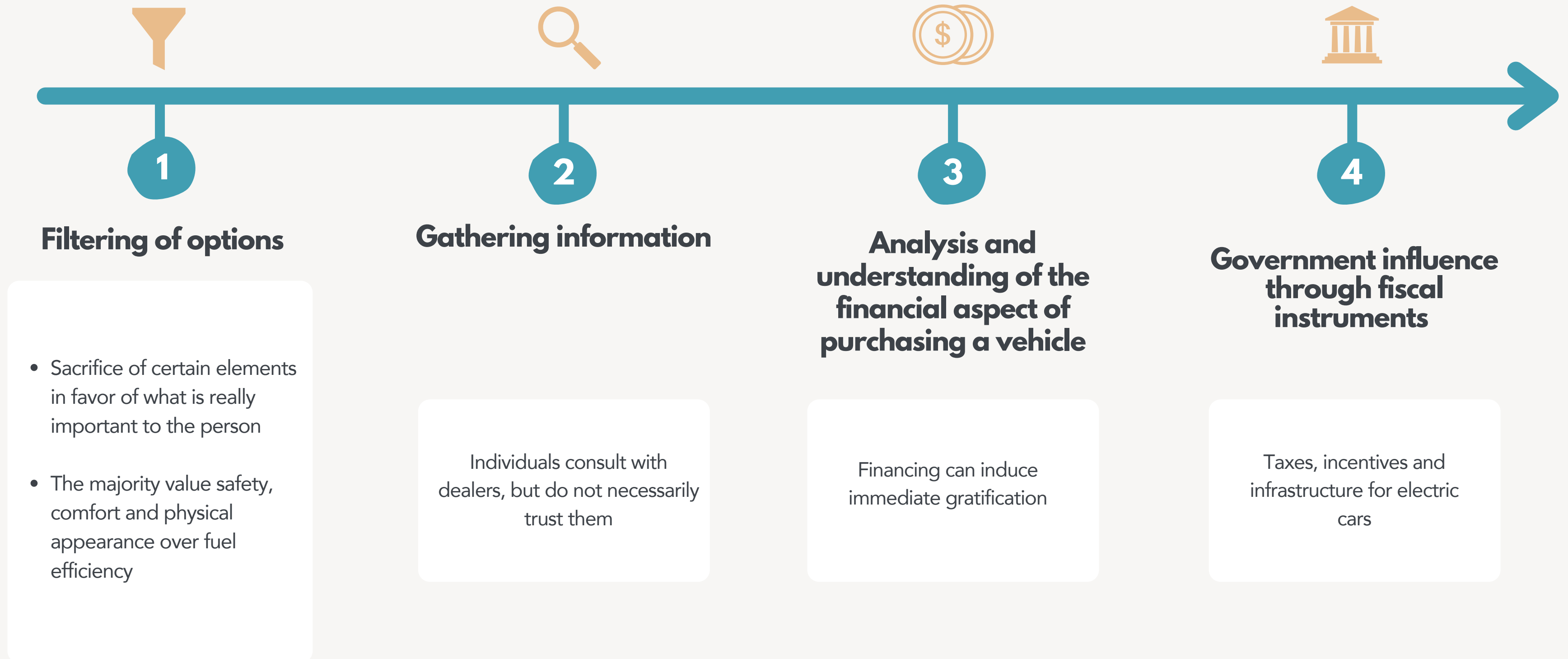
Comfort

- Height, space, technological elements

- The phenomenon of control
- The phenomenon of normality

Decision-making process

Interviews



THINK OF AN SUV AD.

**WHAT IS THE
FIRST THEME THAT
COMES TO MIND?**

- 1. Adventure and exploration**
- 2. Safety**
- 3. Emotional attachment**
- 4. Family friendly**



DID FUGITIVE DUO ESCAPE?
Mounties raise possibility **XPI-3**



Offers end July 31!

GET A **\$500** GAS CARD*
WITH THE PURCHASE OF ANY 2019 ELANTRA • ELANTRA GT • VELOSTER • TUCSON • SANTA FE

LEASE^o or FINANCE^e
FROM **0%** ON SELECT MODELS.

BIG

SUMMER SAVINGS EVENT

2020 ELANTRA
LEASE OR FINANCE FROM ONLY **\$40** monthly. **1.49%** financing. **60** months with \$1,500 down.

5 Year^W Warranty

Standard key features include:

- ▶ 1.6L turbo engine and 6-speed manual transmission
- ▶ Bluetooth[®] hands-free phone system
- ▶ 8.0" center console, interior climate control

2019 TUCSON
LEASE OR FINANCE FROM ONLY **\$65** monthly. **1.99%** financing. **48** months with \$1,140 down.

5 Year^W Warranty

Standard key features include:

- ▶ 2.4L turbo-injection 4-cylinder engine
- ▶ Automatic[®] 8-Speed[®] iShift[™]
- ▶ 8-speaker[®] Harman International[™] audio

hyundaicanada.com

Offers end July 31!

GET A **\$500** GAS CARD*
WITH THE PURCHASE OF ANY 2019 ELANTRA • ELANTRA GT • VELOSTER • TUCSON • SANTA FE

LEASE^o or FINANCE^e
FROM **0%** ON SELECT MODELS.

BIG

SUMMER SAVINGS EVENT

2019 KONA
LEASE OR FINANCE FROM ONLY **\$55** monthly. **2.49%** financing. **60** months with \$1,100 down.

5 Year^W Warranty

Standard key features include:

- ▶ 1.6L turbo-injection 4-cylinder engine
- ▶ Automatic[®] 8-Speed[®] iShift[™]
- ▶ 8-speaker[®] Harman International[™] audio

2019 SANTA FE
LEASE OR FINANCE FROM ONLY **\$75** monthly. **2.49%** financing. **60** months with \$1,100 down.

5 Year^W Warranty

Standard key features include:

- ▶ 2.4L turbo-injection 4-cylinder engine
- ▶ Automatic[®] 8-Speed[®] iShift[™]
- ▶ 8-speaker[®] Harman International[™] audio

BUYRIGHT BY THE MADE BETTER

- ✔ Express Shipping
- ✔ 5-Day Vehicle Exchange*
- ✔ Owner Reviews
- ✔ 5-Year Warranty**

*See us at hyundaicanada.com/buyright

hyundaicanada.com

D. PRESS/STAFF

Focus groups

Main elements raised

- Lack of transparency
- The models in the ads are not "real" vehicles (base model without any options)

Total price segmented into smaller installments to make the vehicle price appear more affordable

55\$/PER WEEK

PAYMENT OVER 196 WEEKS



TOTAL PRICE
???

The problematic nature of spreading payments over long periods

Total price displayed in less than 50% of ads

Lack of transparency of small print

La nouvelle Hoyora Adventure marque déposée de Hoyora Canada.



LOW INTEREST RATES

Interest rate confusion

Perspectives

What do consumers want to see in ads?

HYPOTHESIS

Operating costs



Financing arrangements



Energy efficiency



REALITY

"I don't think it's the most important thing in consumers' minds and if it's really important to them, let them buy an electric car"

Simon

However...

many of our respondents do not find this relevant.

Why?

- Lack of trust in dealers, government and manufacturers regardless of information displayed
- Relevance would be less in the Canadian context
 - Difficult climate
 - Cheap gasoline in Canada
- Difference in driving style

What messages could help reverse the trend?

Driving skills

The decisions we make as consumers are determined by our personal identity.

SOLUTION

Questioning the identity of the driver (by talking about their skills) could make these vehicles less attractive



Social norms

As individuals, we care about what is considered the norm.

SOLUTION

Designating environmentally friendly vehicles as the norm may make large vehicles less attractive



Legacy to future generations

Our family predisposes us to have preferences for certain vehicles.

SOLUTION

Communicate that SUV drivers are not only destroying the environment today, but indirectly encouraging their children to do so in the future



**BY WHAT PERCENTAGE
COULD GHG EMISSIONS BE REDUCED
IF THE CANADIAN VEHICLE FLEET
WAS MADE UP OF THE 10 MOST FUEL-
EFFICIENT MODELS
SOLD ON THE MARKET?**

a. 20%

b. 40%

c. 60%

d. 80%

UNDERSTANDING THE IMPACTS OF THE VEHICLE FLEET TRANSFORMATION



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**THERE IS A REFERENDUM TOMORROW
MORNING.**

**WHICH OF THESE MEASURES
AIMED AT REDUCING GHG EMISSIONS
WOULD YOU VOTE FOR?**

- 1. A higher carbon tax**
- 2. A bonus-malus on personal vehicles**
- 3. A reform of the car advertising regulatory framework**
- 4. Information campaigns on the impact of large vehicles**

ADDRESSING **RISING EMISSIONS** FROM THE LIGHT-DUTY TRUCK CLASS



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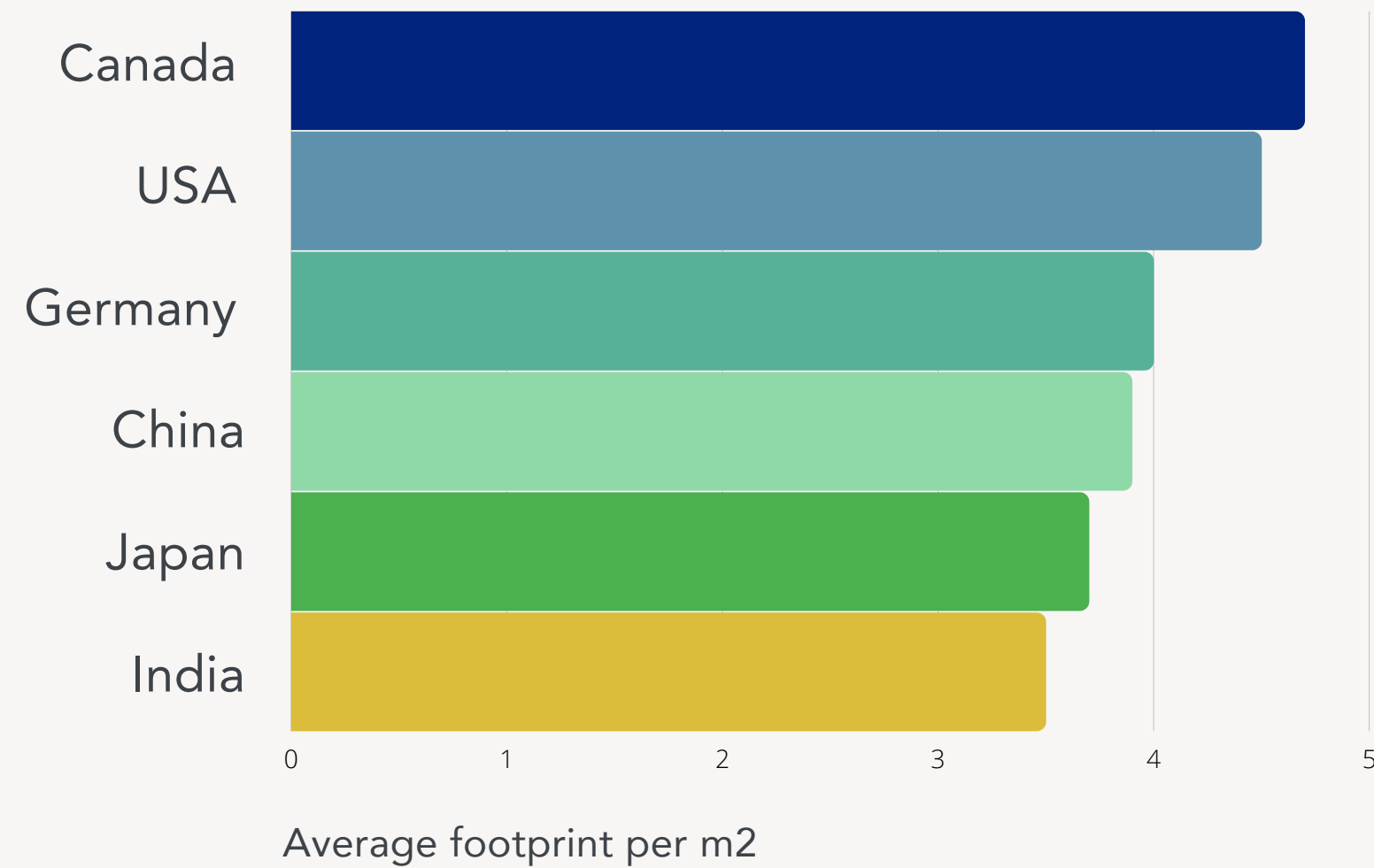
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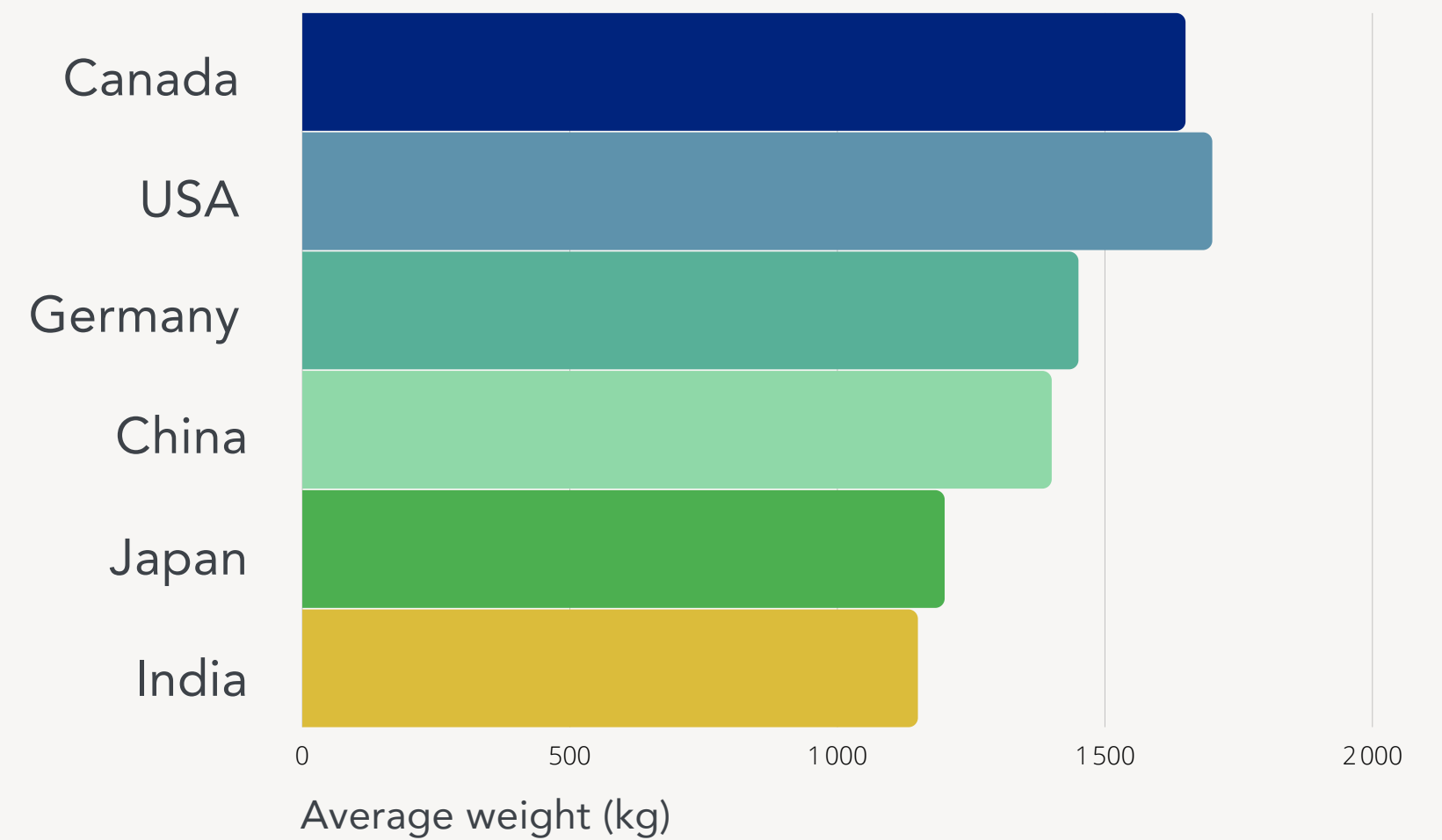
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Context

Vehicle footprint per country



Vehicle weight per country



Context

1 Canada: champion of GHG emissions

Canada's light-duty vehicle fleet ranks among the top in the world in terms of :

- Fuel consumption
- CO2 emissions per km driven
- Size and weight
- Vehicle footprint

Average fuel consumption



2 A fleet mostly made up of light-duty trucks

- 2020: 79% of new vehicles sold = light-duty trucks
- Market share growth maintained for a decade

3 What explains this craze?

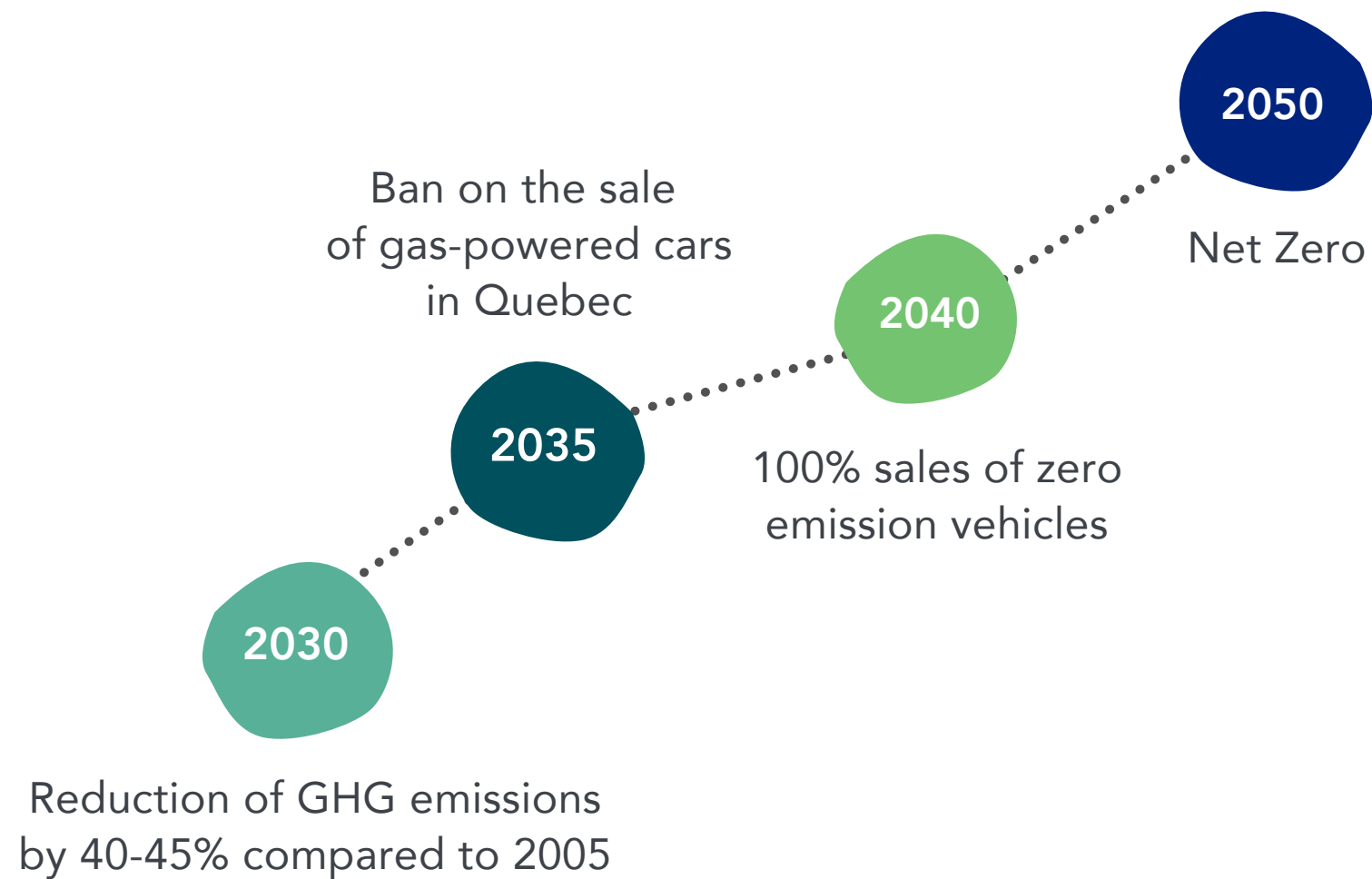
- Low gas prices
- Attractive financing terms
- Low public awareness relating to the costs associated with fuel-inefficient vehicles
- Appeal of larger vehicle's characteristics
- Effects of regulations on GHG emissions from light-duty vehicles

Focus on regulations

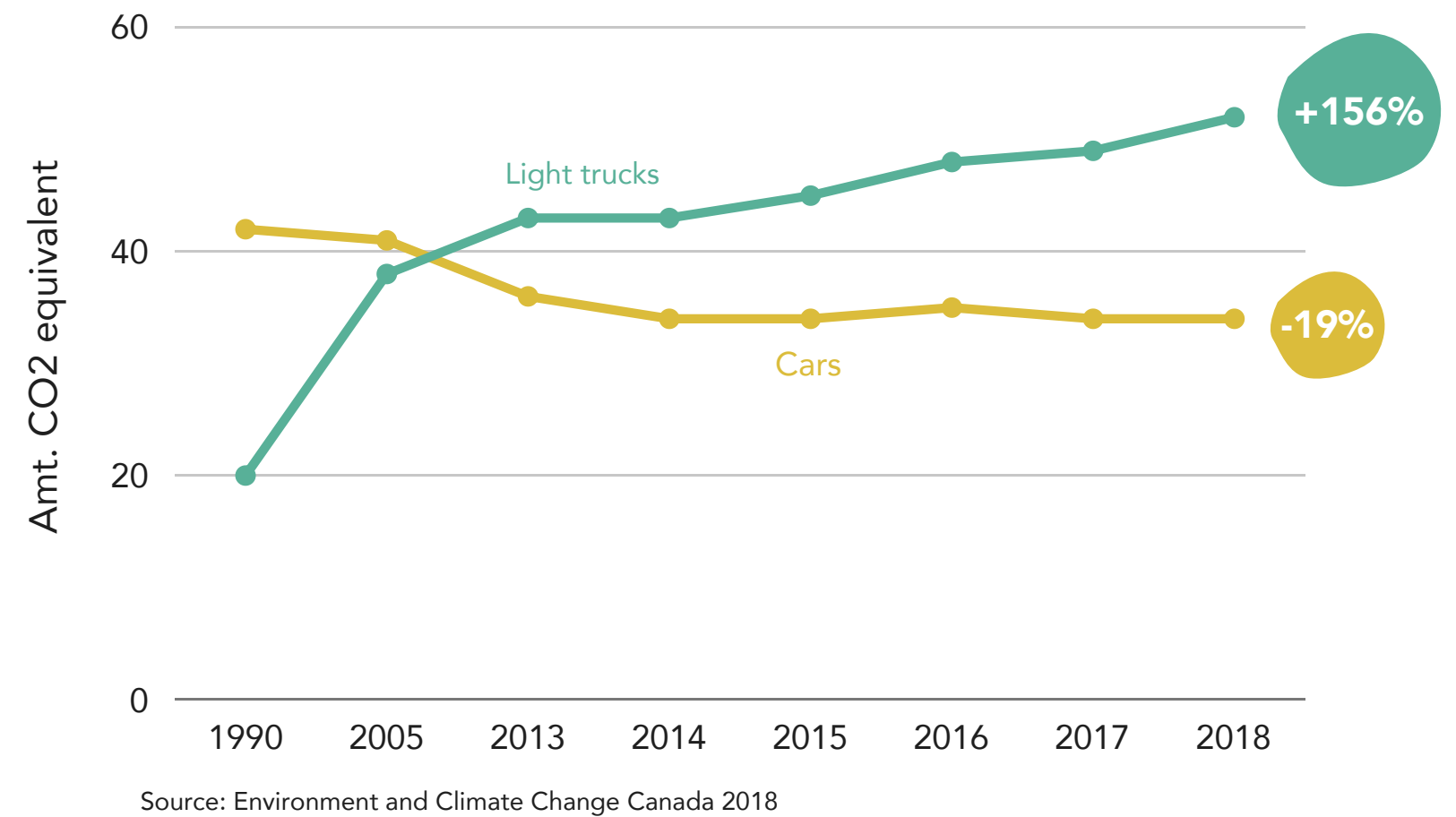
- Adopted in 2010
- Objectives:
 - Improve emissions monitoring
 - Encourage the use of cleaner and more efficient technologies
- Aligned to the US CAFE standards in 2012

Context

Government commitments



Changes in amount of GHG emission by category 1990-2018



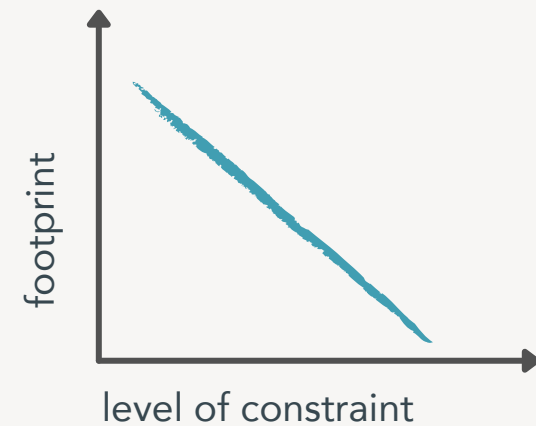
Current regulations

Obvious weaknesses

Light-duty truck standards allow about one-third more emissions:

- Comparatively higher weight and fuel consumption
- Micro-adjustments on the most polluting vehicles are more profitable for automakers

Regulations are based on the average global footprint of vehicles.

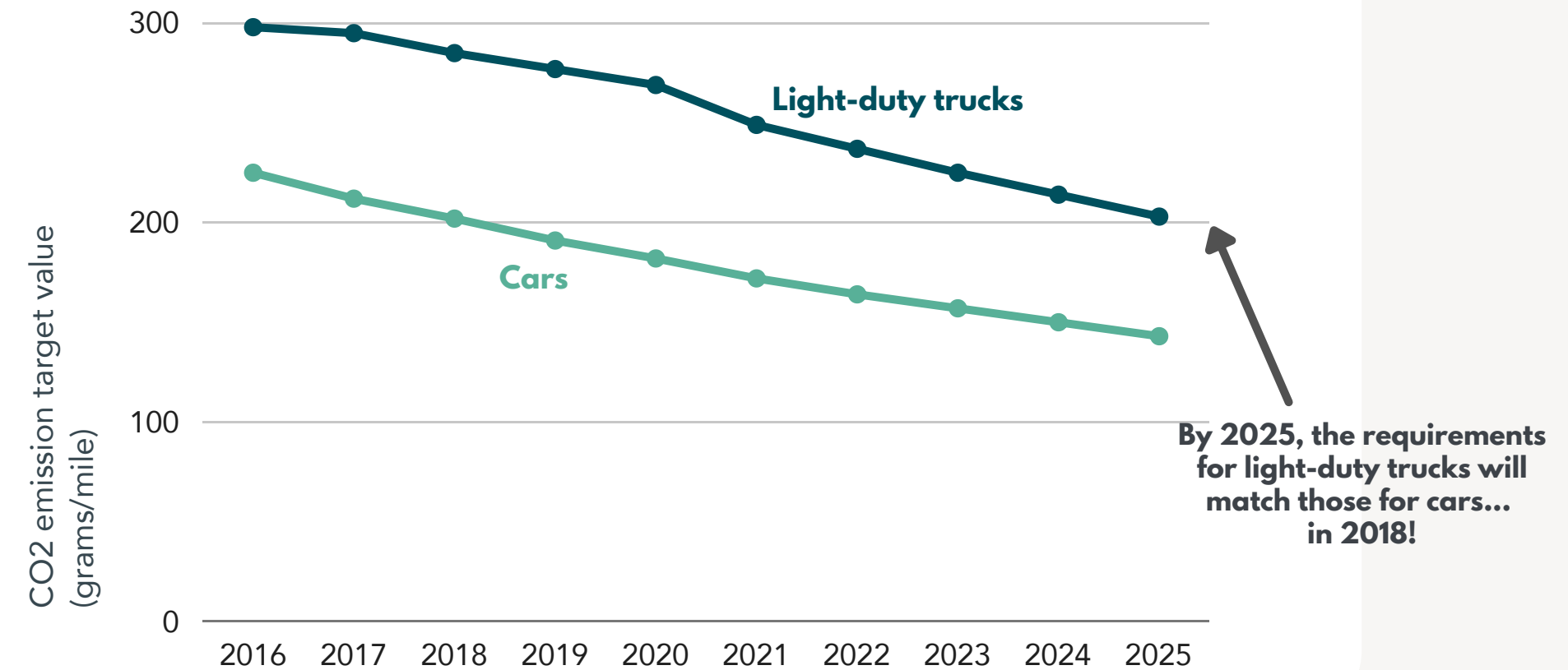


BUT

- Should be based on the vehicle's weight
- Lower the potential for innovation and energy potential
- Lead to delay in reducing GHG emissions from road transport



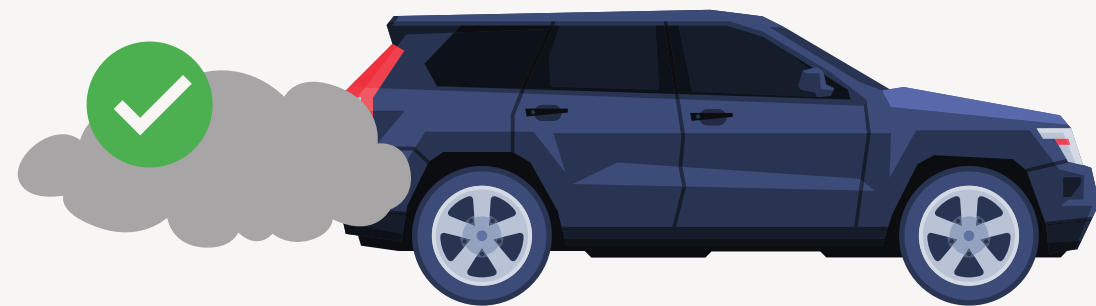
Vehicle-based emission reduction targets 2016-2025



Loopholes and solutions

Need to fix the regulation loopholes for the post-2025

✗ Innovation slowed down
by weak emission standards



✓ Increasing the stringency
of emission standards

✗ Compliance credits
too easy to earn



✓ Limiting the flexibility
of compliance credits

✗ Ease of compliance with “off-cycle”
credits not acting on the core issue



✓ Reforming the off-cycle
credit system

Complementary Recommendations

Reversing the trend

Sustained and increasing carbon pricing



Implementation of a feebate system



Reforming iZEV and Green Levy programs

Implementation of a scrappage program



Tax credits or bonus through iZEV program

Include an active transportation aspect

Reforming the regulatory framework of car advertising

Aligning advertising practices with climate and electrification targets

- Content and display of information
- Investments
- Share of large vehicles vs sustainable mobility

Awareness

Deployment of awareness campaigns to inform the public about the collective and individual costs of owning a fuel-efficient vehicle

Adoption of best practices for transparency and informed decision-making at dealerships

QUESTIONS

