

February 26, 2018

MEMORANDUM

To: Jennifer Murphy, P. Eng.
Enbridge Gas Distribution Inc.

Peter Mussio
Union Gas Ltd.

From: Eric Loi
Senior Engineer, Industrial Specialist

RE: 2017 Natural Gas Composition and High Heat Value Data

Thank you for your letter (enclosed) dated February 15, 2018 on the natural gas composition and high heat value (HHV) data for the year 2017.

Regulation 143/16 (Quantification, Reporting and Verification of Greenhouse Gas Emissions) and the *Guideline for Quantification, Reporting and Verification of Greenhouse Gas Emissions* (Guideline) allow for the use of fuel high heat values in the calculation of greenhouse gas emission from general stationary combustion sources.

The provisions in the Guideline include the use of fuel sampling or results received from the fuel supplier at the minimum frequency of semiannually for natural gas. The high heat value data that is contained in your February 15, 2018 letter for your respective companies does meet the minimum semiannual 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 2017 emission.

Yours truly,



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

Cc. Loraine Chan, Senior Program Advisor, Cap and Trade Program Branch, MOECC

Encl.



uniongas
A Spectra Energy Company

Enbridge Gas Distribution Inc.
500 Consumers Road
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Union Gas Ltd.
50 Keil Drive North
Chatham, ON N7M 5M1

February 15, 2018

Eric Loi, P. Eng., M. Eng.
Senior Engineer
Ministry of Environment and Climate Change
77 Wellesley St. West, Ferguson Block
Toronto ON M7A 2T5

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

Dear Eric:

RE: 2017 Gas Composition and HHV Data

Union Gas Ltd. and Enbridge Gas Distribution Inc. are pleased to provide gas composition and higher heating value (HHV) information for the reporters who will be reporting in 2018 into the Ontario GHG reporting system. This is provided in the summary tables below for both Enbridge and Union franchise areas. We understand that that this information will be made available to facilities by the Ministry for use in calculations under Regulation 143/16 and information purposes.

Sincerely,

Jennifer Murphy, P. Eng.
Sr. Environmental Advisor, Carbon Strategy
Enbridge Gas Distribution Inc.
jennifer.murphy@enbridge.com

Peter Mussio
Principal EHS Technical Advisor
Union Gas Ltd.
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Ontario: Typical Gas HHV [Enbridge Gas service area]		Jan-Jun 2017	Jul-Dec 2017
Natural gas HHV	(GJ/standard* m ³)	0.0385	0.0383
Ontario: Typical Gas Composition [Enbridge Gas service area]			
methane	mole %	94.65	95.43
ethane	mole %	3.79	3.20
propane	mole %	0.20	0.13
butane	mole %	0.03	0.01
pentanes	mole %	0.00	0.00
hexanes+	mole %	0.00	0.00
nitrogen	mole %	0.85	0.76
carbon dioxide	mole %	0.48	0.47
oxygen	mole %	0.00	0.00
hydrogen	mole %	0.00	0.00
Total	mole %	100.00	100.00

*Standard conditions: 15° Celsius, 101.325 kPa

This information is provided solely for the use of the reporting operations related to their compliance reporting obligation under Ontario Regulation 143/16 under the Climate Change Mitigation and Low-carbon Economy Act, where applicable. 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 for any specific delivery point.

Ontario: Typical Gas Higher Heating Value [Union Gas Ltd. service area]		Jan-Jun 2017	Jul-Dec 2017
Natural Gas HHV	(GJ/standard* m ³)	0.0388	0.0387
Ontario: Typical Gas Composition [Union Gas Ltd. service area]			
Methane	mole %	93.56	94.22
Ethane	mole %	4.75	4.24
Propane	mole %	0.26	0.21
Butane	mole %	0.04	0.03
Pentanes	mole %	0.01	0.01
Hexanes+	mole %	0.01	0.00
Nitrogen	mole %	0.91	0.87
Carbon dioxide	mole %	0.42	0.38
Oxygen	mole %	0.01	0.01
Hydrogen	mole %	0.03	0.03
Total	mole %	100.00	100.00

*Standard conditions: 15° Celsius, 101.325 kPa

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