BRITISH COLUMBIA | Ministry of Environment and Climate Change Strategy

FREQUENTLY ASKED QUESTIONS

- Electricity Emission Intensity Factors for Grid-Connected Entities -

What are the Electricity Emission Intensity Factors (EEIF) used for?

The Ministry of Environment and Climate Change Strategy annually publishes a set of greenhouse gas (GHG) emission intensity factors for electricity use. The published factors are used by grid-connected entities in quantifying GHG emissions of electricity which is not self-generated. Their use is required by Public Sector Organizations under B.C.'s Carbon Neutral Government Regulation, for offset projects as prescribed in relevant GHG emission offset protocols, and by other customers of BC Hydro and FortisBC who wish to calculate emissions associated with their electricity use.

Electricity in British Columbia (B.C.) is supplied to customers through the Integrated grid (southern and western B.C.), the Fort Nelson grid (northeast B.C.), and through community generating stations for isolated grid communities (throughout B.C.). The published grid factors for the Integrated grid and the Fort Nelson grid factors can be found here.

What is the difference between the EEIF published by the Ministry of Environment and Climate Change Strategy and BC Hydro?

As part of the implementation of the *Greenhouse Gas Industrial Reporting and Control Act (GGIRCA)*, starting in 2017, the Director under the *GGIRCA* established a methodology for determining and publishing annual grid-based GHG emission intensity factors for electricity use. Prior to that, the Ministry of Environment and Climate Change Strategy published, in the B.C. Best Practices Methodology for Quantifying Greenhouse Gas Emissions, provider-based GHG emission intensity factors for electricity purchased from BC Hydro and FortisBC. These factors reflected the emissions intensity of each utility provider's electricity generating fleet.

The methods differ in their scope in that the current estimates include all power producers in B.C., as well as considering imported electricity for in-province consumption. Additionally, the current method separates the integrated grid and Fort Nelson grid, while the BC Hydro factor includes their whole portfolio.

Why do the EEIFs change from year to year?

In a hydroelectric-based power system such as B.C.'s, GHG emissions from electricity generation can vary significantly from year to year. The quantity purchased by consumers and variations in water supply conditions and reservoir levels impacts this variation. For example, in years with low stream flow and/or low reservoir levels, hydroelectric power must be supplemented through fossil-fuel (thermally) generated electricity, purchased from neighbouring jurisdictions and/or through increased use of B.C. thermal generation facilities, leading to higher provincial GHG emissions. During years with higher stream flow and/or high reservoir levels, less fossil-fuel generated electricity is needed and GHG emissions are relatively lower.

Ministry of Environment and Climate Change Strategy

Why is there a decrease in B.C.'s published EEIF for the integrated grid from 2020 to 2021?

B.C.'s published EEIF for the integrated grid was 40.1 tCO2e/GWh in 2020 and decreased to 9.7 tCO2e/GWh in 2021 due to a change in the methodology used to determine the EEIF.

The methodology for determining the EEIF is set in Schedule D of the Greenhouse Gas Emission Reporting Regulation (GGERR). An amendment to the methodology came into force in 2022 to ensure the published EEIF values more accurately reflect the carbon intensity of the electricity consumed in B.C. The updated methodology considers B.C.'s surplus clean energy position and ability to be a provider of energy storage services, while also better aligning B.C. with other trading jurisdictions, including California and Washington state.

The two primary changes made to the methodology include a move from a "gross imports" basis to a "net imports" basis and from a 3-year rolling average to a 4-year rolling average. The proposed changes were informed by discussions with BC Hydro, Powerex, and FortisBC. The updated methodology will be used going forward from the 2021 EEIFs.

Revising the methodology to account for "net imports" instead of "gross imports" reflects 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. This is because in a "net imports" methodology only emissions associated with the portion of imports needed for domestic use are included in the EEIF.

Revising the methodology to use a 4-year rolling average will further dampen the impact of annual fluctuations.

For additional information about the methodology change, please refer to GGIRCA Bulletin #022.

Why is there an increase in B.C.'s published EEIF for the integrated grid from 2019 to 2020?

B.C.'s published EEIF for the Integrated grid was 29.9 tCO2e/GWh in 2019 and increased to 40.1 tCO2e/GWh in 2020 primarily due to increased imported electricity as 2019 was a drier year than 2018. Although there is an increase, the use of a multi-year rolling average aids in partially smoothing out annual fluctuations in the EEIF due to changing water conditions and the accompanying reliance levels on other electricity generation.

If you have any additional questions or concerns, please contact GHGRegulator@gov.bc.ca .