

## HYDRO-QUÉBEC'S ELECTRICITY FACTS:

# GHG Emissions and Hydro-Québec Electricity, 1990-2022

Hydro-Québec meets the energy needs of its customers almost entirely with hydroelectricity. The utility also purchases electricity from independent producers in Québec, elsewhere in Canada and the United States. These purchases include renewable energies (hydroelectricity, bioenergy, solar and wind energy) as well as non-renewable energies (nuclear and fossil thermal energy).

To calculate CO<sub>2</sub> emissions (kg eq/MWh) from all these sources of supply of the main grid, Hydro-Québec uses the following emission factors:

- A zero emission factor for renewable and nuclear energy
- A specific factor for each thermal generating station and each supplier (from Québec and outside of Québec)
- Renewable energy certificates that have been sold or transferred to third parties are removed from the residual emission rate
- From 2022, the calculated emission rate no longer takes into account the volumes of energy exported.

This method excludes emissions from off-grid systems.

The fluctuations in emission rate over the years are due to variations in our sources of supply. The highest emission rates are for years when production at our Tracy thermal generating station and our purchases from independent producers using fossil fuels were greatest. The Tracy plant stopped generating electricity in 2011.

Year	CO <sub>2</sub> Emissions* (kg eq/MWh)
1990	32.8
2011	6.5
2012	0.9
2013	1.1
2014	1.6
2015	1.0
2016	0.4
2017	0.6
2018	0.5
2019	0.5
2020	0.5
2021	0.6
2022	1.3

\* Excluding off-grid systems

For more information, consult the fact sheet entitled *Label for electricity distributed in Québec to customers supplied by Hydro-Québec's main power grid* for the twelve-month period ended December 31, 2022.



## VERIFICATION STATEMENT

### **GHG EMISSIONS AND HYDRO-QUÉBEC ELECTRICITY, 1990-2022**

Hydro-Québec retained the professional services of GHD Consultants Ltd. to undertake an audit of the *GHG Emissions and Hydro-Québec Electricity 1990-2022* fact sheet. These supplies represent Hydro-Québec's electricity generation and purchases injected onto Hydro-Québec's main distribution grid in 2022.

GHD has conducted the verification for the 2022 GHG emissions to a reasonable level of assurance, using the general principles outlined in ISO Standard 14064 Greenhouse Gases Part 3: Specification with guidance for the validation and the verification of the greenhouse gas assertions (ISO 14064-3:2006). This standard outlines the verification principles to apply in order to ensure that the greenhouse gas emissions reporting is complete, accurate, consistent, transparent and without material differences. These general principles have been used to verify the data presented on this fact sheet, without however adhering to the complete process of a regulatory audit. GHD is an accredited verification body and is recognized as an organization accredited to the ISO Standard 14065:2013 by a member of the International Accreditation Forum (IAF).

This fact sheet has been prepared by Hydro-Québec, based on its own collection of data gathered from numerous internal sources of information that have been corroborated and reviewed by Hydro-Québec's control methods and procedures. Energy generated by off-grid power stations, energy exported by Hydro-Québec and energy for which Renewable Energy Certificates (RECs) have been sold or transferred to third parties, are excluded.

GHD's responsibility is to determine whether the reported emissions for 2022 are accurately represented and whether errors, omissions or discrepancies, once aggregated, are below the relative importance threshold. The verification methods used by GHD include, but are not limited to, comparing input values with raw data, recalculating emissions and where applicable, applying sensitivity analysis to assess data integrity and reliability.

The supporting evidence is satisfactory and there are no material discrepancies. GHD can state that the evidence obtained during the audit has been used to assess, with a reasonable level of assurance, the targeted reports.

Montreal, June 6, 2023

Nuran Attarmigiroglu, P. Eng., GDBA  
Lead Verifier

GHD Consultants Ltd.