

Ministry of the
Environment, Conservation
and Parks

Ministère de l'Environnement,
de la Protection de la nature et
des Parcs

Financial Instruments Branch

Direction des instruments
financiers

40 St. Clair Ave. West
8th Floor
Toronto ON M4V 1M2

40, av. St. Clair Ouest
8^e étage
Toronto ON M4V 1M2



February 22, 2023

MEMORANDUM

To: Peter Mussio
Enbridge Gas Inc.

From: Eric Loi
Senior Engineer, Industrial Specialist

RE: 2022 Natural Gas Composition and Higher Heating Value Data

Thank you for your letter (enclosed) dated February 16, 2023 on the 2022 gas composition and higher heating value (HHV) data.

Ontario Regulation 390/18 (Greenhouse Gas Emissions: Quantification, Reporting and Verification) and the *Guideline for Quantification, Reporting and Verification of Greenhouse Gas Emissions* (Guideline) allows for the use of carbon content and fuel higher heating values in the calculation of greenhouse gas emissions from fuel combustion and flaring.

The provisions in the Guideline include the use of fuel sampling or results received from the fuel supplier at the minimum frequency of monthly for natural gas. The gas composition and higher heating value data for Enbridge Gas Distribution Inc. that is contained in your February 16, 2023 letter meets the minimum frequency requirements for fuel sampling and subject to the facility meeting all the other applicable requirements in the Guideline pertaining to the measurement of natural gas, the data can be used for the calculation of greenhouse gas emissions in applicable equations.

Thanks for your cooperation in providing this data for facilities to use in the calculation of 2022 greenhouse gas emissions.

Yours truly,

A handwritten signature in blue ink that reads "Eric Loi". The signature is fluid and cursive, with the first name "Eric" and last name "Loi" clearly distinguishable.

Eric Loi, P.Eng., M.Eng.

Cc. Paul Di Maria, Senior Analyst, Financial Instruments Branch, MECP
Encl.



Enbridge Gas Inc.
500 Consumers Road
North York, ON M2J 1P8

February 16, 2023

Eric Loi, P. Eng., M. Eng.
Senior Engineer
Ministry of Environment, Conservation and Parks
40 St. Clair Ave W, Foster Building
Toronto ON M4V 1M2

Delivered by e-mail: eric.loi@ontario.ca

Dear Eric:

RE: 2022 Gas Composition and HHV Data

Enbridge Gas Inc is pleased to provide gas composition and higher heating value (HHV) information for the reporters who will be reporting in 2023 into the Ontario GHG reporting system. This is provided in the summary table below. We understand that that this information will be made available to facilities by the Ministry for use in calculations under Regulation 390/18 and information purposes.

Sincerely,

A handwritten signature in black ink, appearing to read 'Peter Mussio', with a stylized flourish at the end.

Peter Mussio
Manager Carbon Strategy
Enbridge Gas Inc
Peter.Mussio@enbridge.com



Enbridge Gas Inc 2022 Gas Composition and High Heating Value Data													
		Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22
Ontario: Typical Gas HHV													
Natural gas HHV	(GJ/standard* m3)	0.0392	0.0392	0.0392	0.0390	0.0387	0.0385	0.0384	0.0385	0.0385	0.0388	0.0390	0.0392
Ontario: Typical Gas Composition													
methane	mole %	93.37	93.33	93.50	94.58	95.78	95.77	96.28	96.35	95.89	95.65	93.92	93.38
ethane	mole %	5.53	5.38	5.32	4.54	3.57	3.37	2.99	2.98	3.05	3.66	4.90	5.51
propane	mole %	0.22	0.26	0.26	0.20	0.13	0.09	0.08	0.10	0.21	0.17	0.22	0.26
butane	mole %	0.04	0.06	0.06	0.04	0.02	0.01	0.01	0.01	0.01	0.01	0.02	0.04
pentanes	mole %	0.01	0.02	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01
hexanes+	mole %	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
nitrogen	mole %	0.46	0.53	0.47	0.37	0.31	0.40	0.35	0.32	0.56	0.32	0.50	0.47
carbon dioxide	mole %	0.35	0.40	0.34	0.25	0.17	0.35	0.27	0.20	0.25	0.16	0.27	0.31
oxygen	mole %	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.12	0.01
hydrogen	mole %	0.01	0.01	0.01	0.02	0.02	0.01	0.02	0.02	0.02	0.02	0.01	0.01
Total	mole %	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
*Standard conditions: 15° Celsius, 101.325 kPa													
The gas analyses used to determine the typical HHV and gas composition follow the Measurement Canada requirements for Electricity and Gas and use the following analytical method references: GPA standards 2261 and 2286 for fuel carbon content and GPA standards 2145 and 2172 for fuel heat content.													
While every effort has been made to ensure the accuracy of this information, Enbridge Gas does not warrant accuracy of the information for any purpose. Enbridge Gas provides no guarantee regarding gas composition or high heating value (HHV) for any specific delivery point. It is the responsibility of the information user to ensure that the data meets the applicable regulatory requirements.													