



# The Carbon Footprint Calculator for Professional Services: User Guide

PUBLIC SERVICES AND  
PROCUREMENT CANADA

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## Executive Summary

This document is a user guide for the Professional Services Carbon Footprint Calculator which was developed for Public Services and Procurement Canada's (PSPC) Low-Carbon Procurement Project (LCPP) in partnership with CBCL Inc. (CBCL). The LCPP aims at measuring and reducing the carbon footprint of the Government of Canada's (GoC) procurement activities, and was funded by Treasury Board Secretariat's Greening Government Fund. This project is aligned with the Greening Government Strategy that was developed to meet the GoC's target to achieve net zero emissions by 2050.

A professional service is a task or activity that relies on specialized skills to complete, and does not provide a material good as a deliverable. The work required to provide a professional service often takes place in an office environment or field site, and can include activities producing greenhouse gas (GHG) emissions such as fuel combustion for heating, electricity and transportation.

The Professional Services Carbon Footprint Calculator is designed to provide an estimate of the Scope 1, 2 and 3 GHG emissions associated with a professional service contract. The methodology for quantifying the carbon footprint broadly aligns with the Greenhouse Gas (GHG) Protocol Corporate Standard. The calculator, which focuses on GHG emission estimates at the contract-level, includes a process to allocate corporate-level GHG emissions at the contract-level, in addition to the collection of data for specific contracts.

The excel-based calculator produces an emissions estimate based on simplified user inputs and industry standard averages. Within each data input tab, emissions calculations are broken down into easy to complete steps that require minimal user input. Emission factors are used to automatically estimate total emissions. Once the user inputs the required data, a "Totals" tab provides the user with one overall GHG emissions estimate, broken down by scope and category. This calculator does not replace a comprehensive, detailed GHG emissions quantification, and not all sources of GHG emissions from a professional services contract are necessarily captured by the calculator.

This user guide includes details on the components included in the calculator, the data inputs associated with each tab, and step-by-step instructions on entering the data into the calculator to obtain an emissions estimate.

This document incorporates significant elements of reports written and submitted by CBCL to PSPC in fulfilment of a contract for the LCPP.

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## List of Acronyms

| Acronym           | Description   |
|-------------------|---|
| CBCL              | CBCL Inc.; consultant retained by Public Services and Procurement Canada (PSPC) to develop a science-based methodology to measure greenhouse gas (GHG) emissions for professional services procured                 |
| CO <sub>2</sub> e | carbon dioxide equivalent; emissions of various greenhouse gases (GHGs) reported as equivalent emissions of carbon dioxide only   |
| FU                | functional unit; quantified description of a product system, used as the reference point for product data in a life cycle assessment (LCA)  |
| GHG               | greenhouse gas  |
| GoC               | Government of Canada  |
| ISO               | International Organization for Standardization; organization that publishes standards for life cycle analysis   |
| LCA               | life cycle assessment; methodology for assessing one or more environmental impacts of a product, service, or process from all activities within the defined system boundary as described in ISO 14040 and ISO 14044 |
| LCPP              | Low Carbon Procurement Project; project to reduce emissions from procurement for the Government of Canada (GoC)   |
| PSPC              | Public Services and Procurement Canada; Government of Canada (GoC) department responsible for internal servicing and administration for the government  |

## Glossary of Terms

| TERM                                       | DEFINITION  |
|--|---|
| <b><i>GENERAL GREENHOUSE GAS TERMS</i></b> |   |
| <b>GHG Protocol</b>                        | Establishes comprehensive global standardized frameworks to measure and manage greenhouse gas (GHG) emissions from private and public sector operations, value chains, and mitigation actions (World Resources Institute, 2004) |
| <b>greenhouse gas (GHG) emissions</b>      | Atmospheric gases responsible for causing global warming and climate change. Major GHGs are carbon dioxide (CO <sub>2</sub> ), methane (CH <sub>4</sub> ), and nitrous oxide (N <sub>2</sub> O) (EPA, 2022)                     |
| <b>Scope 1 emissions</b>                   | Direct emissions for an organization from owned or controlled sources (World Resources Institute, 2004)   |
| <b>Scope 2 emissions</b>                   | Indirect emissions for an organization from the generation of purchased energy (World Resources Institute, 2004)  |
| <b>Scope 3 emissions</b>                   | All indirect emissions (not included in Scope 2) that occur in the value chain of a reporting company, including both upstream and downstream emissions (World Resources Institute, 2004)                                       |

**LIFE CYCLE ASSESSMENT TERMS**

|                                    |   |
|------------------------------------|---|
| <b>life cycle assessment (LCA)</b> | Compilation and evaluation of the inputs, outputs, and potential environmental impacts of a product system throughout its life cycle (ISO, 2006a)   |
| <b>carbon footprint</b>            | Total GHGs emitted by an individual, event, organization, service, place, or product expressed as carbon dioxide equivalent (CO <sub>2</sub> e) over the life cycle (Carbon Trust, 2022)            |
| <b>product system</b>              | Collection of unit processes with elementary and product flows, performing one or more defined functions, and which models the life cycle of a product (ISO, 2006a)                                 |
| <b>functional unit</b>             | Quantified performance of a product system for use as a reference unit (ISO, 2006a)   |
| <b>system boundary</b>             | Defines the unit processes to be included in the system (ISO, 2006a)  |
| <b>life cycle</b>                  | Interlinked and consecutive stages of a product system, from acquisition of raw materials, design, production, transportation/delivery, use, end-of-life treatment, and final disposal (ISO, 2006a) |
| <b>unit process</b>                | Smallest element considered in the life cycle inventory analysis for which input and output data are quantified (ISO, 2006a)  |
| <b>end of life</b>                 | Impacts include demolition and processing of waste or recyclable materials (ISO, 2006a)   |

**PROCUREMENT TERMS**

|                 |   |
|-----------------|---|
| <b>supplier</b> | An entity that supplies goods and services to another organization (Accounting Tools, 2022) |
|-----------------|---|

## I. Introduction

Public Services and Procurement Canada (PSPC), in an effort to better understand the carbon footprint associated with the procurement of professional services, commissioned the development of a carbon footprint methodology and calculator to estimate greenhouse gas (GHG) emissions associated with the execution of professional services contracts. Although this calculator was developed to assist professional services suppliers who are performing work with or entering into contract with PSPC, it can be used by any professional services supplier, or any purchaser of professional services.

## II. Scope of Analysis

The scope of the carbon footprint methodology used in the design of this calculator encompasses those GHG emissions generated in the provision of professional services.

A professional service is a task or activity that relies on specialized skills to complete, and does not provide a material good as a deliverable. Therefore, a conventional product carbon footprint that encompasses all life-cycle stages beginning at raw material extraction until product end-of-life is not appropriate. Professional services often take place in an office environment or field site, and can include GHG-producing activities such as fuel combustion for heating, electricity and transportation.

The methodology used for this carbon footprint calculator is based on the [Greenhouse Gas Protocol Corporate Standard](#). However, unlike the corporate GHG inventory defined under the GHG Protocol, the professional services carbon footprint methodology was developed to provide a GHG emission estimate at the contract-level, not at the corporate-level.

For simplicity, the Professional Services Carbon Footprint Calculator (the calculator) includes sources of emissions that are relevant for the professional services procurement category.

### 1. Structure of Calculator

The Professional Services Carbon Footprint Calculator was built in Microsoft Excel and matches data inputs provided by professional service suppliers with each appropriate emissions factor to calculate the GHG emissions of the professional services contract.

The calculator includes five tabs:

1. Instructions to Users
  - Provides the user with information on how to input data, the sources of the background data used in the calculator, and the system boundary used to estimate the carbon footprint.
  - Provides a data and progress tracker to help the user keep track of which sections have been completed.
2. Company-Generic Data
  - Allows the user to input data that are associated with the company as a whole.
3. Contract-Specific Data
  - Allows the user to input data that are associated specifically with the professional services contract.
4. Totals
  - Includes cells for the user to input data on the number of full-time equivalent employees of the organization and the person-hours required to complete the contract.



- Provides the total emissions of the company and contract, broken down by GHG emission scope and category.
5. Office Energy Estimation Tool
- Provided for those Canadian users that are unable to collect and supply information on energy use. This tool can help the user provide approximate electricity and fuel consumption amounts. The estimates generated assume Canadian climates.
  - To use this tool, the user inputs the total office area occupied by the reporting party and selects the appropriate energy source for space heating and domestic water heating. The estimated totals generated by the tool can then be entered into the appropriate categories in the company generic data tab.

## 2. System Boundary

The system boundary of the calculator is based on the methodology described in the [Greenhouse Gas Protocol Corporate Standard](#), but includes only those emission scopes and Scope 3 emission categories that are most relevant for professional services (see GHG Emission Scopes section). However, unlike the corporate GHG inventory defined under the GHG Protocol, the Professional Services Carbon Footprint Calculator provides a GHG emission estimate at the contract-level, not at the corporate-level.

Of prime importance to the production of a representative carbon footprint estimate is the definition of the corporate boundary, which is defined to include all offices that are directly or indirectly involved in the execution of the PSPC contract. For example, if the reporting company has international offices that will commit personnel hours or resources to execute the specific PSPC contract, including direct personnel or support staff such as accounting, legal and administrative personnel, their emissions should be taken into account. Offices not expected to contribute to the execution of the contract can be excluded.

### GHG Emission Scopes

The GHG emissions taken into account for the contract-based carbon footprint are classified into 3 scopes, in keeping with the [Greenhouse Gas Protocol Corporate Standard](#).

Scope 1 emissions are direct emissions that represent sources that are owned or controlled by the reporting organization.

Scope 2 emissions are indirect emissions from the generation of purchased electricity, steam, and heating/cooling.

Scope 3 emissions are the remaining indirect emissions that are classified into 15 categories. These emissions result from the activities of the reporting organization, but primarily occur from sources not owned or controlled by it, such as extraction and production of purchased materials, transportation of purchased fuels, and use of sold products and services.

The carbon footprint calculator focuses on relevant sources of emissions with accessible data.

Table 1 lists the sources of GHG emissions that are taken into account in the Professional Services Carbon Footprint Calculator. Blue cells represent GHG emission scopes and categories included in the company generic or contract specific data worksheets. Grey cells represent the GHG emission scopes and categories excluded from the company-generic or contract-specific data worksheets.

**Table 1:** Scope of Greenhouse Gas Emissions Taken into Account in the Professional Services Carbon Footprint Calculator

| Scope of Emissions   | Company-<br>Generic | Contract-<br>Specific |
|--|---------------------|-----------------------|
| Scope 1  |                     |                       |
| Scope 2  |                     |                       |
| Scope 3, Category 1 (Purchased Goods and Services)               |                     |                       |
| Scope 3, Category 2 (Capital Goods)                              |                     |                       |
| Scope 3, Category 3 (Fuel- and energy-related activities)        |                     |                       |
| Scope 3, Category 4 (Upstream Transportation and Distribution)   |                     |                       |
| Scope 3, Category 5 (Waste Generated in Operations)              |                     |                       |
| Scope 3, Category 6 (Business Travel)                            |                     |                       |
| Scope 3, Category 7 (Employee Commuting)                         |                     |                       |
| Scope 3, Category 8 (Upstream Leased Assets)                     |                     |                       |
| Scope 3, Category 9 (Downstream transportation and distribution) |                     |                       |
| Scope 3, Category 10 (Processing of sold products)               |                     |                       |
| Scope 3, Category 11 (Use of sold products)                      |                     |                       |
| Scope 3, Category 12 (End of life treatment of sold products)    |                     |                       |
| Scope 3, Category 13 (Downstream leased assets)                  |                     |                       |
| Scope 3, Category 14 (Franchises)                                |                     |                       |
| Scope 3, Category 15 (Investments)                               |                     |                       |

### 3. Functional Unit

Valid carbon footprint comparisons require the use of identical functional units. A functional unit is a quantified description of the performance requirements that the service fulfils. For this calculator, the functional unit describes the quantity of professional services required to fulfill the contract, defined as contract deliverables. It is important to note that different contracts have different deliverables and require different quantities of professional services. It is therefore not appropriate to compare the carbon footprints of different contracts.

Professional services are typically contracted on a per-hour basis. As such, the most suitable performance metric for emissions from professional services is total emissions (kg CO<sub>2</sub>e) per person-hour. However, this performance metric is not equal to the functional unit.

### 4. Data Inputs

Users are required to complete the cells in the tabs labeled 'Company-Generic Data', 'Contract-Specific Data', and 'Totals'. The company-generic data inputs are used to estimate emissions associated with offices, employee commuting, and non-project-specific travel. The project-specific data inputs are used to estimate emissions associated with project-specific travel, the operation of specialized equipment used in the execution of the contract, as well as the purchase of capital equipment used in the execution of the contract. The data inputs requested in the 'Totals' tab are used to convert the company-generic GHG emissions into contract-specific GHG emissions.

Please note that the data inputs should represent the most recent 12-month period that records are available.

There are three types of cells containing data and results, and they are categorized by colour:

- Gold cells are for numeric inputs from the user;
- Peach cells are for options (e.g., an emissions source) the user would select from a drop-down menu; and
- Light grey cells provide the calculated results

|  | TOTAL ANNUAL FUEL CONSUMPTION FOR FLEET<br>VEHICLES USED FOR COMMUTING | QUANTITY | UNIT |
|--|--|----------|------|
| Collect total fuel consumed by company-owned vehicles or mobile equipment used for commuting. Fuel receipts or payment summaries can often be obtained from fleet managers or accounting team. Fill one row per fuel type. | Gasoline   | 1,000    | L    |
|  | Diesel   |          | L    |
|  | Light Fuel Oil   |          | L    |
|  | Heavy Fuel Oil   |          | L    |
|  | Kerosene   |          | L    |
|  | Aviation Gasoline  |          | L    |
|  | Aviation Turbo Fuel  |          | L    |
|  | Ethanol  |          | L    |

**Figure 1:** Example of user inputs required in the calculator. Dropdown menus are associated with peach cells, and input values are associated with gold cells.

The following data inputs would be entered into the Company-Generic Data tab, where relevant:

- The calendar year for which the values entered are representative
- Estimation of Scope 1 emissions
  - Total annual fuel consumption in owned or controlled boilers or furnaces
  - Total annual fuel consumption for fleet vehicles used for commuting
  - Fugitive emissions from owned refrigeration equipment
- Estimation of Scope 2 emissions
  - Total annual electricity consumption by province (Canada)
  - Total annual electricity consumption by grid region (international)
  - Purchased thermal energy
  - Total annual electricity consumption for fleet vehicles used for commuting
- Estimation of Scope 3, category 5 emissions
  - Waste generated in office environment: Total waste tonnage of mixed paper
  - Waste generated in office environment: Total waste tonnage of mixed metals
  - Waste generated in office environment: Total waste tonnage of mixed plastic
  - Waste generated in office environment: Total waste tonnage of mixed organics
  - Waste generated in office environment: Total waste tonnage of mixed solid wastes
- Estimation of Scope 3, category 6 emissions
  - Total fuel consumption for non-commuter business travel
  - Total electricity consumption for non-commuter business travel
- Estimation of Scope 3, category 7 emissions
  - Total distance travelled by each employee to travel to and from work
  - Vehicles used for the employee commutes
- Estimation of Scope 3, category 8 emissions
  - Total annual fuel consumption in boilers or furnaces or furnaces at leased accommodations
  - Total annual electricity consumption by province (Canada) in leased accommodations
  - Total annual electricity consumption by grid region (international) in leased accommodations

The following data inputs would be entered into the Contract-Specific Data tab, where relevant:

- Estimation of Scope 1 emissions
  - Total fuel consumption for project-specific travel in company-owned vehicles

- Total fuel consumption for company-owned specialized equipment
- Estimation of Scope 2 emissions
  - Total electricity consumption for project-specific travel in company-owned electric vehicles
- Estimation of Scope 3, category 2 emissions
  - Material procured and consumed solely for the execution of the contract
- Estimation of Scope 3, category 6 emissions
  - Total fuel consumption for project-specific travel by carriers
  - Total electricity consumption for project-specific travel by carriers

The following data inputs would be entered into the Totals tab, where relevant:

- Total Full-Time Equivalent Staff (Including all office staff and staff working from home)
- Total Person-Hours Expected to Complete the Contract

### III. Company-Generic Data Tab

This section describes the data that should be collected for input into the carbon footprint calculator to estimate the generic emissions associated with the operations of the reporting organization. It provides an overview of where the data can likely be obtained, and the units of measurement for reporting.

#### 1. Scope 1 Emissions

Scope 1 emissions require the following inputs:

- Total annual fuel consumption in owned or controlled boilers or furnaces.
- Total annual fuel consumption from fleet vehicles used for commuting.
- Total annual fuel consumption in company-owned vehicles.
- Fugitive emissions from owned refrigeration equipment.

#### **Step 1: Select Fuel/Refrigerants**

Under each section, the user must select the applicable fuel/refrigerant types from the dropdown menu provided, which lists all the applicable fuel or refrigerant types for that section. Note that the unit of measurement will automatically update once a fuel is selected.

#### **Step 2: Input Quantities**

Once the type of fuel is selected from the dropdown menu, the user will input the relevant quantity of fuel or refrigerant (as obtained during the data collection phase) into the adjacent “Quantity” box in gold.

#### **Step 3: Read Results**

Refer to the right side of the sheet where grey boxes show the emissions factor used to complete the calculation (automatically populated once a fuel or refrigerant has been selected), and the total emissions in kg CO<sub>2</sub>e associated with the consumption of each fuel or refrigerant.

Once each section is finished, the user should navigate to the far-right side of the sheet where there is a column labelled “Section Complete?”. Under this column, the user can click on the gold button to reveal a dropdown menu. Using the menu, they can select that this associated section is complete.

### Total Annual Fuel Consumption in Owned or Controlled Boilers/Furnaces

Under this category, the user collects data on the total volume of fuel used in their company owned combustion equipment from the most recent 12-month period that records are available.

Fuel volumes should be tabulated per type of fuel used, as applicable. The fuel types included in the calculator (via the dropdown menus) are listed in **Table 2**, along with the associated units of measurement.

**Table 2:** List of fuel types and associated units to calculate Scope 1 emissions – total annual fuel consumption on owned or controlled boilers/furnaces

| Fuel Type      | Units                          |
|----------------|--------------------------------|
| Light fuel oil | Litres (L)                     |
| Heavy fuel oil | Litres (L)                     |
| Kerosene       | Litres (L)                     |
| Natural gas    | Cubic metres (m <sup>3</sup> ) |
| Propane        | Litres (L)                     |
| Butane         | Litres (L)                     |
| Ethane         | Litres (L)                     |

For each type of fuel used by the company, volumes can typically be obtained directly from the fuel vendor, such as a gas utility or other fuel supplier, or on receipts from the vendor. The volume input into the calculator should include the total amount used over the most recent 12-month period that records are available.

If one or more fuel types is not used in operations, no data collection or entry into the calculator is required as these items will simply not be selected from the available dropdown menus in the calculator.

Please note that Scope 1 emissions do not include fuel consumed at leased accommodations (e.g., office spaces or other building leased by the corporation). Since leased accommodations are not owned by the company, these are considered indirect GHG emissions to be included under Scope 3, Category 8 (upstream leased assets).

If the company does not own any combustion equipment, no data collection is required under this step.

### Total Annual Fuel Consumption in Fleet Vehicles used for Commuting

Under this category, the user collects the total amount of fuel consumed by company-owned vehicles that are used by employees for commuting to and from work from the most recent 12-month period that records are available.

Fuel volumes should be tabulated per type of fuel used, as applicable. The fuel types included in the calculator (via the dropdown menus) are listed in **Table 3**, along with the associated units of measurement.

**Table 3:** List of fuel types and associated units to calculate Scope 1 emissions – total annual fuel consumption in fleet vehicles used for commuting

| Fuel Type   | Units                          |
|-------------|--------------------------------|
| Natural gas | Cubic metres (m <sup>3</sup> ) |

|                     |            |
|---------------------|------------|
| Propane             | Litres (L) |
| Gasoline            | Litres (L) |
| Diesel              | Litres (L) |
| Light fuel oil      | Litres (L) |
| Heavy fuel oil      | Litres (L) |
| Kerosene            | Litres (L) |
| Aviation gasoline   | Litres (L) |
| Aviation turbo fuel | Litres (L) |
| Ethanol             | Litres (L) |
| Biodiesel           | Litres (L) |

The applicable fuel types and amount of fuel consumed can typically be obtained from fleet managers or from the company's accounting team (e.g., from payment reports).

Please note that this category is limited to vehicles owned by the company and does not include personal vehicles owned by company employees that are used for commuting.

Employee commuting via personal vehicle is included under Scope 3, Category 7 (employee commuting).

If the company does not own any vehicles, no data collection is required under this category.

#### Fugitive Emissions from Owned Refrigeration Equipment

Under this category, emissions result from leaks in refrigeration equipment owned by the company, and may include the refrigerants listed in **Table 4**.

**Table 4:** List of refrigerant types to calculate Scope 1 emissions – fugitive emissions from owned refrigeration equipment

| Refrigerant Type  |  |
|---|--|
| Carbon dioxide (CO <sub>2</sub> )                                 | HFC-227ea (R-227ea) (C <sub>3</sub> HF <sub>7</sub> )                  |
| Methane (CH <sub>4</sub> )  | HFC-236cb (R-236cb) (C <sub>3</sub> H <sub>2</sub> F <sub>6</sub> )    |
| Nitrous oxide (N <sub>2</sub> O)                                  | HFC-236ea (R-236ea) (C <sub>3</sub> H <sub>2</sub> F <sub>6</sub> )    |
| Nitrogen trifluoride (NF <sub>3</sub> )                           | HFC-236fa (R-236fa) (C <sub>3</sub> H <sub>2</sub> F <sub>6</sub> )    |
| Sulfur hexafluoride (SF <sub>6</sub> )                            | HFC-245ca (R-245ca) (C <sub>3</sub> H <sub>3</sub> F <sub>5</sub> )    |
| Hydrofluorocarbons (HFCs)   | HFC-245fa (R-245fa) (C <sub>3</sub> H <sub>3</sub> F <sub>5</sub> )    |
| HFC-23 (R-23) (CHF <sub>3</sub> )                                 | HFC-365mfc (C <sub>4</sub> H <sub>5</sub> F <sub>5</sub> )             |
| HFC-32 (R-32) (CH <sub>2</sub> F <sub>2</sub> )                   | HFC-43-10mee (R-4310) (C <sub>5</sub> H <sub>2</sub> F <sub>10</sub> ) |
| HFC-41 (R-41) (CH <sub>3</sub> F)                                 | PFC-14 (Perfluoromethane) (CF <sub>4</sub> )                           |
| HFC-125 (R-125) (C <sub>2</sub> HF <sub>5</sub> )                 | PFC-116 (Perfluoroethane) (C <sub>2</sub> F <sub>6</sub> )             |
| HFC-134 (R-134) (C <sub>2</sub> H <sub>2</sub> F <sub>4</sub> )   | PFC-218 (Perfluoropropane) (C <sub>3</sub> F <sub>8</sub> )            |
| HFC-134a (R-134a) (C <sub>2</sub> H <sub>2</sub> F <sub>4</sub> ) | PFC-318 (Perfluorocyclobutane) (c-C <sub>4</sub> F <sub>8</sub> )      |
| HFC-143 (R-143) (C <sub>2</sub> H <sub>3</sub> F <sub>3</sub> )   | PFC-3-1-10 (Perfluorobutane) (C <sub>4</sub> F <sub>10</sub> )         |
| HFC-143a (R-143a) (C <sub>2</sub> H <sub>3</sub> F <sub>3</sub> ) | PFC-4-1-12 (Perfluoropentane) (C <sub>5</sub> F <sub>12</sub> )        |
| HFC-152 (R-152) (C <sub>2</sub> H <sub>4</sub> F <sub>2</sub> )   | PFC-5-1-14 (Perfluorohexane) (C <sub>6</sub> F <sub>14</sub> )         |
| HFC-152a (R-152a) (C <sub>2</sub> H <sub>4</sub> F <sub>2</sub> ) | PFC-9-1-18 (Perfluorodecalin) (C <sub>10</sub> F <sub>18</sub> )       |
| HFC-161 (R-161) (C <sub>2</sub> H <sub>5</sub> F)                 |  |

Data on each applicable refrigerant should be collected in units of kilograms (kg) for input into the calculator.

Fugitive emission volumes can be obtained from building maintenance employees or from HVAC (Heating, Ventilation, Air Conditioning) contractors. The volumes reported should be those specifically from leaks (i.e., the amount that was replaced to refill the system). This category does not include refrigerant volumes from controlled replacement or refrigerant change.

If the company does not own refrigeration equipment, no data collection is required under this category.

## 2. Scope 2 Emissions

Scope 2 emissions require the following inputs:

- Indirect emissions from purchased electricity (Canada)
- Indirect emissions from purchased electricity (international)
- Indirect emissions from purchased thermal energy
- Total electrical consumption in company-owned electric vehicles

### Step 1: Indirect emissions from purchased electricity (Canada)

Under this section of the worksheet, the user must select the applicable office locations from the dropdown menu in the peach cells, which lists all Canadian provinces and territories. Next, the user should input the associated quantity of electricity consumed in that province in kWh into the adjacent “Quantity” box in gold. Note that one line item should be completed for each applicable province (Figure 2).

| <b>INDIRECT EMISSIONS FROM PURCHASED ELECTRICITY (CANADA)</b> |                 |             |
|---|-----------------|-------------|
| <b>TOTAL ANNUAL ELECTRICITY CONSUMPTION BY PROVINCE</b>       | <b>QUANTITY</b> | <b>UNIT</b> |
| AB  | 1,985,000       | kWh         |
| NB  | 120,000         | kWh         |
| NB  |                 | kWh         |
| NS  |                 | kWh         |
| PE  |                 | kWh         |
| NL  |                 | kWh         |
| QC  |                 | kWh         |
| ON  |                 | kWh         |
| MB  |                 | kWh         |
| SK  |                 | kWh         |
|   |                 | kWh         |
|   |                 | kWh         |
|   |                 | kWh         |

**Figure 2:** Example data input for electricity consumption from buildings located in Canada

### Step 2: Indirect emissions from purchased electricity (International)

Similar to Step 1, under this section of the worksheet, the user must select the applicable office locations from the dropdown menu in the peach cells, which lists several international locations. Next, the user should input the associated quantity of electricity consumed in that location in kWh into the adjacent “Quantity” box in gold. Note that one line item should be completed for each applicable country.

**Step 2a: Enter office locations and emissions factors for locations not included in dropdown list.**

If the user’s company owns a building that is outside one of the countries listed in the international dropdown menu or if the source of electricity used by the company is off-grid (e.g., rooftop solar), the user should use the gold input cell under the “Total Annual Electricity Consumption by Grid Region” heading to enter the information for other countries.

For each location entered manually, the user must also assign an associated emission factor in the gold input cells under the adjacent “Emissions Factor (kg CO<sub>2</sub>e/unit)” column (**Figure 3**). Refer to the FAQ section for additional information on obtaining emissions factors.

|        |         |     |                  | EMISSIONS FACTOR<br>(kg CO <sub>2</sub> e/unit) |
|--------|---------|-----|------------------|---|
| Brazil | 250,000 | kWh | Manually entered | 0.98  |
|        |         | kWh | Manually entered |   |
|        |         | kWh | Manually entered |   |

**Figure 3:** Example of manual emissions factor input

**Step 3: Enter purchased thermal energy information**

Under this section of the worksheet, the user selects the type of fuel associated with the district energy system from the dropdown menu (peach cells). Similar to other categories, the amount of purchased thermal energy in GJ should be input into the adjacent gold “Quantity” cell.

One line item should be completed for each applicable type of fuel.

**Step 4: Enter electric vehicle energy consumption information**

Under this section of the worksheet, the user selects the province(s) in which electric vehicles are owned and used by the company from the peach dropdown menu. Similar to other categories, the amount of electricity used in the electric vehicles per province should be input into the adjacent gold “Quantity” cell.

One line item should be completed for each applicable province.

**Step 5: Read Results**

Following calculations under each of the Scope 2 sections, refer to the right side of the sheet where grey boxes show the emissions factor used to complete the calculation (automatically populated where applicable), and the total associated emissions in kg CO<sub>2</sub>e.

Once each section is finished, the user should navigate to the far-right side of the sheet where there is a column labelled “Section Complete?”. Under this column, the user can click on the gold button to reveal a dropdown menu. Using the menu, they can select that this associated section is complete.



This should be updated after completion of each sector in order to reduce duplication of work, particularly if more than one person in the organization is working to complete the GHG inventory.

#### Indirect Emissions from Purchased Electricity (Canada)

Under this category, the user collects data on the total annual electricity consumption from each of the properties the organization owns in each Canadian province, as applicable. Electricity consumption data in kilowatt-hours (kWh) should be tabulated per province for input into the calculator.

Total electricity consumption for each building can be obtained from the utility provider (or from receipts provided by the utility providers).

If the company does not own any buildings in Canada or does not purchase electricity from a Canadian utility, no data collection is required under this category.

#### Indirect Emissions from Purchased Electricity (International)

Under this category, the user collects data on the total annual electricity consumption from each of the properties the organization owns in international locations, as applicable. Total electricity consumption for each building can be obtained from the utility provider (or from receipts provided by utility providers).

Electricity consumption data in kWh and should be tabulated per region for input into the calculator. There are 229 International locations, countries and regions included in the calculator (i.e., those with embedded emissions factors).

If the organization owns international buildings in a country not listed above, it will be required to obtain an emissions factor relevant for the region in which they operate and purchase electricity. Emissions factors can be obtained directly from the utility, or via research into the type of resources used to produce electricity in the region (e.g., diesel fuel, natural gas) and the emissions factors associated with that resource. Emissions factors should be obtained in units of kg/CO<sub>2</sub>e.

If the company does not own any buildings in locations outside of Canada, or does not purchase electricity in international locations, no data collection is required under this category.

#### Indirect Emissions from Purchased Thermal Energy

This category refers to the energy provided to a facility from a district energy heating plant.

Under this category, the user should determine two things:

1. The type of fuel used at the district heating plant.
2. The total purchased district energy consumption at their facility from the most recent 12-month period where data is available.

Data on total purchased district energy consumption should be available from the utility provider (or from receipts provided by utility providers), and reported in gigajoules (GJ).

If the company does not own any buildings that receive thermal energy from a district heating plant, no data collection is required under this category.

### Total Electricity Consumption in Company-Owned Electric Vehicles Used for Commuting

In this category, the user collects data on the total electricity consumed by company-owned electric vehicles or mobile equipment used for commuting. The user collects the total amount of electricity consumed by company-owned vehicles that are used by employees for commuting to and from work from the most recent 12-month period that records are available.

Like previous electricity consumption categories, this category is location dependent.

### 3. Scope 3 Emissions

For further information on Scope 3 emission accounting, refer to The Greenhouse Gas Protocol: Corporate Value Chain (Scope 3) Accounting and Reporting Standard.

#### Category 5: Waste Generated in Office Environment

Data associated with Scope 3, Category 5 (Waste Generated in Operations) emissions can only be input into the calculator by the user if a waste audit has been completed for the company.

If the user's company has not completed a waste audit, entering the full-time equivalent number of employees in the Totals tab will auto-populate the Scope 3, Category 5 emissions section with national averages for waste generated in professional service operations.

If a waste audit has been completed, the user should refer to the company's waste audit to obtain data related to waste generated in their operations. Volumes of waste generated by the corporation should be obtained for the following waste categories:

- Mixed papers
- Mixed metals
- Mixed plastics
- Mixed organics
- All other mixed solid wastes

For each category, the following treatment methods are available, as applicable:

- Landfill
- Recycling
- Compost
- Incineration

Under each waste category and treatment method, the total volume of waste should be obtained in units of metric tons for direct input into the calculator.

Following collection of the data related to Scope 3, Category 5 (Waste Generated in Operations), navigate to the "Scope 3, Category 5" section in the calculator where the data will be input. Following completion of this section, the user should mark the calculation as "complete" in the associated "Section Complete?" line on the right side of the sheet.

#### Category 6: Total Fuel and Electricity Consumption for Non-Commuter Business Travel

Scope 3, Category 6 (Business Travel) includes emissions associated with the corporation's annual business travel in vehicles or mobile equipment that is not owned by the company (e.g., rental vehicles and third-party haulers). In the calculator, the category includes two different reporting components, as follows:

Total fuel consumption for non-commuter business travel:

- This includes fuel consumed by third party mobile equipment used for non-commuter business travel such as travel between offices and travel to conferences.
- For this component, the user should obtain the amount of fuel consumed annually by non-company owned mobile equipment (i.e., mobile equipment that was rented or leased throughout the most recent reporting year).

Total electricity consumption for non-commuter business travel:

- Electricity consumed by third-party electric mobile equipment used for non-commuter business travel such as travel between offices and travel to conferences and for business development.
- For this component, the user should obtain the amount of electricity consumed annually by non-company owned mobile equipment (i.e., mobile equipment that was rented or leased throughout the most recent reporting year).

Note that the project-specific travels should not be considered in this section as they will be requested in the “Contract-Specific Data” tab.

For each of the two components, the total fuel or electricity requirements can be obtained directly from the rental agency. In some cases, the total amount of fuel or electricity may be directly reported on receipts (or on expense reports from employees). If the amount of fuel/electricity is not available, the rental/leasing agency should be able to provide records of the vehicle type and the distance travelled. The user can then research the average fuel economy of the mobile equipment type, and using the kilometres travelled calculate the estimated total amount of fuel used by the vehicle. The equation to calculate this value is as follows:

**Total fuel consumed = Distance Travelled (km) x Fuel Economy (litres/km)**

**Total electricity consumed = Distance Travelled (km) x Fuel Economy (kWh/km)**

To find the appropriate fuel economy values for mobile equipment, the user can refer to the [Government of Canada’s 2023 Fuel Consumption Guide](#). Note that the guide provides the fuel economy values in Litres/100km, or kWh/100km. These factors should be converted to Litres or kWh per single km (i.e., divide by 100) to calculate total fuel consumption to be included in the calculator.

Fuel consumption totals should be collected per type of fuel used (for combustion mobile equipment) or per province of travel (for electric mobile equipment). For example, for combustion mobile equipment, one fuel consumption total would be required for all vehicles that use gasoline. A separate total would be required for all mobile equipment that used diesel. Similarly, for electrical vehicles, electricity consumed by all vehicles driven in the province of Ontario should be recorded separately from all electricity consumed by mobile equipment in Quebec.

Following collection of the data related to Scope 3, Category 6 (Business Travel), navigate to the “Scope 3, Category 6” section in the calculator where the data will be entered.

Under each of the two components in this section, the user should input the type of fuel used for travel (or province of travel for electric mobile equipment) using the peach dropdown menus. For each line item, the associated amount of fuel or electricity used should be entered.

Fuel should be reported in litres, whereas electricity consumption should be reported in kWh.

Like sections tabs in the calculator, emissions totals are automatically populated in the grey cells on the right side of the sheet under the “Total Emissions (kg CO<sub>2</sub>e)” column.

Following completion of this section, the user should mark the calculation as “complete” in the associated “Section Complete?” column on the right side of the sheet.

#### Category 7: Employee Commuting

Scope 3, Category 7 (Employee Commuting) includes annual emissions associated with vehicles used for employees to commute to and from their place of work (i.e., vehicles owned by the employees, not the company). To complete this step of the calculator, data from an employee commuting survey will be required. An employee commuter survey is used to determine the total distances travelled to work by employees and by which vehicle types.

If the reporting company has not previously completed a corporate employee commuter survey, one should be completed prior to entering data into the calculator.

To report on employee commuting within the calculator, the user is required to input the total distance travelled by employees per mode of transportation, including individually owned vehicles and municipal transit. The calculator includes the categories associated with employee commuting:

**Table 5:** List of vehicle types to calculate Scope 3 – category 7 employee commuting emissions

| Vehicle Type                      | Units               |
|-----------------------------------|---------------------|
| Light-Duty Truck                  | kilometres          |
| Motorcycle                        | kilometres          |
| Intercity Rail                    | Passenger-kilometre |
| Commuter Rail                     | Passenger-kilometre |
| Transit Rail (i.e., subway, tram) | Passenger-kilometre |
| Bus                               | Passenger-kilometre |
| Taxi                              | Passenger-kilometre |

Following collection of the data related to Scope 3, Category 7 (Employee Commuting), navigate to the “Scope 3, Category 7” section in the calculator where the data will be entered. From the drop-down menu (peach cell), the user should select the types of vehicles used for employee commuting as identified through the employee commuter survey. Each vehicle type should be entered on an individual line. Adjacent to each vehicle type, the associated distance travelled should be entered in the gold “quantity” cell.

Like other sections in the Calculator, emissions totals are automatically populated in the grey cells on the right side of the sheet under the “Total Emissions (kg CO<sub>2</sub>e)” column.

Following completion of this section, the user should mark the calculation as “complete” in the associated “Section Complete?” column on the right side of the sheet.

#### Category 8: Total Annual Fuel and Electricity Consumption at Leased Accommodations

Under Scope 3, Category 8, emissions are associated with fuel and electricity consumption at leased accommodations. In the calculator, the category includes three different reporting components:

- Total annual fuel consumption in boilers or furnaces at leased accommodations
- Indirect emissions from purchased electricity in leased accommodations (Canada)
- Indirect emissions from purchased electricity in leased accommodations (international)

Data collection for this step follows the same steps as has previously been described in the sections related to buildings owned by the reporting company (Scope 1 and Scope 2 emissions).

When dealing with leased accommodations, the same general data collection steps can be applied, i.e., information regarding electricity consumption can be obtained from the company's utility provider for each location (or on recent utility receipts).

In scenarios where utility information is not readily available (e.g., utilities are included within the company's rental fees, and therefore not known) the user should request electricity consumption information from their landlord. If this information is only available for the building as a whole, the user should determine what percentage of the building they occupy and use this value as a direct correlation to the percentage of the utility bill that would be associated with their operations.

For example, if the reporting company occupies 20% of the building's total floor area, they would account for 20% of the building's total electricity consumption in their GHG emissions calculation.

The instructions presented in the Scope 1 and Scope 2 sections should be followed to enter data in the Scope 3, category 8 section.

## IV. Contract-Specific Data

This section describes the data that should be collected for input into the carbon footprint calculator to estimate the emissions associated with the operations of the contract. It provides an overview of where the data can likely be obtained, and the units of measurement for reporting.

### 1. Scope 1 Emissions

Scope 1 emissions require the following inputs:

- Total Annual Fuel Consumption for Contract-Specific Travel in Company-Owned Vehicles.
- Total Fuel Consumption for Specialized Equipment.

#### Total Annual Fuel Consumption for Contract-Specific Travel in Company-Owned Vehicles

Under this category, the user collects data on the total amount of fuel consumed for contract-specific travel in company-owned vehicles, including mobile equipment, for reasons other than daily commuting. This would include fuel consumed for activities such as travel to and from worksites, conferences or meetings with the client, or use of heavy equipment (owned by the company) on a worksite. Fuel volumes should be obtained for the fuels listed in Table 3, as applicable.

The amount of fuel consumed can typically be obtained from expense reports or estimated based on the number of kilometres travelled.

Please note that this category is limited to vehicles owned by the company, and that emissions from electric vehicles owned by the company are included in the Scope 2 emission category.

Emissions associated with combustion or electric vehicles not owned by the company are considered Scope 3, Category 6 emissions.

If the company does not own any vehicles or mobile equipment, no data collection is required under this category.

#### Total Fuel Consumption for Specialized Equipment

As in the previous category, the user collects data on the total amount of fuel consumed, but in this case it is for company-owned or rented vehicles or specialized mobile equipment used to execute the contract. For example, the user would collect data on the diesel consumed by a drilling rig or tractor used for clearing brush.

## 2. Scope 2 Emissions

Scope 2 emissions require the following inputs:

- Total electricity consumption for project specific travel in company owned electric vehicles

#### Total Electricity Consumption for Project Specific Travel in Company-Owned Vehicles

As in the previous category, the user collects data on the total amount of electricity consumed, but in this case it is for company-owned or rented electric vehicles or specialized mobile equipment used to execute the contract.

## 3. Scope 3 Emissions

Scope 3 emissions require the following inputs:

- Types and quantities of materials Procured and consumed for the execution of the contract, and the associated emissions factors
- Total fuel and electricity consumption for non-commuter business travel

#### Category 2: Materials Procured and Consumed Solely for the Execution of the Contract

Under this category, the user compiles emissions information associated with any capital goods that were purchased (or will be purchased) exclusively for the purposes of the contract to be executed.

Because materials used for professional services contracts can be highly variable, there is no pre-populated information in the calculator regarding use of capital goods. Therefore, all necessary information will need to be obtained by the user.

There are four components required for reporting on each type of capital good, including the type of good, the quantity used, the unit of measurement, and the associated emissions factor. Data collection requirements for each of these items is described as follows:

#### **Type of Good:**

The types of goods include computers and hardware, paper products, office furniture, sample bottles and other consumables which are purchased and consumed by the reporting organization.

#### **Quantity of Good:**

For each capital good to be included in the emissions estimate, the quantity of that good should be measured using appropriate units. Building on the example of sample bottles above, the number of bottles used for the contract should be recorded for input into the calculator.

**Emissions Factor:**

Manufactured goods have an emissions factor associated with their production, use, and disposal. These emissions factors are specific to the good being procured/used; therefore, for each capital good used in the project, the user should reach out to the manufacturer or supplier of the product to obtain the specific emissions factor. It is likely that in some cases manufacturers will not know the emissions factor associated with a particular good. In these cases, the user should conduct research to identify an applicable emissions factor that can be used as an approximation for the product being reported on. It is recommended to use the [“Supply Chain Greenhouse Gas Emissions Factors for US Industries and Commodities”](#) dataset to search for those emissions factors not available from manufactures/suppliers. An emissions factor should be obtained for each individual type of capital good being purchased/used specifically for the professional services contract.

**Units:**

The unit measurement of each capital good should be recorded for input into the calculator. Units would typically be included by volume or weight, or per individual item (e.g., per bottle or piece of paper). The unit should align with the previously discussed emission factor for the product. For example, if the emission factor provided by the manufacturer is per unit weight of the item (e.g., kg), the unit used for reporting in the calculator should match. Following collection of the data related to Scope 3, Category 2 (Capital Goods), navigate to the “Scope 3, Category 2” section in the calculator where the data will be input. In the gold input cells, the user should input the name of the purchased good, the quantity used, the associated unit of measurement, and the emissions factor obtained for each individual type of capital good (i.e., one line item per type of good). Note that it is imperative that the unit of measure used to quantify the good matches the unit of emissions associated with the product’s emissions factor. The emissions associated with each type of capital good are automatically calculated in the grey cells on the right side of the sheet

Following completion of this section, the user should mark the calculation as “complete” in the associated “Section Complete?” column on the right side of the sheet.

**Category 6: Total Fuel and Electricity Consumption for Non-Commuter Business Travel**

Scope 3, Category 6 (Business Travel) includes emissions associated with the corporation’s annual business travel in vehicles or mobile equipment that is not owned by the company (e.g., rental vehicles and third-party haulers). In the calculator, the section in the “Contract-Specific Data” tab includes two different reporting components, as follows:

**Total fuel consumption to execute the contract by third-party carriers:**

- Fuel consumed by third-party mobile equipment such as by transport haulers carrying materials between sites or transporting mobile equipment to job sites.
- For this component, the user should obtain the amount of fuel consumed by third-party mobile equipment for the specific project.

### **Total electricity consumption to execute the contract by third-party carriers**

- Electricity consumed by third-party electric mobile equipment such as transport haulers carrying materials between sites or transporting mobile equipment to job sites.
- For this component, the user should obtain the amount of electricity consumed by third-party mobile equipment for the specific project.

Instructions for this section are similar to those in the Scope 3 category 6 section of the company-generic data tab.

### Other Scope 3 Emissions Categories

Only categories 2, 5, 6, 7 & 8 of the Scope 3 emissions for professional services firms have been incorporated into the calculator at this time. Selection of these categories was based on previous research to identify which categories are the most significant for professional services firms. The user can refer to the [Scope 3 Evaluator Tool](#), developed by the GHG Protocol and Quantis, to estimate their Scope 3 emissions associated with other categories.

## V. Data Collection Progress Tracking

The carbon footprint calculator contains a progress tracker in the “Instructions to Users” tab where the user can indicate the status of tasks associated with completing the calculator. Each task associated with the calculator is listed under the progress tracker, along with an adjacent dropdown menu where the user can select where the task has been completed, has not been completed, is underway, or is not applicable. The user can also include notes associated with each task that better describe the stage of each task, for example who within the organization completed the task, where the data was obtained, or why the item may not be applicable.

Each data input tab also has a progress tracker to help the user keep track of which sections have been completed. The user can choose to select 'no emissions for the reporting year' and indicate that the section is complete if any category is not applicable to their operation.

## VI. Embedded Calculations

The calculator uses industry standard emissions factors to estimate the GHG emissions. Emissions factors are used in calculating total emissions by relating the source activity (e.g., combustion of fuel) to the quantity of GHG emitted into the atmosphere. These factors are usually expressed as the mass of pollutant divided by a unit mass, volume, distance, or duration of the activity emitting the pollutant (e.g., kilograms of carbon dioxide equivalent emitted per litre of fuel burned).

Emissions factors are embedded into the calculator and are typically not required to be input by the user. One exception exists associated with Scope 3 Category 2 emissions (Capital Goods), where the user will need to obtain emissions factors associated with the capital goods they use in their operations from the product’s supplier or manufacturer.

The emissions factors used in the calculator are from various sources that are listed below by category:

- Fuel Emissions Factors
  - National Inventory Report, 2020, Environment Climate Change Canada (ECCC)
- Electricity Emissions Factors



- National Inventory Report, 2020, ECCC
- Data and statistics, 2021, International energy Agency (IEA)
- Vehicle emissions
  - GHG Emissions Calculation Tool, 2017, The GHG Protocol
- Waste Emissions:
  - GHG Emission Factors Hub, 2021, US EPA

## VII. Totals

Total estimated emissions for the reporting company and emissions specific to the contract are automatically calculated and summarized in the 'Totals' tab.

This tab contains two tables with total yearly emissions summaries. The first table displays results separately for company-generic and contract-specific emissions, and the second table combines these two emissions sources. Both tables provide emission totals for the company as a whole, and the contract.

In order to generate emission estimates for the total yearly emissions summaries, the reporting organization must input the following data:

- Total Full-Time Equivalent Staff (Including all office staff and staff working from home)
- Total Person-Hours Expected to Complete the Contract

One full-time equivalent (FTE) staff member represents 37.5 hours per week, or 45.4 weeks per year, or 1,703 person-hours per year.

Employees working from home (i.e., telework) would report zero emissions from employee commuting. No emissions would be attributed to the energy used while working from home, as there is considerable uncertainty associated with such an estimate.

The user should now navigate to the "Totals" tab in the calculator, where there is a single gold input cell. In this cell, the user should input the number of employees who work at the organization across all business units being reported on (e.g., local offices, international offices, employees working from home). This cell will populate the Scope 3, Category 5 default values for emissions from waste generated in operations.

Emissions are tabulated per Scope and category, where applicable, to provide a simplified emissions profile .

## VIII. Frequently Asked Questions

The following section contains frequently asked questions with the associated answers.

### 1. Scope 1 Data and Inputs

#### 1. Which of the company's operations and offices should be included in the emissions quantification?

- Users should attempt to include emissions from ALL corporate office locations and operations in Canada and internationally. However, if the user has numerous offices that would require substantial data collection and resources to complete the calculator, or if the international offices are separate business entities from Canada-based offices or are not directly involved in

executing the contract work, the number of offices to be included can potentially be reduced to obtain a representative value for only the divisions or regions that are directly involved with performing contract work. It is important to define the project boundaries for this purpose.

- It should be recognized that if the number of offices included is limited to only a selection of locations, these same limitations should be applied to all calculations applied throughout the calculator. In particular, the number of full-time employees included in the “Totals” tab should be reduced accordingly (i.e., to only include the number of employees working in the locations included).

## **2. What if fuel records are only available for some buildings and not others?**

- Users should attempt to obtain fuel records for all buildings being included in the emissions estimate. If for some reason fuel records are not available (and therefore energy consumption can not be estimated), the calculator includes an additional tab for calculating approximate fuel and electricity consumption for typical Canadian office spaces. The ‘Office Energy Emissions Calculator’ tab can be used to fill data gaps where necessary, but actual consumption data should be used whenever possible.

## **3. How to account for emissions from employees working from home?**

- The energy consumption for employees working from home is assumed to be identical to the energy consumed by employees working in an office, with no emissions from commuting.

## 2. Scope 2 Data and Inputs

### **4. Where to find emissions factors for international locations not included in the calculator?**

- There is no single published source where emissions factors are available for all electricity generated internationally. The user will be required to conduct their own research to identify an appropriate emissions factor for their region. Emissions factors can typically be obtained from the country’s utility. If the emissions factor itself is not available, the user should identify the source of electricity (e.g., diesel fuel, natural gas, coal) and conduct further research to define an average emission factor for that source of power generation in general (i.e., not necessarily country specific).

### **5. How to calculate fuel and electricity consumption from vehicles if only the distance the vehicles have travelled is known?**

- The section “Scope 3 Emissions, Category 7” presents the steps to follow.

## 3. Scope 3 Data and Inputs

### **6. How to calculate emissions from a leased office space within a larger building (Scope 3, Category 8)?**

- Energy consumption records should be available from the building’s owner. These records would report the amount of fuel consumed (for boilers/furnaces) or electricity consumed.
- If records are only available for the building as a whole (i.e., not available for individual office spaces) the amount of energy consumed for only the user’s office space can be calculated based on the percentage of the building that the office space occupies, as follows:

**Percentage of building area occupied = (Total area of office/Total area of building) x 100%**

- The percent of building area occupied can be applied to the total energy consumption for the building to determine the amount of energy used the applicable office space, as follows:

**Office Energy Consumption = Building energy consumption x Percentage of building area occupied**

#### 4. Others

#### **7. Why the number of full-time employees included as part of the emissions estimate?**

- The Scope 3, Category 5 – Waste Generated in Operations can provide default values for emissions from waste, this calculation is based on the tonnage of waste per full-time office worker. For this reason, the number of full-time equivalent employees is required. If a waste audit has been completed by the reporting organization, the actual volumes of waste can be entered, and the total FTE is not required.

#### **8. Large organizations have changing company structures throughout the year (for example, due to mergers and acquisitions). Must the acquired/merged company also be taken into account, and if yes, should the joining company's emission period prior to the merger/acquisition be included?**

- The objective is to estimate the emissions related to a particular contract between the vendor and client. If it is expected that staff from the merger will have a significant role in the execution of the contract in question, the data inputs should be updated to reflect the merger. If the merger is not consequential to the contract, it can be ignored.

#### **9. What protocols are used in designing the calculator?**

- The Greenhouse Gas Protocol is the guiding standard for creation of the calculator, including the Technical Guidance for Calculating Scope 3 Emissions Version 1.0 and the Corporate Value Chain (Scope 3) Accounting & Reporting Standard.

#### **10. Is it possible to add rows, considering many of the cells are locked?**

- It is not possible for users to add rows, however based on feedback more rows may be added to the base template to meet the need.

#### **11. Completing an employee commuter survey for a large number of employees may not be feasible. How can we ensure sufficient accuracy for the purposes of this calculator?**

- If a commuter survey is completed and a representative sample of employees respond, the results can be extrapolated to the rest of the organization for total commuter km.

#### **12. What is the difference between a 'passenger-km' and a 'vehicle-km'?**

- The "passenger-km" unit is used for public transport and represents 1 passenger traveling 1 km. The "vehicle-km" unit represents 1 vehicle traveling 1 km regardless of its passenger capacity. For example, 1 vehicle-km for a vehicle containing 2 passengers is equivalent to 2 passenger-km.