WEBINAR

THE RISE OF LIGHT-DUTY TRUCKS: REVERSING THE TREND

Présenté by équiterre

In collaboration with

[Logos of various institutions]
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

<table>
<thead>
<tr>
<th>REDUCTION AND MODAL TRANSFER</th>
<th>CAR FLEET IMPROVEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vehicle fleet, distances to travel</td>
<td>Energy efficiency and decarbonization</td>
</tr>
<tr>
<td><strong>Mobilization</strong></td>
<td><strong>Mobilization</strong></td>
</tr>
<tr>
<td>Collaboration with different groups (Alliance TRANSIT, J’ai ma passe, etc.)</td>
<td>Close collaboration with automotive and electrification stakeholders (Roulons électrique)</td>
</tr>
<tr>
<td><strong>Awareness</strong></td>
<td><strong>Awareness</strong></td>
</tr>
<tr>
<td>Promotion of sustainable mobility, alternatives to solo driving (cocktail transport, e-bike, etc.)</td>
<td>Transportation electrification campaigns (individual electric vehicles, school buses, etc.)</td>
</tr>
<tr>
<td><strong>Influence</strong></td>
<td><strong>Influence</strong></td>
</tr>
<tr>
<td>Advocacy for public and active transportation at the federal and provincial levels, representation on the Politique de mobilité durable Advisory Committee</td>
<td>Advocacy for stricter vehicle emission standards, representation on Québec's ZEV advisory committee</td>
</tr>
</tbody>
</table>
An extensive study to explore an alarming trend.

To carry out this research, Équiterre received funding under the Contributions Program for Non-Profit Consumer and Voluntary Organizations 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.

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

Partners
- Équiterre
- CIRANO
- HEC Montréal
- Polytechnique Montréal

Financial Support
Innovation, Science and Economic Development Canada
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.

Context

- 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

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

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Research associate  
Mobility Chair of Polytechnique Montreal

Jean-Simon Bourdeau, Ing.  
Research associate  
Mobility Chair of Polytechnique Montreal
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

<table>
<thead>
<tr>
<th>Category</th>
<th>LIGHT-DUTY TRUCKS</th>
<th>CARS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bodywork</td>
<td>Vans</td>
<td>Minivans</td>
</tr>
<tr>
<td>Segment</td>
<td>compact</td>
<td>intermediate</td>
</tr>
</tbody>
</table>

- Detailed analysis of supply (CVS (Canadian Vehicle Specifications Database))
- Analysis of government and regulatory definitions

#### Understanding the Fleet Transformation

- Evolutionary analysis of the demand

  - Analysis of trends: global (Google Trends) and provincial (Statistics Canada)
  - Detailed analysis of the demand (SAAQ + CVS + EPA)
  - Economic theory of consumption
  - Review of scientific and grey literature
History of light-duty trucks

Explanatory factors observed during each period accumulate over time.

Automobile democratization
Early forms of light-duty trucks, dominant commercial or institutional uses

1904-1939

First oil shocks
Japanese cars on the rise

1945-1972

Development of the car culture
Popularity of muscle cars and station wagons

1973-1983

Energy rebound effect
Return of gas-guzzlers. Introduction of the minivan, SUV sales begin to rise.

1984-1996

Appearance of CUVs
(crossover utility vehicles)

1996-2008

Financialization of the car industry and diversification of SUV options

2008-2021
Evolutionary analysis of the supply side

**Evolution of average vehicle properties marketed in Canada**

- Height (cm): +6.5%
- Wheelbase (cm): +7.4%
- Mass (kg): +25.3%
- Floor area (m²): +11.1%

1994 2019

**Inconsistent vehicle classification**

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

UNDERSTAND THE TRANSFORMATION OF THE VEHICLE FLEET AND ITS IMPACTS
Analysis of the demand

Traditional light-duty truck buyers
Literature 1984-2000
- Households with above-average income
- More likely to be male (primary owner)
- Families
- Outskirts of major centers or rural areas

Potential explanatory factors

Economic fundamentals
- Household income
- Interest rates
- Fuel prices

Public Policy
- GHG regulations
- Urban sprawl
- Trade agreements

Psychological and sociological factors
- Lifestyle
- Perception of road safety
- Rebound effect

Industry practices
- Vehicle supply (VUM)
- Long-term financing
- Marketing and advertising

Diversification of demand
- More female homeowners
- More urban households
- More young and especially older households
- More affluent and less affluent households

Understand the transformation of the vehicle fleet and its impacts
Fleet evolution in Quebec

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

Sources: SAAQ
Fleet transformation (demand)

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

Sources: SAAQ, EPA et CVS

UNDERSTAND THE TRANSFORMATION OF THE VEHICLE FLEET AND ITS IMPACTS
Key findings

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

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

4. Attraction from a diversity of buyers

Diversity of properties of SUVs/CUVs
- + small SUV
- + big SUV

= similar size

BUT belong to 2 categories (cars and light-duty trucks) and 4 types
- Sedan
- Bicorps
- Familial
- SUV

Supply diversification
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

Research Team

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The importance and influence of car advertising in Canada

Investment in digital advertising
- Car industry: $1.6 billion (19%)
- Retail: 21%

79% of Canadian newspapers and magazines advertise promoting light-duty trucks

Government commitments
- Ban on the sale of gasoline-powered cars in Quebec
- 100% sales of zero emission vehicles
- Reduction of GHG emissions by 40-45% compared to 2005
- Carboneutrality
- 2030
- 2035
- 2040
- 2050
Methodology

CONTENT ANALYSIS

- 132 ads
- in 683 magazines and 446 newspapers between Jan. 1, 2019 and May 1, 2020
- Preliminary analysis of 20 ads
- Analysis grid based on literature and interviews with experts

REGULATORY FRAMEWORK ANALYSIS

- Analysis of legal documents and standards
- Literature
- Interviews with experts
- Preliminary analysis of 20 ads
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
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 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
Recognizing the increase in light-duty trucks as a public health and safety issue

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

Andréeanne Brazeau
Mobility Analyst at Équiterre

"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."
CONSUMER MOTIVATIONS
WHEN PURCHASING LIGHT-DUTY TRUCKS IN CANADA

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Methodology

SAMPLE

1,377 vehicle owners 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

Main vehicle

- **51%** light-duty truck
- **38%** SUV
- **7%** pick-up
- **6%** minivan

The most popular types of vehicles

- SUV: 71
- Sedan: 66
- Minivan: 49

CONSUMER MOTIVATIONS FOR PURCHASING LIGHT-DUTY TRUCKS IN CANADA
Purchase intention

The purchasing likelihood is highest for:

- **SUVs**: 4.74/7
- **Sedans**: 4.39/7
- **Electric vehicles**: 3.78/7

**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

CONSUMER MOTIVATIONS FOR PURCHASING LIGHT-DUTY TRUCKS IN CANADA
### 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
  - **SUV**
    - Average of 4.86
  - **SUV**
    - Average of 4.61

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**Provinces where SUVs are most popular**

- Saskatchewan (45.5%)
- New-Brunswick (46.9%)
- Newfoundland and Labrador (46.7%)
- Alberta (43.6%)
Aspects related to the external environment

Most used source of information when purchasing

- Dealer: 4.43/7
- Friends and family: 4.39/7
- Websites: 4.26/7

Media influence on SUV purchase intention

Strong correlations with...

- TV and radio ads: (0.256)
- 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

<table>
<thead>
<tr>
<th>Aspect</th>
<th>Very important (7)</th>
<th>6</th>
<th>5</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>Not important at all (1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safety in case of impact</td>
<td>53%</td>
<td>26%</td>
<td>12%</td>
<td>5%</td>
<td>7%</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>Safety in case of bad weather/winter conditions</td>
<td>53%</td>
<td>27%</td>
<td>15%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>Price</td>
<td>52%</td>
<td>26%</td>
<td>14%</td>
<td>5%</td>
<td>5%</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>Fuel consumption</td>
<td>43%</td>
<td>31%</td>
<td>17%</td>
<td>0%</td>
<td>0%</td>
<td>2%</td>
<td></td>
</tr>
<tr>
<td>Road handling</td>
<td>39%</td>
<td>34%</td>
<td>19%</td>
<td>7%</td>
<td>9%</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>Comfort</td>
<td>38%</td>
<td>34%</td>
<td>20%</td>
<td>6%</td>
<td>6%</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>Visibility</td>
<td>35%</td>
<td>29%</td>
<td>19%</td>
<td>10%</td>
<td>7%</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>Carbon emissions</td>
<td>29%</td>
<td>24%</td>
<td>20%</td>
<td>11%</td>
<td>5%</td>
<td>0%</td>
<td></td>
</tr>
</tbody>
</table>

Impact of attribute importance on SUV purchase intention

- External features
- Elevated driving position
- Carbon emissions
- Brand

CONSUMER MOTIVATIONS FOR PURCHASING LIGHT-DUTY TRUCKS IN CANADA
**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

### Intention to purchase an SUV

- Type of primary vehicle: $b = 0.391^{***}$
- Descriptive social norms: $b = 0.310^{***}$
- Media influence: $b = 0.140^{***}$
- Affective motives: $b = 0.084^{***}$
- Indispensability of the vehicle: $b = 0.070^{***}$
- Epistemic value: $b = 0.056^{***}$
- Environmental identity: $b = -0.052^{***}$
ANALYSIS OF MOTIVATIONS

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**Methodology**

**Interviews**
- **Objective**: Scrutinize the aspects that were found to be the most important ones
- **Selection**: Individuals from diverse backgrounds based on demographics and vehicle ownership
- **Number**: 20 in-depth interviews
- **Pool of respondents**: 569
- **Length**: 42 → 87 minutes
- **Verbatim**: 112 pages

**Focus groups**
- **Objective**: Evaluate reactions to different types of ads
- **Selection**: People with oral fluency and varying opinions
- **Number**: 5
- **2 or 3 participants per group
- **Length**: 77 minutes average

**Pool of 569 respondents**
**Methodology**

**Execution**

**Interviews**

- **Semi-structured interview guide**
  
1. Break the ice and learn about the interviewee
2. Deepen our understanding 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

**Focus groups**

- **3 steps**
  
1. 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)
2. Participants' reactions to the presentation of existing SUV advertisements

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

Motivations and perceptions

Understanding the SUV phenomenon
- SUV image
- Valued characteristics of SUVs

Omnipresence of vehicles and driving pleasure

Normative influences and vehicles as inspirational products

Quo vodis?
Reflection on electric vehicles

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

Driving in the Canadian climate

Interviews
Understanding the SUV phenomenon

**Interviews**

**Pro SUV**
- It meets all their needs
- It couldn’t be more perfect!

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

"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

"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

1. **Filtering of options**
   - Sacrifice of certain elements in favor of what is really important to the person
   - The majority value safety, comfort and physical appearance over fuel efficiency

2. **Gathering information**
   - Individuals consult with dealers, but do not necessarily trust them

3. **Analysis and understanding of the financial aspect of purchasing a vehicle**
   - Financing can induce immediate gratification

4. **Government influence through fiscal instruments**
   - Taxes, incentives and infrastructure for electric cars
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
Focus groups

- Total price segmented into smaller installments to make the vehicle price appear more affordable
- The problematic nature of spreading payments over long periods
- Lack of transparency of small print

Main elements raised

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

Total price displayed in less than 50% of ads

Interest rate confusion
**Perspectives**

**What do consumers want to see in ads?**

- **Operating costs**
- **Financing arrangements**
- **Energy efficiency**

**HYPOTHESIS**

- Operating costs
  - 2020 ESCAPE
  - Cost/km 0.65$ 
  - $6,500$/ year
  - 10,000km/year
  - On all New 2020 Escape models

- Financing arrangements
  - 2020 ESCAPE
  - 0% APR Purchase Financing
  - For up to 72 Months
  - On all New 2020 Escape models

- Energy efficiency
  - 2020 ESCAPE
  - 8.19 fuel consumption (l/100km)
  - $1,012.59$/ year
  - 10 000km/year
  - On all New 2020 Escape models

**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?

<table>
<thead>
<tr>
<th>Driving skills</th>
<th>Social norms</th>
<th>Legacy to future generations</th>
</tr>
</thead>
<tbody>
<tr>
<td>The decisions we make as consumers are determined by our personal identity.</td>
<td>As individuals, we care about what is considered the norm.</td>
<td>Our family predisposes us to have preferences for certain vehicles.</td>
</tr>
<tr>
<td><strong>SOLUTION</strong> Questioning the identity of the driver (by talking about their skills) could make these vehicles less attractive.</td>
<td><strong>SOLUTION</strong> Designating environmentally friendly vehicles as the norm may make large vehicles less attractive.</td>
<td><strong>SOLUTION</strong> Communicate that SUV drivers are not only destroying the environment today, but indirectly encouraging their children to do so in the future.</td>
</tr>
</tbody>
</table>

*SUVs are more often involved in accidents.*
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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Holder of the Canada Research Chair on the mobility of people

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Research associate
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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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Vehicle footprint per country

- Canada
- USA
- Germany
- China
- Japan
- India

Average footprint per m²

Vehicle weight per country

- Canada
- USA
- Germany
- China
- Japan
- India

Average weight (kg)
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

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

Average fuel consumption

<table>
<thead>
<tr>
<th>Country</th>
<th>Fuel Consumption</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canada</td>
<td>8.9 L/km</td>
</tr>
<tr>
<td>United States</td>
<td>8.6 L/km</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>5.8 L/km</td>
</tr>
</tbody>
</table>

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**

- **2030**: Reduction of GHG emissions by 40-45% compared to 2005
- **2035**: 100% sales of zero emission vehicles
- **2040**: Net Zero
- **2050**: Ban on the sale of gas-powered cars in Quebec

**Changes in amount of GHG emission by category 1990-2018**

- **Cars**
  - 1990: 60
  - 2005: -19%
  - 2013: 0
  - 2014: 0
  - 2015: 0
  - 2016: 0
  - 2017: 0
  - 2018: 0

- **Light trucks**
  - 1990: 40
  - 2005: +156%

Source: Environment and Climate Change Canada 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

- By 2025, the requirements for light-duty trucks will match those for cars... in 2018!
Loopholes and solutions

Need to fix the regulation loopholes for the post-2025

- Innovation slowed down by weak emission standards
- Compliance credits too easy to earn
- Ease of compliance with “off-cycle” credits not acting on the core issue

- Increasing the stringency of emission standards
- Limiting the flexibility of compliance credits
- Reforming the off-cycle credit system
Complementary Recommendations

Reversing the trend

- Sustained and increasing carbon pricing
- Implementation of a feebate system
- Implementation of a scrappage program
- Reforming the regulatory framework of car advertising
- Awareness

- Tax credits or bonus through iZEV program
- Include an active transportation aspect

- Aligning advertising practices with climate and electrification targets
  - Content and display of information
  - Investments
  - Share of large vehicles vs sustainable mobility

- 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