

Greenhouse Gas Industrial Reporting and Control Act Bulletin 022

New methodology for calculating electricity emissions and updated reporting requirements for Electricity Import Operations

Greenhouse Gas Emission Reporting Regulation (GGERR)

Overview

This bulletin provides information to electricity import operations (EIOs), regulated operations and verification bodies ('VBs') under the Greenhouse Gas Emission Reporting Regulation ('the Regulation' or 'GGERR') regarding recent amendments (OIC#87) to the methodology for calculating electricity emission intensity grid factors and emission reporting requirements. The updated methodology and requirements will support more complete and accurate reporting of electricity-related emissions.

Industrial operators and verification bodies should ensure they understand the requirements and provide notice of concerns to the attention of the Compliance Unit for Industrial Reporting and Control at GHGRegulator@gov.bc.ca. To view Order in Council No. 87, visit the [BC Laws website](#).

Background

The GGERR sets requirements for large industrial operations, including EIOs, to submit annual emission reports to the Ministry. These emission reports provide the information required for the Director under the Greenhouse Gas Industrial Reporting and Control Act (GGIRCA) ('the Director') to calculate the emissions intensity of B.C.'s electrical transmission grids. Regulated operations that produce liquefied natural gas (LNG) are required under the Regulation to calculate and report electricity emissions for their operations using the factor determined by the Director. This factor is also referenced in other government programs, policies, and agreements that price carbon and reduce emissions.

The Regulation sets out the methodology that the Director must use to calculate the emissions intensity of B.C.'s electrical transmission grids. The electricity emission intensity factor (EEIF) is derived annually from the emission reports submitted to the Ministry. Grid-connected entities must use the published EEIF in quantifying greenhouse gas (GHG) emissions from electricity which is not self-generated.

The GGERR has been amended to update calculations and requirements related to electricity emissions, including:

- Definitions of the variables in the calculation of emissions from specified sources;
- Definitions of the variables in the calculation of emissions from unspecified sources;
- Information required in emission reports; and
- Methodology for calculating the EEIF.

Amendments to the GGERR

Schedules D and E of the GGERR have been repealed and replaced with a consolidated version of Schedule D. Key changes are outlined in the proceeding sections.

Calculation of emissions from specified sources

In Section 3 of the updated Schedule D, the formula for calculating emissions from specified sources has not been changed. However, the variables in the equation have been redefined as follows:

$$\text{CO}_2 = \text{MWh}_s \times \text{Applicable Factor}$$

CO₂ = the amount reported under section 5 (a) (vi) or (c) (iv) of this Schedule, measured in tonnes of carbon dioxide equivalent;

MWh_s = (a) for the purposes of the calculation of emissions under section 5 (a) (vi), megawatt-hours of electricity imported from the specified source as measured at the first point of delivery in British Columbia, or

(b) for the purposes of the calculation of emissions under section 5 (c) (iv), megawatt-hours of electricity exported from the specified source as measured at the final point of delivery in British Columbia;

Applicable Factor = (a) for specified imports from a specified source listed in the plant information summary,

- (i) the emission factor specified by the director for the specified source, or
- (ii) if subparagraph (i) does not apply, the amount derived by dividing emissions in the tonnes column of the plant information summary by net generation for the unit or facility as specified in the net generation column of the plant information summary, or

(b) for the purposes of specified exports or specified imports from a specified source not listed in the plant information summary, one of the following:

- (i) if the specified source is a wind, solar, hydro or nuclear facility, zero;
- (ii) if subparagraph (i) does not apply, 0.435 tonnes of carbon dioxide equivalent per megawatt hour, unless the director has specified another amount for the specified source.

Calculation of emissions from unspecified sources

Likewise, in Section 4, the formula for calculating emissions from unspecified sources has not been changed, but the variables have been redefined as follows:

$$\text{CO}_2 = \text{MWh}_u \times \text{Emission Factor}$$

CO₂ = the amount reported under section 5 (b) (ii) and (d) (ii) of this Schedule measured in tonnes of carbon dioxide equivalent;

MWh_u = (a) for the purposes of section 5(b) (ii), megawatt-hours of electricity imported from the unspecified source as measured at the first point of delivery in British Columbia, or

(b) for the purposes of section 5 (d) (ii), megawatt-hours of electricity exported from the unspecified source as measured at the final point of delivery in British Columbia;

Emission Factor = 0.435 tonnes of carbon dioxide equivalent per megawatt-hour, unless the director has specified another amount for the unspecified source.

Reporting requirements

Reporting requirements for emission reports submitted by EIOs have been updated. In addition to the existing requirements, electricity import operators must now also report the following:

- For each specified source of electricity exported by the operation during the reporting period:
 - the name of the facility and sub-facility (if applicable)
 - the amount of specified exports as measured at the final point of delivery in BC
 - the amount of emissions from the production of electricity of those exports, as calculated in accordance with Section 3
- For each unspecified source of electricity exported by the operation during the reporting period:
 - the amount of unspecified exports as measured at the final point of delivery in BC
 - the amount of emissions from the production of electricity of those exports, as calculated in accordance with Section 3
- Canadian entitlement power, in megawatt-hours, supplied to the British Columbia electrical transmission grid in the reporting period.

Emission intensity factor calculation

The emission intensity factor calculation previously listed in Schedule E of the GGERR has been repealed. The methodology for calculating the EEIF set out in the GGERR has been amended by switching from a “gross imports” basis to a “net imports” basis, which will reflect the distinction between imports needed to meet domestic demand and trading activities intended to maximize the value of B.C. as a provider of energy storage services. In addition, the EEIF calculation will now move from a 3-year rolling average to a 4-year rolling average to dampen the impact of annual fluctuations related to extreme weather.

As per Section 6 of Schedule D, the Director under GGIRCA must publish the emission intensity factor for the reporting period for each electrical transmission grid in BC that represents the carbon dioxide equivalent tonnes per megawatt-hour averaged for the 4 calendar years preceding the compliance period. The EEIF must be calculated in accordance with the following steps:

- (a) for each of the following values in the formulas in paragraphs (c) and (d), add the total emissions for the 4 calendar years preceding the reporting period:
- (i) $GHG_{\text{generation}}$;
 - (ii) GHG_{SI} ;
 - (iii) GHG_{SE} ;
 - (iv) GHG_{UI} ;
 - (v) GHG_{UE} ;
- (b) for each of the following values in the formulas in paragraph (d), add the total megawatt-hours for each value for the 4 calendar years preceding the reporting period:
- (i) $MWh_{\text{generation}}$;

- (ii) MWh_{SI};
- (iii) MWh_{SE};
- (iv) MWh_{UI};
- (v) MWh_{UE};

(c) determine the value GHG_{UT} in accordance with the following formula:

$$\text{GHG}_{\text{UT}} = \text{GHG}_{\text{UI}} - \text{GHG}_{\text{UE}}$$

Where:

GHG_{UI} = the emissions, attributable to generation of unspecified imports, that are quantified and reported under this regulation in tonnes of carbon dioxide equivalent;

GHG_{UE} = the emissions, attributable to the generation of unspecified exports, that are quantified and reported under this regulation in tonnes of carbon dioxide equivalent.

(d) determine the emission intensity factor in accordance with the following formula:

$$\text{EIF} = \frac{\text{GHG}_{\text{generation}} + (\text{GHG}_{\text{SI}} - \text{GHG}_{\text{SE}}) + \text{GHG}_{\text{UT}}}{\text{MWh}_{\text{generation}} + (\text{MWh}_{\text{SI}} - \text{MWh}_{\text{SE}}) + (\text{MWh}_{\text{UI}} - \text{MWh}_{\text{UE}})}$$

The variables are defined as follows:

GHG_{generation} = the emissions, attributable to generation of electricity supplied to a British Columbia electrical transmission grid from facilities located in British Columbia, that are quantified and reported under this regulation in tonnes of carbon dioxide equivalent;

GHG_{SI} = the emissions, attributable to generation of specified imports, that are quantified and reported under this regulation in tonnes of carbon dioxide equivalent;

GHG_{SE} = the emissions, attributable to the generation of specified exports, that are quantified and reported under this regulation in tonnes of carbon dioxide equivalent;

GHG_{UT} = unspecified trade (or emissions attributable to unspecified imports minus emissions attributable to unspecified exports) bounded at or greater than zero. Please refer to the regulation for the required order of operations, but this generally means that GHG_{UT} is either:

- (a) If $\text{GHG}_{\text{UI}} - \text{GHG}_{\text{UE}} \geq 0$, then $\text{GHG}_{\text{UI}} - \text{GHG}_{\text{UE}}$, or
- (b) If $\text{GHG}_{\text{UI}} - \text{GHG}_{\text{UE}} < 0$, then 0.

MWh_{generation} = the amount of electricity, in megawatt-hours, supplied to the relevant British Columbia electrical transmission grid from facilities located in British Columbia and Canadian entitlement power;

MWh_{SI} = the amount of specified imports imported into British Columbia and supplied to the relevant electrical transmission grid, in megawatt-hours;

MWh_{SE} = the amount of specified exports exported from British Columbia, in megawatt-hours;

MWh_{UI} = the amount of unspecified imports imported into British Columbia and supplied to the relevant electrical transmission grid, in megawatt-hours;

MWh_{UE} = the amount of unspecified exports exported from British Columbia, in megawatt-hours.

Electricity emissions for LNG operations

As per Section 7 of Schedule D, emissions from the production and transmission of electricity acquired from a BC electrical transmission grid by an LNG operation or a facility of a different operation under section 4(1) (c) and (d) of the Regulation must be calculated by multiplying:

- the total electricity used in the compliance period in megawatt-hours for primary and ancillary purposes that is acquired from the grid, and
- the most recent emission intensity factor for the grid calculated in accordance with section 6 (c) of this Schedule and published by the director at the end of the compliance period.

However, as per Section 8 of Schedule D, if an LNG operation acquires electricity from sources other than the BC electrical transmission grid, generation at the LNG operation, or from a facility of a different industrial operation referred to in section 4 (1) (c) and (d), emissions must be quantified by multiplying the emissions from the generation of electricity reported in the emission report of the producer of the electricity by the fraction of that electricity supplied to that LNG operation.

Applicability

The requirements apply to the 2021 reporting period and going forward.

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.