Request for Information – Life Cycle Assessments of Light-Duty Vehicles

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PART 1 - BACKGROUND AND PURPOSE OF THE RFI

1. Background of the Request for Information

The Government of Canada has committed to transition to low-carbon and climate-resilient operations while also reducing environmental impacts beyond carbon. The Greening Government Strategy Cabinet Directive articulates an ambitious set of goals and commitments to ensure that Canada is a global leader in government operations that are low-carbon, resilient and green.

This Strategy includes reducing greenhouse gas emissions from federal government facilities and fleets by 40% below 2005 levels by 2025 and at least 90% below 2005 levels by 2050. The Strategy commits to ensuring 75% of new light-duty unmodified fleet vehicle purchases are zero-emission vehicles (ZEVs) or hybrids and ensuring that the government's light-duty fleet comprises 100% ZEVs by 2030. ZEVs include battery-electric, plug-in hybrid, and hydrogen fuel cell vehicles.

The Greening Government Strategy Cabinet Directive also includes a commitment to have net-zero emissions from the procurement of goods and services by 2050. This commitment takes into account what are commonly known as Scope 1, 2 and 3 emissions, including product supply chains.[1] Together, these three sources of emissions can be considered product "life-cycle" emissions, encompassing those emissions from all processes beginning at raw material acquisition until end-of-life. Life-cycle assessments, environmental product declarations, and carbon footprints are commonly used methods to estimate the potential environmental emissions and impacts, including greenhouse gas emissions, of products across their life cycles.

2. Purpose of the Request for Information

Public Services and Procurement Canada (PSPC) is launching a Request for Information (RFI) in order to seek information and feedback from the global industry with regard to the availability of life-cycle greenhouse gas emission information on light-duty vehicles.

The purpose of this RFI is to achieve the following:

a) Assess the availability of life-cycle greenhouse gas emissions estimates, and whether the data required to produce these estimates have been collected by vehicle manufacturers;
b) Assess the degree of difficulty that vehicle manufacturers would experience in providing information on the life-cycle greenhouse gas emissions from light-duty vehicles, and the means of estimating these emissions; and
c) Use the data collected to inform potential future modifications of the Government of Canada's procurement process for the light-duty vehicle category, in support of the Greening Government Strategy net-zero emissions procurement commitment.

PART 2 – INSTRUCTIONS FOR RESPONDING TO RFI

1. Deadline

Please submit your responses by December 23rd, 2022.

2. Format of Responses Requested

PSPC is seeking input and responses to specific questions from the industry and suppliers. The responses to be entered into the fillable PDF or a Word document should be sent by e-mail to:

[1] The Government of Canada's Greenhouse Gas Inventory provides the following definitions for Scope 1, 2 and 3 emissions: "Scope 1 GHG emissions are produced by sources that are owned or controlled by the government. For example, the greenhouse gases emitted from the combustion of fuels in vehicles or in buildings. Scope 2 GHG emissions are those generated indirectly from the consumption of purchased energy (electricity, heating, and cooling). Scope 3 GHG emissions are indirect such as the emissions produced in the supply chain of the goods and services we buy."

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3. Response Costs

PSPC will not reimburse any respondent for expenses incurred in responding to this RFI.

4. Treatment of Responses

4.1 Use of Responses

Responses will be tabulated and summarized for internal use to inform potential future modifications of the Government of Canada's procurement processes for the light-duty vehicle category, in support of the Greening Government Strategy net-zero emissions procurement commitment.

4.2 Review Team

A review team composed of PSPC staff will review the responses. PSPC reserves the right to hire any independent consultant, or use any Government resources that it considers necessary to review any response. Not all members of the review team will necessarily review all responses.

4.3 Confidentiality

Respondents should indicate and mark any portions of their response that they consider proprietary or confidential. PSPC will handle these portions in a confidential manner in accordance with the Access to Information Act of Canada. In particular, Section 20(1) states:

"20 (1) Subject to this section, the head of a government institution shall refuse to disclose any record requested under this Part that contains

(a) trade secrets of a third party;

(b) financial, commercial, scientific or technical information that is confidential information supplied to a government institution by a third party and is treated consistently in a confidential manner by the third party; …

(c) information the disclosure of which could reasonably be expected to result in material financial loss or gain to, or could reasonably be expected to prejudice the competitive position of, a third party; or

(d) information the disclosure of which could reasonably be expected to interfere with contractual or other negotiations of a third party."

4.4 Follow-up Activity

PSPC may, at its discretion, contact any respondents to follow up with additional questions or for clarification of any aspect of a response. PSPC may at its discretion agree to meet with respondents to provide respondents with the opportunity to present and/or demonstrate their capabilities in relation to this RFI. Respondents' presentations are at no obligation to PSPC, and respondents will be responsible for all costs associated with PSPC's invitation to make a presentation.

5. Enquiries

Respondents who have questions should submit them by email to:

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6. Official Languages

Responses to this RFI are requested to be presented in either of the Official Languages of Canada (English or French).

PART 3 – QUESTIONS

Respondents should complete the following questions and provide any additional comments they consider relevant to this Request for Information.

1. Has your company ever undertaken or commissioned a life cycle assessment (LCA), carbon footprint (CF) or environmental product declaration (EPD) of one or more of its vehicle models?

   Yes ☐ No ☐

   If yes, go to question 2. If no, go to question 7.

2. Is producing vehicle LCAs / CFs / EPDs a regular/standard practice, or does your company only carry out LCA / CF / EPD occasionally?

   Regular / Standard Practice for all models ☐
   Regular / Standard Practice for some models ☐
   Occasional Practice ☐

   What has been the rationale to produce these vehicle LCAs / CFs / EPDs?

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3. For which of your company's vehicle models currently in production has it undertaken or commissioned an LCA, CF, or EPD? Please indicate the model year. Is the LCA, CF or EPD information made public? Please answer "no" for those LCAs, CFs, or EPDs that are produced but not made public (i.e., for internal company use only).

Vehicle Model with LCA / CF / EPD	**Model Year**	**LCA / CF / EPD information made public?**		
		Yes		**No**
		Full report (provide link or attachment)	**Results only** (provide link or attachment)	

4. Do the LCAs / CFs / EPDs listed in the above table conform to their respective ISO (International Organization for Standardization) standards:

   a) ISO 14040/14044 series of standards for LCAs?

   Yes ☐ No ☐ Some do ☐

   b) ISO 14067 for CFs?

   Yes ☐ No ☐ Some do ☐

   c) ISO 14025 for EPDs?

   Yes ☐ No ☐ Some do ☐

5. Are these LCAs / CFs / EPDs third-party verified?

   Yes ☐ No ☐ Some are ☐

6. Is the latest methodology used by your company for its vehicle LCAs / CFs / EPDs publicly available?

   Yes ☐ No ☐

   If yes, please provide the link(s):

   _____

   _____

   If no, please describe the main elements of the methodology your company used to produce the LCAs / CFs / EPDs for its vehicles (see guide in Annex 1).

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7. In order to generate credible life-cycle greenhouse gas estimates, it is important to base the estimates on as much primary data as possible. Please complete the following table which will be used to assess the availability of such data to support the production of life-cycle greenhouse estimates.

   Please note that "corporate knowledge" means that the vehicle manufacturer is in possession of the described information. Please rate on a scale of 1-5 (1 = little to no difficulty, 5 = extreme difficulty) the difficulty associated with collecting this information.

Description	**Corporate knowledge exists (yes/no)**	**Expected difficulty rating to collect this information (scale of 1 to 5)**	**Comments (optional)**
Vehicle material composition (i.e., a bill of materials) for each vehicle model, as potentially posted in the International Material Data System (IMDS)			
Locations of production of the materials listed in the bill of materials			
Methods of production used for the steel, aluminum and copper in the vehicle (e.g., for steel, Electric Arc Furnace), or the carbon footprint of these materials			
Recycled content of the steel, aluminum and copper in the vehicle			
Electricity/Energy used for the production of intermediate materials and parts (e.g., rolled steel)			
Average amount of electricity/energy used during battery cell production for battery electric and plug-in hybrid electric vehicles			
Region of production and/or the sources of the electricity used during battery cell production (for battery electric vehicles and plug-in hybrid electric vehicles)			
The total mass of the battery pack, the gross battery capacity in kWh, and the battery chemistry (for battery electric vehicles and plug-in hybrid vehicles)			
Average amount of electricity/energy used during vehicle assembly			
Region of production and/or the sources of the electricity used during vehicle assembly			
Other (please specify)			

8. Does your company take into account life cycle elements in the design of its vehicles, following the ISO 14006 standard (eco-design)?

   Yes ☐ No ☐ Do not know ☐

9. Does your company request and collect environmental data from its suppliers?

   Yes ☐ No ☐

   If yes, what type(s) of data does your company request and collect?

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10. Does your company incorporate low-carbon materials in its vehicles?

    Yes ☐ No ☐

    If yes, please provide examples and identify the evidence (e.g., certifications) your company accepts to substantiate these environmental claims.

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11. Does your company require certification of the use of renewable, clean, or low-carbon electricity in the production of vehicle batteries (for battery electric and plug-in hybrid vehicles only)?

    Yes ☐ No ☐ Yes, for some batteries ☐

    If yes (or yes, for some batteries), does your company have evidence (e.g., certifications) to substantiate these environmental claims?

    Yes ☐ No ☐ Yes, for some batteries ☐

    If yes (or yes, for some batteries), what certifications or other evidence does your company accept to substantiate these environmental claims?

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12. Does your company have an established recycling partner/contract for its electric vehicle batteries?

    Yes ☐ No ☐ Yes, for some batteries ☐

    If yes (or yes, for some batteries), what type or recycling technology does the partner/contractor use (e.g., pyrometallurgical or hydrometallurgical)?

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13. Does your company have any further comments or wish to elaborate on its previous responses?

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ANNEX 1 – MAIN ELEMENTS OF LCA METHODOLOGY

a) System boundary
    - e.g., cradle-to-grave, including raw material acquisition, material processing, vehicle component production, assembly, shipment to client, use and maintenance, end of life
b) Functional unit and/or reference flow
    - e.g., vehicle-km
c) Assumed vehicle and/or powertrain lifespan
    - e.g., cradle-to-grave, including raw material acquisition, material processing, vehicle component production, assembly, shipment to client, use and maintenance, end of life
d) Functional unit and/or reference flow
    - e.g., vehicle-km
e) Assumed vehicle and/or powertrain lifespan
    - e.g., 200,000 km
f) Impact allocation method for end-of-life stage
    - e.g., recycled content/cut-off method, Europe's Product Environmental Footprint (PEF) Circular Footprint Formula
g) Cut-off rules used (specification of the amount of material or energy flow or the level of environmental significance associated with unit processes or product system to be excluded from a study)
    - e.g., no material and energy inputs less than 1% of the total consumed are included
h) Data quality rules adopted
    - e.g., temporal, geographical, technological and completeness
i) Types of foreground data (also called activity data) used
    - e.g., mass of material inputs / bill of materials, energy use, material shipping distances and mode of transport
j) Types of background data used
    - e.g., LCA database (specify which one was selected, such as GaBi or ecoinvent), electricity grid mix, life cycle impact assessment method, and Environmental Product Declarations (EPDs) associated with product inputs such as tires
k) Life cycle impact assessment method(s) used
    - e.g., ReCiPe, TRACI
l) Impact categories addressed
    - e.g., global warming potential, particulate matter