Greenhouse Gas Industrial Reporting and Control Act Bulletin

Single Window Reporting System 2019 Updates Highlights

Overview

The Single Window Reporting System (SWRS), including the Single Window Information Manager (SWIM) and British Columbia Greenhouse Gas (BC GHG) modules, has been updated for the 2019 reporting period and onwards. This bulletin provides an overview of the updates. Any questions related to these changes or the SWRS can be directed to GHGregulator@gov.bc.ca.

A. SWIM Module
   1. New Look of Single Window Reporting System’s Gateway and page layout
   2. New User Mandatory Screen
      If you are a new user for the very first time and haven’t established your own profile, you will be prompted to create your profile immediately after creating your account (user name and password).
   3. Direct Help Links
      In SWIM every page has a direct link pointing to the right spot of the ECCC’s SWIM guidance that is related to the contents on that page.
   4. Alternate phone number in My Profile and other contacts
   5. Organization’s mailing address is mandatory
   6. Business Number Exceptions for Organizations and Parent Companies under specified categories
   7. Manage user’s email address for quick access request within an organization

B. BC GHG Module
   8. Stationary Fuel Combustion Information Requirements and Validation Rules
      Stationary fuel combustion exists in General Stationary Combustion and Fuel Combustion in Electricity Generation as described herein:
      1). Define the combustion equipment as shown in Fig. 1 under “Fuel Group” by describing the equipment at the field called “GSC Unit Name” and giving a brief explanation, if applicable. For example, define the equipment (or unit) as “Boiler #1” and “Producing hot water” as its use purpose for the description (Fig. 1).
      2). After defining the combustion unit, clicking the book-plus icon “➕” immediately below the unit description at the right side will pop up a new child window where information on fuel, parameters required for quantifying emissions and emission information are displayed as shown in Fig. 2.

Different fuels may be combusted in the same unit, or the same fuel may be combusted in different units. Repeat these procedures for each unit and fuel to complete the reporting of fuel combustion.
For reporting fuel combustion emissions, first, determine the fuel by clicking the dropdown arrow and selecting it from the list. Ensuring the units are correct, enter the appropriate quantity in the “Annual Fuel Amount” field. Then, determine the methodologies (selecting the methodology used for a gas from the dropdown list at the “Emissions for fuel” section at the bottom of Fig. 2) and the parameters used to quantify the emission for each gas, and enter their values. Lastly enter the calculated emission quantity to the “Emissions (t)” field corresponding to the gas in question. When completed, clicking the “Save” button saves the entries, bringing you back to the main window where the “Emissions (t CO2e)” will be automatically calculated and displayed.

**How to determine the parameters and methodology to be used?** According to WCI.20 there are several methodologies to quantify emissions for each gas (i.e. CO₂, CH₄ and N₂O). Based on the fuel type and the specific conditions, different methodologies may be used. Table 1 below provides an overview of the methodologies used for various fuel types and the parameters required under different conditions.

**Example 1:** if coal is combusted, and default HHV and default emission factor for CO₂ are used, meaning Methodology 1 (Default HHV/Default EF) is selected, then the parameters associated with this methodology are:

- Fuel – selecting a type of coal from the dropdown list (this is the first step);
- Annual Fuel Amount – manual entry (this must be done immediately after determining the fuel);
- HHV Measured/Default – becomes “Default” automatically;
- Annual Weighted Average High Heating Value – manual entry;
- CO₂ (EF) Measured/Default – becomes “Default” automatically;
- Emission Factor (CO₂) – manual entry and
- Emission Factor Unit (CO₂) – manual entry

*Note: Make sure correct “Emission Factor Unit” is entered*

**Example 2:** if municipal solid waste (MSW) is combusted and emissions will be determined based on the measured amount of steam along with the default emission factor for CH₄/N₂O, the Methodology (Measured Steam/Default EF) is selected, and the parameters associated with this methodology are:

- Fuel – selecting a type of MSW from the dropdown list (this is done at the first step);
- Annual Fuel Amount – manual entry (this should be done immediately after determining the fuel);
- Annual Steam Generation (Kg) – manual entry (whole number);
• CH$_4$/N$_2$O (EF) Measured/Default becomes **Default** automatically;
• Emission Factor (CH$_4$/N$_2$O) – manual entry and
• Emission Factor Unit (CH$_4$/N$_2$O) -- manual entry

Fig. 2 Fuel combustion emission reporting information requirements
Table 1 Overview of WCI.20 Methodologies

*Note:* “RQD” below means “Required” for a mandatory or conditionally mandatory item

<table>
<thead>
<tr>
<th>Fuel and Methodology</th>
<th>Parameter Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>CO₂</td>
<td>Fields mandatory: Fuel amount; HHV: “Default” shown, value entry RQD; CO₂ EF: “Default” shown, value entry RQD; CO₂ EF Unit: entry RQD</td>
</tr>
<tr>
<td>For a fuel (e.g. natural gas, or MSW, or coal): If CO₂ = Methodology 1 (Default HHV/Default EF) CO₂ = Fuel x EF x 0.001 (Eq. 20-1)</td>
<td>Fields mandatory: Fuel amount; CO₂ EF: “Default” shown, value entry RQD; CO₂ EF Unit: entry RQD</td>
</tr>
<tr>
<td>For a fuel (e.g. coal),</td>
<td></td>
</tr>
<tr>
<td>If CO₂ = Methodology 1 (Default EF)</td>
<td></td>
</tr>
<tr>
<td>CO₂ = Fuel x EFc x 0.001 (Eq. 20-1a)</td>
<td></td>
</tr>
<tr>
<td>For a fuel (e.g. natural gas, coal or MSW):</td>
<td></td>
</tr>
<tr>
<td>If CO₂ = Methodology 2 (Measured HHV/Default EF) CO₂ = (\sum_{i=1}^{n} Fuel_{i} \times HHV_{p} \times EF \times 0.001) (Eq. 20-2)</td>
<td>Fields mandatory: Fuel amount; HHV: “Measured” shown, value entry RQD; CO₂ EF: “Default” shown, value entry RQD; CO₂ EF Unit: entry RQD</td>
</tr>
<tr>
<td>For BF or MSW used to generate steam,</td>
<td></td>
</tr>
<tr>
<td>If CO₂ = Methodology 2 (Measured Steam/Default EF) CO₂ = Steam x B x EF x 0.001 (Eq. 20-3)</td>
<td>Fields mandatory: Fuel amount Steam Generation: Value entry RQD; CO₂ EF: “Default” shown, value entry RQD; CO₂ EF Unit: entry RQD</td>
</tr>
<tr>
<td>For any fuel (except for MSW),</td>
<td></td>
</tr>
<tr>
<td>If CO₂ = Methodology 3 (Measured CC)</td>
<td></td>
</tr>
<tr>
<td>CO₂ = (\sum_{i=1}^{n} 3.664 \times \frac{Fuel_{i} \times CC_{i}}{EF_{i}} \times 0.001) (Eq. 20-4; 20-6)</td>
<td>Fields mandatory: Fuel amount Avg CC: Value entry RQD;</td>
</tr>
<tr>
<td>CO₂ = (\sum_{i=1}^{n} 3.664 \times \frac{Fuel_{i} \times CC_{i}}{EF_{i}} \times 0.001) (Eq. 20-7)</td>
<td></td>
</tr>
<tr>
<td>For BF or MSW used to generate steam,</td>
<td></td>
</tr>
<tr>
<td>If CO₂ = Methodology 3 (Measured Steam/Measured EF) CO₂ = Steam x EF x 0.001 (Eq. 20-5)</td>
<td>Fields mandatory: Fuel amount Steam Generation: Value entry RQD; CO₂ EF: “Measured” shown, value entry RQD; CO₂ EF Unit: entry RQD</td>
</tr>
<tr>
<td>For any fuel,</td>
<td></td>
</tr>
<tr>
<td>If CO₂ = CEMS</td>
<td>Fields mandatory: Fuel amount None</td>
</tr>
<tr>
<td>CH₄/N₂O</td>
<td>Fields mandatory: Fuel amount; HHV: “Default” shown, value entry RQD; CH₄ EF: “Default” shown, value entry RQD; CH₄ EF Unit: entry RQD; N₂O EF: “Default” shown, value entry RQD; N₂O EF Unit: entry RQD</td>
</tr>
<tr>
<td>For a fuel ≠ coal (i.e. other than coal),</td>
<td>Fields mandatory: Fuel amount; HHV: “Default” shown, value entry RQD; CH₄ EF: “Default” shown, value entry RQD; CH₄ EF Unit: entry RQD; N₂O EF: “Default” shown, value entry RQD; N₂O EF Unit: entry RQD</td>
</tr>
<tr>
<td>If CH₄/N₂O = Default HHV/Default EF</td>
<td>Fields mandatory: Fuel amount; CH₄ EF: “Default” shown, value entry RQD; CH₄ EF Unit: entry RQD; N₂O EF: “Default” shown, value entry RQD; N₂O EF Unit: entry RQD</td>
</tr>
<tr>
<td>CH₄(N₂O) = (\sum_{i=1}^{n} Fuel_{i} \times HHV_{D} \times EF_{i} \times 0.000001) (Eq. 20-10)</td>
<td></td>
</tr>
<tr>
<td>For coal,</td>
<td>Fields mandatory: Fuel amount; CH₄ EF: “Default” shown, value entry RQD; CH₄ EF Unit: entry RQD; N₂O EF: “Default” shown, value entry RQD; N₂O EF Unit: entry RQD</td>
</tr>
<tr>
<td>CH₄(N₂O) = (\sum_{i=1}^{n} Fuel_{i} \times EF_{c,i} \times 0.001) (Eq. 20-11)</td>
<td></td>
</tr>
<tr>
<td>For a fuel ≠ coal (i.e. other than coal),</td>
<td>Fields mandatory: Fuel amount; HHV: “Measured” shown, value entry RQD; CH₄ EF: “Default” shown, value entry RQD; CH₄ EF Unit: entry RQD; N₂O EF: “Default” shown, value entry RQD; N₂O EF Unit: entry RQD</td>
</tr>
<tr>
<td>If CH₄/N₂O = Measured HHV/Default EF</td>
<td>Fields mandatory: Fuel amount; CH₄ EF: “Default” shown, value entry RQD; CH₄ EF Unit: entry RQD; N₂O EF: “Default” shown, value entry RQD; N₂O EF Unit: entry RQD</td>
</tr>
<tr>
<td>CH₄(N₂O) = (\sum_{i=1}^{n} Fuel_{i} \times HHV_{p,i} \times EF_{i} \times 0.000001) (Eq. 20-12)</td>
<td></td>
</tr>
</tbody>
</table>
### \( \text{For Coal,} \)
\[
\text{IF } \frac{\text{CH}_4}{\text{N}_2\text{O}} = \text{Measured EF} \\
\text{\quad } \text{CH}_4(\text{N}_2\text{O}) = \sum_{i=1}^{n} F_{\text{Fuel}_i} \times EF_{\text{C}_4} \times 0.001 \quad \text{(Eq. 20-13)}
\]

### \( \text{N}_2\text{O EF Unit: entry RQD} \)

Fields mandatory:
- Fuel amount;
- \( \text{CH}_4 \) EF: “Measured” shown, value entry RQD;
- \( \text{CH}_4 \) EF Unit: entry RQD;
- \( \text{N}_2\text{O} \) EF: “Measured” shown, value entry RQD;
- \( \text{N}_2\text{O} \) EF Unit: entry RQD

### \( \text{For BF or MSW used to generate steam,} \)
\[
\text{IF } \frac{\text{CH}_4}{\text{N}_2\text{O}} = \text{Measured Steam/Default EF} \\
\text{\quad } \text{CH}_4(\text{N}_2\text{O}) = \text{Steam} \times \text{B} \times \text{EF} \times 0.000001 \quad \text{(Eq. 20-14)}
\]

Fields mandatory:
- Steam Generation: Value entry RQD;
- \( \text{CH}_4 \) EF: “Default” shown, value entry RQD;
- \( \text{CH}_4 \) EF Unit: entry RQD;
- \( \text{N}_2\text{O} \) EF: “Default” shown, value entry RQD;
- \( \text{N}_2\text{O} \) EF Unit: entry RQD

### \( \text{For any fuel,} \)
\[
\text{IF } \text{CO}_2 = \text{CEMS}; \\
\text{IF } \frac{\text{CH}_4}{\text{N}_2\text{O}} = \text{Default EF} \\
\text{\quad } \text{CH}_4(\text{N}_2\text{O}) = (HI)_A \times EF \times 0.000001 \quad \text{(Eq. 20-15)}
\]

Fields mandatory:
- Total Heat Input: Value entry RQD;
- \( \text{CH}_4 \) EF: “Default” shown, value entry RQD;
- \( \text{CH}_4 \) EF Unit: entry RQD;
- \( \text{N}_2\text{O} \) EF: “Default” shown, value entry RQD;
- \( \text{N}_2\text{O} \) EF Unit: entry RQD

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9. **Mobile Equipment Combustion Emission**

The structure for reporting information for “Emissions from fuel combustion by mobile equipment that is part of the facility” has been reframed as shown in Fig. 3 below.

Please read carefully the **Note** text located at the middle of the window (Fig. 3), and make sure the emission factors are entered properly whether the corresponding methodologies are Default EF, Hours of Operation or Site-specific EF. **Entries of emission factors are now mandatory** fields.

To report, first select a fuel from the dropdown list, enter each quarter’s (Q1, Q2, Q3 and Q4) fuel usage (the “Annual Fuel Amount” field will be filled out and displayed automatically), then enter each gas’ (\( \text{CO}_2, \text{CH}_4 \) and \( \text{N}_2\text{O} \)) emission quantity. Finally, enter each gas’ emission factor and the associated units, which are mandatory (Fig. 3).
### Fig. 3 Mobile equipment combustion emission information requirements

#### Fuel

<table>
<thead>
<tr>
<th>Fuel</th>
<th>Q1</th>
<th>Q2</th>
<th>Q3</th>
<th>Q4</th>
<th>Annual Fuel Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Emissions for Fuel

<table>
<thead>
<tr>
<th>N/A</th>
<th>Gas</th>
<th>Emissions (t)</th>
<th>Emissions (t CO2e)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **CO2**
- **CH4**
- **N2O**

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Note: Please enter the default emission factor value and units from WCI methodology manual, or enter your own emission factor value and units if they are determined at the site or provided by the supplier, whichever applies. So whichever methodology (i.e., Default EF, Hours of Operation and Site-specific EF) is selected, the emission factors are mandatory.

- **CO2 Emission Factor**
- **CO2 Emission Factor Units**
- **CH4 Emission Factor**
- **CH4 Emission Factor Unit**
- **N2O Emission Factor**
- **N2O Emission Factor Unit**

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Save  Cancel
10. **Information requirements for coal sources under the “Coal Storage at Facilities that Combust Coal”**

The source information on coal (like origin and mine type etc.) that is combusted at a facility is now mandatory (Fig. 4), without providing such information the process will not proceed.

For each coal combusted, click the book-plus icon “➕” at the right side opposite “Coal Sources” at the main window of “Coal Storage at Facilities that Combust Coal”, a new child window “Coal Sources” pops out (Fig. 4). Click the dropdown arrow at the right side and select the appropriate entry for each of the top three items i.e. Coal Basin/Field, Province/State and Mine Type. If required, provide the appropriate entry for “Outside Basin Name” and “Outside Basin Info”. Lastly, enter the “Annual Amount Purchased (t)” and click the “Save” button to proceed. Clicking the “Cancel” button cancels the entry process and will return the user to the main window.

Fig. 4. Coal sources information requirement

After finishing the coal source information entries, select the applicable methodology and enter CH₄’s emission quantity, click the “Validate” button. If there is any error or mistake, follow the indications to correct it properly and click the “Save/Continue” button to continue. A completed example image of the reporting is shown in Fig. 5.
Fig. 5 Example image of filled out coal sources information

Regulation is Determinative

The above is not legal advice and is provided as an aid in understanding the Regulation. Operators are responsible for reviewing the Regulation to ensure compliance with it.