EB-2024-0063

ONTARIO ENERGY BOARD

Supplementary Compendium of the Ontario Energy Association

September 24, 2024

INDEX

Tab 1

Recommendation for appropriate capital structure for Enbridge Gas in its application for 2024 rebasing and 2025-2028 price cap plan

prepared for Ontario Energy Board staff by London Economics International LLC

April 21st, 2023

London Economics International LLC ("LEI") was retained by Ontario Energy Board staff ("OEB staff") to prepare an expert report following review of the analysis of risk set out in Enbridge Gas Inc.'s ("Enbridge Gas') application for 2024 rebasing and 2025-2028 price cap plan (EB-2022-0200), and provide an independent opinion on the appropriateness of its capital structure proposal.

LEI's analysis indicates that the current equity ratio of 36% may be insufficient to account for the increase in risk faced by Enbridge Gas. LEI recommends an increase in equity ratio to 38% for the 2024-2028 period to account for the modest increase in business risks for Enbridge Gas. LEI's conclusions are primarily based on the following reasons:

- ***There is a modest increase in business risks for Enbridge Gas despite the advantages from amalgamation, particularly due to increase in risks associated with energy transition;***
- ***Since the amalgamation, Enbridge Gas is more capable of managing risks (including energy transition risk), owing to its larger customer base and the opportunity for increased operating efficiencies from economies of scale;***
- ***There is no material increase in financial risks, particularly with regard to risk of credit rating downgrade, consideration of environmental, social and governance ("ESG") factors in credit rating analysis, and accessibility to debt markets; and***
- ***The current equity ratio of 36% is lower compared to Canadian peers (averaging 37.2% customer-weighted average equity ratio) and US peers (averaging ~51.4% customer-weighted average equity ratio).***

To assess the potential impacts of LEI recommendation, LEI performed a forward-looking analysis of key credit metric ratios assuming equity ratio of 38% in conjunction with multiple return on equity ("ROE") scenarios. LEI's analysis indicates that Enbridge Gas' credit metrics improve in each scenario.

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List of acronyms

AHE	Index of Average Hourly Earnings for Ontario	**IRAC**	Prince Edward Island Regulatory and Appeals Commission
AUC	Alberta Utilities Commission	**IRM**	Incentive Ratemaking Mechanisms
AWE	Index of Average Weekly Earnings for Ontario	**IRP**	Integrated Resource Planning
CCUS	Carbon capture, utilization, and storage	**IRs**	Information Requests
CER	Canada Energy Regulator	**KPI**	Key Performance Indicator
CFO	Cash From Operations	**LDCs**	Local distributions companies
CGEP	Columbia Center on Global Energy Policy	**LEI**	London Economics International LLC
Concentric	Concentric Energy Advisors Inc.	**NGTL**	NOVA Gas Transmission Limited
DSM	Demand Side Management	**NSPI**	Nova Scotia Power Inc.
EBIT	Earnings Before Interest and Taxes	**OEB**	Ontario Energy Board
EBITDA	Earnings Before Interest, Taxes, Depreciation, and Amortization	**OM&A**	Operations, Maintenance and Administrative costs
EGD	Enbridge Gas Distribution, Inc.	**OPG**	Ontario Power Generation
EIA	U.S. Energy Information Administration	**PBR**	Performance-based ratemaking
Enbridge Gas	Enbridge Gas Inc.	**RDS**	Regulatory Document Search
ESG	Environmental, Social, and Governance	**RMI**	Rocky Mountain Institute
ETTF	Energy Transition Technology Fund	**RNG**	Renewable Natural Gas
FERC	Federal Energy Regulatory Commission	**ROE**	Return On Equity
FFO	Funds From Operations	**RRSP**	Registered Retirement Savings Plan
FRS	Fair Return Standard	**SFVD**	Straight Fixed Variable with Demand
GDP-IPI FDD	Gross Domestic Product Implicit Price Index – Final Domestic Demand	**SLB**	Sustainability Linked Bonds
GHG	Greenhouse gas	**TTF**	Dutch Title Transfer Facility
GRA	General Rate Application	**Union Gas**	Union Gas Limited
IEA	International Energy Agency	**X factor**	Productivity factor
IESO	Independent Electricity System Operator		
I factor	Inflation factor		
IRA	Inflation Reduction Act		

1 Background

1.1 On whose behalf have you prepared this report and what is their interest in this proceeding?

London Economics International LLC has prepared this report on behalf of OEB staff as an analysis of Enbridge Gas' equity ratio proposal in application EB-2022-0200 ("the application").[1] The application seeks approval for increased rates effective on January 1, 2024, for natural gas distribution, transportation, and storage.[2]

OEB staff has retained LEI to file an independent expert report associated with the appropriate equity ratio for Enbridge Gas considering analysis of risks set out in the application, as well as LEI's independent views of risk faced by Enbridge Gas.

1.2 Can you provide some examples of you or your firm's experience that is relevant to this proceeding?

LEI is a global economic, financial, and strategic advisory professional services firm specializing in energy, water, and infrastructure since late 1990s. Our experience along all aspects of the value chain of the power and gas sectors enables us to understand the interplay among the various components of the gas industry, a crucial skill needed for this project. LEI has over 25 years of experience in North American and international jurisdictions. With respect to Ontario, over the last two decades, the firm (under the leadership of LEI President, Mr. AJ Goulding)[3] has completed numerous engagements with the OEB, local gas and electricity distribution companies, Ontario Power Generation ("OPG"), the Independent Electricity System Operator ("IESO") and a variety of other Ontario-based market players and stakeholders.

LEI staff have relevant experience in cost of capital and capital structure matters (including advising on equity thickness), reviewing regulatory dockets and supporting regulatory staff with filing interrogatories. A selection of relevant work is provided below, and further information is included in the curriculum vitae for Mr. Goulding, Mr. Pinjani, and Mr. Nayak (provided separately).

- **LEI staff have conducted capital structure analysis in Ontario before**: LEI was retained by the Ontario Energy Board ("OEB") staff as a capital structure expert in respect of Ontario Power Generation ("OPG")'s 2022-2026 Payment Amounts Application. As part of its engagement, LEI assisted in preparing interrogatories; and prepared an independent expert report following a detailed review of the analysis of risks set out in

[1] OEB. EB-2022-0200. Enbridge Gas' application. October 30th, 2022.

[2] Ibid.

[3] AJ Goulding is also a faculty affiliate with the Columbia Center on Global Energy Policy ("CGEP"). Source: Center on Global Energy Policy

the application on the risks faced by OPG. LEI also responded to interrogatories with respect to its expert report. [OEB Proceeding No. EB-2020-0290]

- **LEI also has experience performing similar analyses before US and Canadian regulators**. Below are examples:
    - LEI was retained by the legal counsel for the Prince Edward Island Regulatory and Appeals Commission ("IRAC") to provide independent expert evidence on a just and reasonable return on equity ("ROE") for the Maritime Electric Company, Limited, associated with their General Rate Application ("GRA") for 2023-2025. [IRAC Docket: UE20946]
    - LEI was engaged by the North Dakota Public Service Commission as the outside independent technical consultant supporting the Commission's ratepayer advocacy staff in a rate case involving Montana-Dakota Utilities Company. LEI examined key components of the rate case, which included the depreciation study, tax rates, environmental upgrades, transmission investment, the ROE/common equity ratio, amortization for early retirement of coal plants, and impacts on residential rates versus impacts on other classes of service. [Case No. PU-22-194]
    - LEI was engaged by the Nova Scotia Utility and Regulatory Board (NS UARB) to assist in setting performance standards for Nova Scotia Power Inc. ("NSPI") in respect of reliability, response to adverse weather conditions, and customer service for Nova Scotia. Mr. Goulding and Mr. Pinjani served as testifying experts. [Proceeding No. 2016 NSUARB 193]
- **LEI staff are familiar with incentive ratemaking in Ontario**: LEI was engaged by OPG to support OPG regulatory processes related to performance-based rates during a consultative process initiated by the OEB. LEI prepared a discussion paper on incentive regulation mechanisms ("IRM") currently in place in Ontario for electricity and natural gas distribution utilities and presented it at a technical workshop at the OEB. LEI staff, including Mr. Goulding, also made a presentation on the cost of capital and risk factors associated with OPG's regulated assets. [OEB Proceeding No. EB-2012-0340]
- **LEI staff are familiar with the OEB's cost of capital framework for regulated utilities in Ontario:** LEI has been engaged by OEB staff (since Fall 2019) to provide quarterly updates on the macroeconomic conditions facing the utility sector in Ontario, and their potential impact on the cost of capital, inflation, and interest rate parameters for the Ontario energy sector.
- **LEI staff have experience in regulatory practices across Canada**. Below are examples:
    - LEI was engaged by the Commission of Inquiry Respecting the Muskrat Falls Project to serve as an expert to the Inquiry. LEI prepared a report addressing the following topics: a comparison of Newfoundland and Labrador's electricity regulation system relative to other jurisdictions; assessing the system's ability to

deal with challenges stemming from interconnection, including energy marketing; exploring the province's energy policy; recommending changes to the province's electricity pricing model; and assessing the potential role for renewable energy generation expansion. Mr. Goulding served as the testifying expert. [LEI Report at Exhibit P-04457]

- LEI was engaged by ENMAX Power Corporation to provide expert evidence and assist in its participation in the Alberta Utilities Commission ("AUC") proceeding to establish parameters for the third performance based ratemaking ("PBR") term in the province. LEI provided recommendations related to the timing of PBR rate adjustments, merits of the price cap versus revenue-per-customer cap approaches, I factor, X factor, capital funding provisions, earnings sharing mechanisms, and quantifying and tracking efficiencies. LEI based its recommendations on industry best practices as well as analysis of Alberta-specific data. [AUC Proceeding 27388]
- LEI was retained to provide regulatory support for Black Swan Energy in its response to the application of NOVA Gas Transmission Limited ("NGTL") to the Canada Energy Regulator ("CER"). LEI reviewed the application and assisted in trial preparation. LEI prepared an expert report to form the basis of Black Swan's intervenor evidence, and responded to information requests ("IRs"). Mr. Goulding served as the testifying expert. [CER Proceeding No. RH-001-2019]
- LEI supported an electricity distribution company (ENMAX Power Corporation) in Alberta, Canada, in its application to restructure rates to move from cost-of-service to performance-based approach. LEI prepared a filing for the company's regulator proposing a formula-based tariff-setting scheme, based on LEI-developed formula for periodic adjustments to an average tariff metric based on an inflation factor, efficiency factor, the impact of capital investments, operational performance relative to defined metrics; and defined mechanisms for additional adjustments based on force majeure and financial performance outside a defined range. LEI team members provided strategic advice to the CEO and other senior managers on presenting the firm's proposal to the regulator and stakeholders; and provided expert testimony in support of the firm's filing to its regulator. Mr. Goulding served as the testifying expert. [AUC Application No. 1550487]

- **LEI has provided extensive analysis associated with financing/refinancing activities**: LEI has served as an independent market expert during the financing or refinancing of numerous zero-emitting resources in North America and other global jurisdictions. For instance, LEI has provided the independent market advisor report associated with refinancing of multiple hydro, solar, and wind assets owned by companies across North America, as well as in Latin America and the Middle East.

1.3 About Enbridge Gas

Enbridge Gas is a regulated natural gas distribution, storage, and transmission utility based in Ontario that serves ~3.9 million customers. Their assets include ~151,500 kilometers ("km") of main and service pipelines. Figure 1 shows Enbridge Gas' pipeline system configuration.

Enbridge Gas uses this infrastructure to distribute natural gas to its residential, commercial, and industrial customers. In addition to their distribution system, Enbridge Gas also has 283.7 billion cubic feet (Bcf) of net working storage, largely at the Dawn Hub in southwestern Ontario.[4]

Figure 1: Enbridge Gas - service territory

Source: Enbridge. Infrastructure map. *Accessed on March 29th, 2013.*

Enbridge Gas – Key Metrics

Number of customers: 3.9 million

Number of employees: 3,909 (2022 estimate)

Core business:

- Gas commodity and distribution
- Storage and transportation

2022 Financial Highlights (in millions of Canadian dollars):

- Total revenue: 6,608
  - Gas commodity and distribution – residential: 3,771
  - Gas commodity and distribution revenue – commercial/industrial: 1,832
  - Storage revenue: 176
  - Transportation revenue: 791
  - Other revenue: 76
- Total assets: 29,527

Pipelines in North America:

- Total pipelines – 153,000 km
- Distribution pipelines – 147,000 km
- Transmission pipelines – 5,500 km

Source: Enbridge Gas 2022 Annual Report; Enbridge. *Gas utilities and storage*; S&P Capital IQ Pro; EB-2022-0200, Exhibit 1, Tab 8, Schedule 1, Attachment 10; EB-2022-0200, Exhibit I.1.8-STAFF-14, Attachment 3, Page 17 of 42; EB-2022-0200, Exhibit 4, Tab 4, Schedule 3, Plus Attachments. Page 3 of 44.

[4] Enbridge. *Gas utilities and storage*. Accessed on March 26th, 2023.

1.4 What is Enbridge Gas applying for in this proceeding?

Enbridge Gas has applied for increased rates effective on January 1st, 2024, for the sale, distribution, transmission, and storage of natural gas. In addition to the proposed increased rates, Enbridge Gas has applied for an incentive rate-making mechanism ("IRM") for the years 2025 to 2028.[5]

The incentive rate-making framework, also known as PBR, has been designed, in the OEB's view, to "*provide the utilities with incentive for behaviour which more closely resembles that of competitive, cost-minimizing, profit-maximizing companies.*"[6]

1.5 What equity thickness has Enbridge Gas proposed for its capital structure?

Enbridge Gas is proposing an increase in its common equity ratio (by 2%) to 38% for the first/rebasing year (2024) with subsequent 1% increases in 2025 through 2028. Its proposal would result in a common equity ratio of 42% in 2028, as shown in the figure below.

Figure 2: Equity ratio proposed by Enbridge Gas

Year	Equity Ratio Proposed
2023	36% (current equity ratio)
2024	38% (from 36%)
2025	39%
2026	40%
2027	41%
2028	42%

Source: OEB. EB-2022-0200. Exhibit 5: Cost of Capital Overview. Tab 3; Schedule 1; Page 3 of 7. October 31, 2022

1.6 What justification has Enbridge Gas provided for its proposed capital structure?

Enbridge Gas has filed a report prepared by their consultants, Concentric Energy Advisors, Inc. ("Concentric") to support the proposed capital structure. Enbridge Gas writes that it must increase its common equity ratio to "*maintain financial strength and continued access to capital at a reasonable cost, and to manage the Energy Transition under a variety of economic and capital market conditions.*"[7] The sub-sections below briefly summarize Concentric's justifications for the proposed equity thickness.

[5] OEB. EB-2022-0200. 2024 Rebasing – Application and Evidence. P. 1. October 31st, 2022

[6] OEB. EB-2022-0200. Exhibit 5: Cost of Capital Overview. Tab 3; Schedule 1; Page 77 of 164. October 31st, 2022

[7] OEB. EB-2022-0200. Exhibit 5: Cost of Capital Overview. Tab 3; Schedule 1; Page 2 of 7. October 31st, 2022.

1.6.1 Concentric's risk analysis for Enbridge Gas

Concentric analyzed the Enbridge Gas' risk profile between the writing of the report, October 31, 2022, and 2012, which, according to Concentric, was the last time OEB evaluated the equity thickness for Enbridge Gas Distribution ("EGD") and Union Gas Limited ("Union Gas"). Concentric identified five aspects of Enbridge Gas' risk profile. The key findings from the risk analysis are presented in Figure 3.

Figure 3: Concentric's conclusions from risk analysis

Risks	Change in Enbridge Gas's risk profile since 2012
Energy transition risk: investors and rating agencies are widely recognizing the potential long-term reduction in natural gas use	Significant increase
Volumetric risk: long-term risks especially with increased competition from gas and electricity suppliers	Modest increase
Financial risk: gradual weakening in its debt-related credit metrics since 2012	Modest increase
Operational risk: increase in complexities of operating a utility	Neutral to modest increase
Regulatory risk: uncertainty from future regulatory decisions	Modest decrease (subject to OEB approval of Straight Fixed Variable ("SFV") rate design proposal)

Source: OEB. EB-2022-0200. Exhibit 5: Cost of Capital Overview. Tab 3; Schedule 1; Attachment 1. Page 6 of 164. October 31st, 2022.

1.6.2 Concentric's assessment of Enbridge Gas relative risk and equity ratio to other utilities

Concentric compared Enbridge Gas' equity ratio with four proxy groups. Two proxy groups comprise Canadian holding and operating natural gas companies and two others comprise US holding and operating natural gas companies. Concentric concludes "*Enbridge Gas' current deemed equity thickness is low relative to its peer companies, despite Enbridge Gas falling in the middle of the spectrum of risk profiles.*"[8]

Concentric also writes that the equity ratios presented in their peer group (see Figure 4) support the equity ratio range of 40% to 45% with 42% being the preferred floor for the equity ratio for Enbridge Gas.

[8] OEB. EB-2022-0200. Exhibit 5: Cost of Capital Overview. Tab 3; Schedule 1; Attachment 1. Page 84 of 164. October 31st, 2022.

Figure 4: Concentric's analysis of comparative proxy groups (mean)

Proxy group	Currently authorized equity ratio's	2-year average book equity ratio	Holding company 2-year average equity ratio
Canadian Operation Companies	41.70%	42.80%	N/A
Canadian Holding Companies	47.53%	55.57%	41.28%
US Operating Companies	51.40%	53.38%	N/A
US Holding Companies	53.54%	54.92%	45.79%

Source: OEB. EB-2022-0200. Exhibit 5: Cost of Capital Overview. Tab 3; Schedule 1; Attachment 1. Page 101 of 164. October 31, 2022

1.6.3 Consideration of previous OEB decisions/findings

The three OEB decisions primarily referenced by Concentric in their analysis are: (i) EB-2011-0210 (associated with Union Gas decision and rate order from January 17th, 2013), (ii) EB-2011-0354 (associated with EGD decision on equity ratio and order from February 7th, 2013), and EB-2017-0306 and EB-2017-0307 (associated with EGD's and Union Gas' amalgamation and rate-setting mechanisms from August 30th, 2018). The figure below summarizes each.

Figure 5: Previous key OEB decisions

OEB order	Concentric observation
EB-2011-0210 (Union Gas decision and rate order)	• Concentric refers to OEB's 2009 cost of capital policy, which states, "*for natural gas distributors such as Union, deemed capital structure is determined on a case-by-case basis and that reassessment of a gas utility's capital structure is determined on a case-by-case basis and that reassessment of a gas utility's capital structure will only be undertaken in the event of significant changes in the company's business and/or financial risks.*" • Concentric references the OEB's Fair Return Standard ("FRS") requirements for a "*fair and reasonable return on capital*" and mentions that the OEB's obligation to determine equity thickness comes from the FRS.
EB-2011-0354 (EGD decision on equity ratio and order)	• The decision found that gas utility equity thickness is determined on a case-by-case basis. • The decision also determined that an appropriate time frame to assess risk while also determining forward-looking risks as ones that "*the relevant future risks are those that are likely to affect Enbridge in the near term.*" • Concentric argued that an increase in equity thickness to 42% is the material change in the risk profile since 2012, particularly in reference to the energy transition. • The board found in this decision that, "*the evidence does not demonstrate a tangible risk that new environmental policy and laws in relation to gas distribution will be implemented over the near term, or if implemented, will be likely to have a detrimental effect on Enbridge in terms of volume over the near term.*"
EB-2017-0306/0307	• The utilities, EGD-Union Gas, applied for an equity thickness of 36% for the amalgamated entity, which was approved by the OEB.

Source: OEB. EB-2022-0200. Exhibit 5: Cost of Capital Overview. Tab 3; Schedule 1; Attachment 1. Page 15-16 of 164. October 31, 2022.

2 Prior proceedings

2.1 How has the OEB decided on equity thickness proposals for Enbridge Gas in previous proceedings?

The entity known today as Enbridge Gas is an amalgamation of Enbridge Gas Distribution, Inc. ("EGD") and Union Gas Limited ("Union Gas"). The two companies jointly filed for approval of amalgamation in 2017, following Enbridge Gas' parent company, Enbridge Inc.'s merger with Spectra Energy Corp., the parent of Union Gas.[9]

The two predecessor companies, EGD and Union Gas, went through two separate equity ratio proceedings several years before the amalgamation and the equity ratio of Enbridge Gas, as the amalgamated entity, was unaltered. The figure below presents previously proposed and approved equity ratios.

Figure 6. Historical rate cases and approved equity ratios

Rate Case	Applicant	Equity Ratio Proposed	Equity Ratio Approved
EB-2005-0520	Union Gas	40% (from 35%)	36%
EB-2006-0034	EGD	38% (from 35%)	36%
EB-2011-0210	Union Gas	40%	36%
EB-2011-0354	EGD	42%	36%
EB-2017-0306/0307	EGD and Union Gas (application on amalgamation)	36%	36%

Note: It is important to note that while Concentric has argued that a "*detailed risk analysis was not performed in relation to equity thickness in EB-2017-0306*", the OEB Decision in EB-2017-0306 specificlly states: "*the applicants also applied for the following approvals…. 64/36 debt to equity ratio.*"

Sources: OEB. **EB-2005-0520**. Union Gas Limited. For Rates for Fiscal 2007. Decision with Reasons. June 29th, 2006.; **EB-2006-0034**. Enbridge Gas Distribution Inc. 2007 Rates. Decision with Reasons - Phase 1. July 5th, 2007.; **EB-2011-0210**. Union Gas Limited. Decision and Order. October 24th, 2012.; **EB-2011-0354**. Enbridge Gas Distribution Inc. Decision on Equity Ratio and Order. February 7th, 2013.; **EB-2017-0306** and **EB-2017-0307**. Decision and Order. Enbridge Gas Distribution Inc. and Union Gas Limited Application for Amalgamation and Rate-Setting Mechanism. August 30th, 2018.

2.2 How has the OEB defined/commented on change in business and financial risk in previous proceedings?

In EB-2017-0306 (i.e., the EGD and Union Gas application for amalgamation), as the applicants proposed to maintain an equity ratio of 36%, OEB did not comment on change in business/financial risks impacting equity ratio.

[9] OEB. EB-2017-0306/0307. Decision and Order. Page 3. August 30, 2018.

Prior to the amalgamation, the OEB commented on EGD and Union Gas' business and financial risks in the following decisions: EB-2011-0210 (i.e., the decision and order for Union Gas Limited) and in EB-2011-0354 (i.e., the decision on equity ratio and order for EGD).

In these decisions, the OEB concluded that the business and financial risks for EGD and Union Gas had not materially increased. The Board's findings for the decision associated with EGD's application are summarized below in Figure 7.

Figure 7. Summary of OEB findings on business and financial risk in previous proceedings

Risks identified	Board findings	Relevant to current proceeding?
Volumetric demand profile	• *"Currently, gas maintains a significant price advantage over oil and electricity. The evidence does not indicate whether gas prices are likely to increase over the near term, or how the price of gas is likely to compare to that of other fuel sources in that timeframe."*	✓
System size and complexity	• *"the issue the Board must consider is not whether system size and complexity, including related safety standards, has increased; it is whether the increase in size and complexity results in higher risk."* • *"As Enbridge's system grows and becomes more complex, Enbridge adds more assets and employees and does more work."* • *The result may be a higher number of adverse events. However, system growth also brings benefits such as greater economies of scale, greater customer and geographical diversity, more advanced systems and greater employee expertise."* • *"As a result, increased size and complexity does not necessarily mean that Enbridge's risk will increase."*	✓
Environmental and technological advancement	• *"The evidence does not demonstrate a tangible risk that new environmental policy and laws in relation to gas distribution will be implemented over the near term, or if implemented, will be likely to have a detrimental effect on Enbridge in terms of volume over the near term."*	✓
Financial risk	• *"the Board concludes that Enbridge's market circumstances have not deteriorated significantly since 2007 in terms of access to capital, interest coverage ratio, credit ratings, debt terms or financial results, and that consequently Enbridge has not experienced a significant increase in financial risk since 2007."*	✓

Source: OEB. *Decision on Equity Ratio and Order EB-2011-0354, Application for an Order or Orders approving or fixing just and reasonable rates and other charges for the sale, distribution, transmission and storage of gas commencing January 1, 2013.* February 7, 2013.

For the decision associated with Union Gas' application (EB-2011-0210), the OEB stated that "*Union filed no evidence in this proceeding that demonstrates its business and/or financial risks have changed over the period that the IRM Settlement Agreement was in place*".[10] As such, OEB did not comment on specific business and financial risks in EB-2011-0210.

A few additional comments from the OEB in previous proceedings are relevant. For instance, in proceeding EB-2011-0354 (i.e., the decision on equity ratio and order for EGD), the OEB stated that, regarding financial risk, the "*essential question to consider is how the market would view Enbridge*

[10] OEB. EB-2011-0210. Union Gas Limited. Decision and Order. October 24th, 2012. Page 48.

as a potential investment."[11] Further, the OEB found that the key metrics to examine to assess their potential as an investment were, "*access to capital, interest coverage ratios, credit ratings, debt terms, and financial results*."[12]

In proceeding, EB-2011-0210, (i.e., the decision and order for Union Gas Limited), the OEB states, "*the 2009 Cost of Capital Policy of the Board at page 43 sets out that for natural gas distributors such as Union, deemed capital structure is determined on a case-by-case basis and that reassessment of a gas utility's capital structure will only be undertaken in the event of significant changes in the company's business and/or financial risks*."[13]

The OEB also mentioned that the "*obligation to determine the quantum of common equity (at issue in this proceeding) and the cost of that equity (subject to the Settlement Agreement) is governed by the FRS, which is a non-optional, legal standard.*"[14] The textbox below summarizes the Fair Return Standard ("FRS").

The Fair Return Standard ("FRS")

The Fair Return Standard was articulated by the NEB in its RH-2-2004 Phase II Decision (related to TransCanada Pipelines Cost of Capital), when it stated that a fair or reasonable return on capital should:

- Be comparable to the return available from the application of invested capital to other enterprises of like risk (***the comparable investment standard***);
- Enable the financial integrity of the regulated enterprise to be maintained (***the financial integrity standard***); and
- Permit incremental capital to be attracted to the enterprise on reasonable terms and conditions (***the capital attraction standard***).

Source: National Energy Board. *RH-2-2004, Phase II Reasons for Decision, TransCanada Pipelines Limited Cost of Capital.* April 2005.

The OEB is of the view that the FRS constitutes the over-arching principle for setting the cost of capital. Agreeing with the Federal Court of Appeal in the TransCanada decision, the OEB agrees that the process to determine the cost of capital "*aligns the private interest of the utility and its shareholders with the public interest.*"

Source: OEB, *Report of the Board on the Cost of Capital for Ontario's Regulated Utilities.* December 2009.

[11] Ontario Energy Board. *EB-2011-0354. Decision on Equity Ratio and Order. Enbridge Gas Distribution Inc. Application for an Order or Order approving or fixing just and reasonable rates and other charges for the sale, distribution, transmission and storage of gas commencing January 1, 2013.* February 7, 2013. Page 16.

[12] Ibid.

[13] OEB. EB-2011-0210. Decision and Order. October 24, 2012. P. 48.

[14] Ibid, P. 49-50.

3 Risk assessment framework

The OEB's 2009 cost of capital policy states: "*…the base capital structure will remain relatively constant over time and that a full reassessment of a gas utility's capital structure will only be undertaken in the event of significant changes in the company's business and/or financial risk.*"[15] As such, the timeframe to compare change in business and/or financial risks is relevant.

As discussed earlier in Section 2.1 , Enbridge Gas had proposed a common equity ratio of 36% in its 2017 application for amalgamation of EGD and Union Gas (i.e., EB-2017-0306), which was approved by the OEB.[16]

In this application, Concentric has compared Enbridge Gas' risk profile in 2022 to EGD and Union Gas's risk profile in 2012 stating that it "*is the approximate period in which EB-2011-0354 (i.e., the OEB's most recent equity thickness evaluation for EGD) and EB-2011-0210 (i.e., the OEB's most recent equity thickness evaluation for Union Gas) occurred.*"[17]

Given Enbridge Gas' proposed equity ratio of 36% in EB-2017-0306 (amalgamation proceeding) was exactly the same as previously approved by OEB for both EGD (in EB-2011-0354) and Union Gas (in EB-2011-0210), it is reasonable to assume that Enbridge Gas did not believe that their risk profile (for the amalgamated entity) had materially changed between 2012 and 2017.[18,19]

In response to the OEB staff's query on this matter, Concentric responded that the "*companies, at that time, did not provide a risk assessment that would have served as a basis for reconsidering the allowed equity ratio, and it was a not a rate proceeding where such evidence would have been considered*".[20] LEI disagrees with the statement that *evidence on risk assessment* would not have been considered in the amalgamation proceeding. As such, Enbridge Gas had the opportunity to provide a risk

[15] OEB. EB-2009-0084. Report of the Board on the Cost of Capital for Ontario's Regulated Utilities. December 11th, 2009.

[16] OEB. EB-2017-0306 and EB-2017-0307. Decision and Order. Enbridge Gas Distribution Inc. and Union Gas Limited Application for Amalgamation and Rate-Setting Mechanism. August 30th, 2018 (Amended on September 17th, 2018).

[17] OEB. EB-2022-0200. Exhibit 5: Cost of Capital Overview. Tab 3; Schedule 1; Attachment 1. Page 5 of 164. October 31st, 2022.

[18] It is also notable that Enbridge Gas had applied for a 10-year deferred rebasing period, i.e., for 2029, indicating that Enbridge Gas potentially expected the approved equity ratio of 36% to be reasonable until then. However, OEB approved a 5-year deferred rebasing period, with rebasing in 2024. (Source: OEB. EB-2017-0306 and EB-2017-0307. Decision and Order. August 30th, 2018 (Amended on September 17th, 2018). Page 22.)

[19] Concentric has also acknowledged that the applicants in the amalgamation proceeding proposed to retain the equity ratio of 36%: "*In its amalgamation application, EGD and Union proposed to maintain the equity ratio of the amalgamated entity at 36 percent, which was accepted by the OEB.*" Source: OEB. EB-2022-0200. Exhibit 5: Cost of Capital Overview. Tab 3; Schedule 1; Attachment 1. Page 16 of 164. October 31st, 2022.

[20] OEB. EB-2022-0200. Exhibit I.5.3-STAFF-195. Page 1 of 1. March 8th, 2023.

assessment for OEB's consideration (in EB-2017-0306), if it believed there was a material increase in risk.

Given Enbridge Gas' proposal to retain the equity ratio of 36% in EB-2017-0306, and OEB's approval of the same in August 2018, LEI believes the relevant time period to compare risk profile is since 2017/2018.

Having stated the above, as presented in Figure 8, the rating agency reports show no material change in EGD's and Union Gas' business and financial risk profiles between 2012 and 2017. Moreover, as shown later in Figure 31, the beta (which measures an asset's risk relative to the market)[21] for gas utilities declined from 0.89 in 2012 to 0.77 in 2017, indicating less perceived risk for gas utilities relative to the market in 2017 vis-a-vis 2012.

Figure 8. Summary of assessments by rating agencies between 2012 and 2017

Rating Agency	Parameter	2012	2013	2014	2015	2016	2017
EGD							
DBRS	Credit Rating	A	A	A	A	A	A
	Unsecured Debentures & Medium-Term Notes	A	A	A	A	A	A
	Commercial Paper	R-1 (low)	R-1 (low)	R-1 (low)	R-1 (low)	R-1 (low)	R-1 (low)
	Outlook/trend	Stable	Stable	Stable	Stable	Stable	Stable
S&P	Credit Rating	A-	A-	A-	BBB+	BBB+	A-
	Business risk profile	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent
	Financial risk profile	Significant	Significant	Significant	Intermediate	Intermediate	Significant
	Liquidity	Adequate	Adequate	Adequate	Adequate	Adequate	Adequate
	Outlook/trend	Stable	Stable	Stable	Stable	Stable	Stable
Union Gas							
DBRS	Credit Rating	A	A	A	A	A	A
	Unsecured Debentures & Medium-Term Notes	A	A	A	A	A	A
	Commercial Paper	R-1 (low)	R-1 (low)	R-1 (low)	R-1 (low)	R-1 (low)	R-1 (low)
	Outlook/trend	Stable	Stable	Stable	Stable	Stable	Stable
S&P	Credit Rating	BBB+	BBB+	BBB+	BBB+	BBB+	A-
	Business risk profile	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent
	Financial risk profile	Significant	Significant	Significant	Significant	Significant	Significant
	Liquidity	Adequate	Adequate	Adequate	Adequate	Adequate	Adequate
	Outlook/trend	Stable	Stable	Stable	Stable	Positive	Stable

Source: OEB. EB-2022-0200. Exhibit I.1.8-STAFF-14. Attachments 11, 12, 13 and 14. March 8th, 2023.

[21] Nasdaq. Glossary of financial terms. Beta. Accessed on April 4th, 2023.

As presented in Figure 8, both EGD and Union Gas' credit rating by DBRS remained constant at 'A' over the 2012-2017 period, S&P's credit rating for Union Gas improved from BBB+ to A- between 2012 and 2017, and S&P's credit rating for EGD remained A- in 2012 and 2017.[22]

Business risks and financial risks are related to uncertainty surrounding a company's operating earnings and its ability to finance its investments. For example, the AUC defines business risk as follows: "*Business risk represents the perceived uncertainty in future operating earnings before the impact of financial leverage (EBIT) and, hence, determines the capacity for a business to be financed with debt as opposed to equity.*"[23] Separately, financial risks are primarily linked to a company's ability to continue to finance its capital needs and growth opportunities by attracting investors and lenders at reasonable terms.

Concentric has grouped its analysis of risk in five categories: (i) energy transition risk; (ii) volumetric risk; (iii) financial risk; (iv) operational risk; and (v) regulatory risk. In subsequent sections, LEI has analyzed these categories, with 'business' risks comprising energy transition risk, volumetric risk, operational risk and regulatory risk, and 'financial risks' comprising: (i) analysis of Enbridge Gas' credit metrics and potential impact on rating; (ii) implications of ESG criteria in financing; (iii) role of inflation; and (iv) accessibility to debt markets.

3.1 Have Enbridge Gas' business risks changed since the previous decision?

The business risks assessed in this section include the following: (i) energy transition risk; (ii) volumetric risk; (iii) operational risk; and (iv) regulatory risk.

3.1.1 Energy transition risk

Energy transition is currently underway globally, and refers to the shift from an energy system that primarily relies on fossil fuel-based energy sources (such as natural gas, coal and oil) to zero-emitting renewable energy sources (such as solar and wind power).[24] Concentric states that the risk profile for natural gas distribution utilities such as Enbridge Gas has fundamentally changed due to energy transition, which has accelerated in the last 5 years.[25] Concentric describes multiple aspects of energy transition risk for Enbridge Gas, summarized below in Figure 9, along with LEI comments associated with each aspect.

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[22] While S&P's credit rating for EGD moved to BBB+ in 2015/2016, this was primarily due to the rating downgrade of the parent, Enbridge Inc., and not EGD itself in these two years. S&P continued to maintain EGD's standalone credit profile for EGD at 'a-' for 2015/2016. With regards to credit rating for 2015 and 2016, S&P's stated: *there are insufficient insulating factors to achieve ratings separation between EGD and its parent, based on our criteria, so the final rating on the subsidiary is linked to that on Enbridge, resulting in a negative one-notch impact.* Source: OEB. EB-2022-0200. Exhibit I.1.8-STAFF-14. Attachment 13. March 8th, 2023. Pages 21 and 29 of 39.

[23] Alberta Utilities Commission. *Decision 20622-D01-2016 - 2016 Generic Cost of Capital*. October 7, 2016.

[24] S&P Global. What is Energy Transition? February 24th, 2020.

[25] OEB. EB-2022-0200. Exhibit 5: Cost of Capital Overview. Tab 3; Schedule 1; Attachment 1. Page 19 of 164. October 31st, 2022.

Figure 9. Concentric's analysis of business risks from energy transition

Business risks from energy transition	Concentric's view	LEI comments
Change in policy and regulatory environment	• Significant increase in risk from aggressive policies at local, provincial / state and federal levels in North American jurisdictions (by governments and regulators) • Such policies focus on transitioning the energy system away from fossil fuels at a relatively rapid pace	• Energy transition is a more material concern for Enbridge Gas compared to 2018 • However, the impact of such risks is more manageable for larger gas LDCs like Enbridge Gas, relative to smaller gas LDCs • The transition is expected to play out over multiple decades, which provides Enbridge Gas some time and predictability to prepare and mitigate the risks, while opening up new opportunities
Uncertainty in viability of alternatives to natural gas	• Enbridge Gas has identified two alternative fuels that can replace natural gas – hydrogen and Renewable Natural Gas ("RNG") • Both alternatives face barriers to scaling up for commercial use • Viability of alternatives is uncertain over the long-term	• Enbridge Gas operates in a favourable policy and regulatory environment with respect to identified alternatives • Enbridge Gas will likely receive favourable financing terms for pilot projects for alternatives as they are included in the regulatory rate base • However, uncertainties exist with respect to trajectory of cost declines and whether the alternatives can be competitive with electric heat pumps
Volumetric risk from a 'death spiral' scenario	• Rising costs and cheaper alternatives may lead to an accelerating and self-reinforcing decline in number of customers served, leading to a 'death spiral scenario'	• Such scenarios are unlikely to happen in practice • Enbridge Gas' investors have not publicly expressed significant concern about such a scenario
Operational risk from permitting issues	• Increasing opposition to natural gas makes it more difficult, costly, and time-intensive to construct and permit new facilities • Concentric gives specific examples of Enbridge Gas being impacted by such opposition	• LEI finds no evidence that operational risks related to permitting have increased since 2018 • In the last 5 years, energy transition related concerns have not been a major factor in denial of pipeline approvals sought by Enbridge Gas

Stranded assets	• Enbridge Gas has average asset life of multiple decades, which could become 'stranded' due to energy transition
	• The solutions for managing stranded asset risk such as accelerated depreciation tend to increase customer rates
		• Stranded asset risks have increased compared to 2018 but some of the risk can be mitigated as:
		  ○ Enbridge Gas operates in a supportive regulatory environment
		  ○ its proposed alternatives to natural gas utilize its existing assets
		  ○ there are other lower cost options available to manage stranded asset risks compared to accelerated depreciation
		• However, considering average asset life of around 25 years, there is slightly higher stranded asset risk compared to 2018

Going concern risk	• Enbridge Gas may cease to be a going concern as it may not be able to engage in the distribution of natural gas over the long-term due to energy transition	• There continues to be a liquid market for shares of LDCs • Unlikely that such risks will be a factor by 2028 as Enbridge Gas operates a near-monopoly regulated utility business

Source: OEB. EB-2022-0200. Exhibit 5: Cost of Capital Overview. Tab 3; Schedule 1; Attachment 1. Page 19 of 164. October 31st, 2022.

Note: Concentric also provides a European case study as an example of a region that is "*further along in the Energy Transition [and] can serve as instructive examples of what is to come for regions that are further behind.*" LEI notes that the dynamics of the energy transition are quite different from those in North America, and provide limited insight into the future of gas utilities in North America. Gas is significantly more expensive in Europe,[26] and Europe produces almost no natural gas whereas it is plentiful in North America, and the political dynamics are quite different. Furthermore, from a security of supply perspective, the European experience shows that natural gas remains a critical part of the energy supply portfolio. In addition, Europe has included natural gas in some definitions of "green."[27]

[26] The price of Dutch Title Transfer Facility ("TTF") natural gas, a leading European benchmark, has fallen significantly to pre-Russian invasion levels observed in February 2022, however, it still remains approximately 3 times higher than the prices observed in January 2021, and approximately 4.5 times higher than the average prices observed in 2019. The natural gas prices in North America are closer to their long-term averages; for example, the natural gas price of $5.2/MMBtu as of December 30th, 2022 at Dawn Hub in Ontario is lower than the 20-year average of $5.6/MMBtu, but higher than the 10-year average of $4.4/MMBtu. Source: The New York Times. *Natural Gas Prices in Europe Fall to Pre-Invasion Levels*. January 3rd, 2023; S&P Global Intelligence.

[27] Bloomberg. EU Lawmakers Remove Last Hurdle to Label Gas, Nuclear as Green. July 6th, 2022.

LEI has analyzed each of these aspects further below.

Change in policy and regulatory environment:

LEI acknowledges that there has been a shift in policy making towards energy transition goals over the last five years. For instance, the introduction of a carbon charge in 2019 by the Canadian government has resulted in increasing natural gas prices for consumers. Enbridge Gas estimates that its consumers could pay a carbon charge of 26.69 cents/m^3 by 2028 (relative to a carbon charge of 3.91 cents/m^3 in 2019 and 12.39 cents/m^3 in 2023).[28,29]

Separately, the Canadian government has introduced incentives of up to $5,000 for installation of ground source and air source heat pumps for space heating.[30] Under International Energy Agency's ("IEA's") scenario that assumes supportive government policies for heat pumps, it estimates global capacity of heat pumps to increase from 1,000 GW in 2021 to nearly 2,600 GW by 2030.[31] Based on a survey conducted in September 2022, BC Hydro estimates that natural gas furnace costs around $731/year to operate for British Columbians, compared to $642/year for an electric heat pump.[32,33]

LEI believes that government policies will have an asymmetrical impact on smaller gas local distribution companies ("LDCs") by 2028. Enbridge Gas is the largest gas LDC in Canada and one of the largest in North America, serving about 3.9 million consumers with 27.4 billion m^3 of gas sales volume in 2022.[34,35] It is unlikely that Enbridge Gas will see a significant erosion in number of consumers served before 2028. In fact, Enbridge Gas has projected a steady growth in consumers between 2023 and 2028 in this application.[36] In addition, the carbon charge is being stepped up gradually, and on a predictable timeline, i.e., an annual increase of $15 per tonne between 2023 and 2030.[37] This gives Enbridge Gas some clarity about the policy pathway and time to mitigate the risks.

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[28] Enbridge Gas. Federal Carbon Charge. Accessed on 14th March, 2023.

[29] The carbon charge in 2023 is ~22% of the total bill for a typical residential customer in Ontario (assuming gas usage of 2,200 m^3 per year). For reference, a typical residential customer in Union South Rate Zone pays an annual amount of ~$1,217/year based on April 2023 rates, of which carbon charge is ~$273/year. Source: OEB; LEI's calculations.

[30] Government of Canada. Eligible retrofits and grant amounts. Accessed on March 21st, 2023.

[31] IEA. The Future of Heat Pumps. November 2022. Page 11.

[32] BC Hydro. Bringing the heat: British Columbians concerned over energy costs, unaware that going all in on gas does not make dollars or sense. September 2022.

[33] Similar results may not apply in Ontario given differences in electricity rates.

[34] OEB. EB-2022-0200. Exhibit I.1.8-STAFF-14. Attachment 5. March 8th, 2023.

[35] Enbridge. *Gas utilities and storage*. Accessed on March 26th, 2023.

[36] OEB. EB-2022-0200. Exhibit I.5.3-STAFF-215. March 8th, 2023.

[37] Government of Canada. Update to the Pan-Canadian Approach to Carbon Pollution Pricing 2023-2030. Date modified: 2021-08-05.

The Ontario government has also noted the supportive role of natural gas in the near-term. It directed the Independent Electricity System Operator ("IESO") in October 2022 to acquire 4,000 MW of new electricity generation including up to 1,500 MW of natural gas generation.[38] The IESO has emphasized that *"[w]ithout a limited amount of new natural gas in the near term the IESO would be reliant on emergency actions such as conservation appeals and rotating blackouts to stabilize the grid."*[39]

Separately, Concentric has highlighted the risk arising from 48 municipalities in Ontario declaring climate emergencies. Enbridge Gas states that, although it does not track customer additions by municipality, new customer additions in those municipalities collectively increased from 44,194 in 2019 to 45,817 in 2022.[40] It also states that it *"has not been denied a franchise agreement or an application to connect customers or increase capacity in these municipalities since 2019"* however *"has noted increased opposition to gas infrastructure and services from municipalities in the process of renewing franchise agreements."* The claim about increased opposition to gas infrastructure and services from Ontario municipalities cannot be reconciled with the fact that no application to connect new customers has been denied for any of the aforementioned municipalities for reasons of decarbonization or energy transition.

While LEI acknowledges that energy transition is a significant concern for Enbridge Gas in the coming decades, the transition is expected to play out over multiple decades, which provides Enbridge Gas time to prepare and mitigate the risks while opening up new opportunities. Green hydrogen, which is one of the future alternatives to natural gas identified by Enbridge Gas, has seen significant policy support in North American jurisdictions (see discussion in sub-section below). Further, it is unlikely that Enbridge Gas will face significant difficulties in financing new gas infrastructure between 2024 and 2028 owing to a favorable policy and regulatory environment, with a stable outlook for the near-term from credit rating agencies.

Overall, LEI agrees that there is an increase in risk for Enbridge Gas from changes in the policy environment despite its advantages from being a large utility operating within a relatively favorable regulatory environment.

Uncertainty in viability of alternatives to natural gas:

Enbridge Gas has identified two alternative fuels that can replace natural gas and be compliant with the net-zero emission goals – hydrogen and Renewable Natural Gas ("RNG").[41] Based on LEI's assessment, there are uncertainties about viable alternatives to natural gas from an investor's perspective, particularly with regards to trajectory of fuel costs for hydrogen and RNG over the next decade. As discussed earlier, there are also significant price pressures in the market

[38] Ministry of Energy - Ontario Newsroom. Ontario Building More Electricity Generation and Storage to Meet Growing Demand. October 7th, 2022.

[39] Ibid.

[40] OEB. EB-2022-0200. Exhibit I.5.3-STAFF-198. Page 2 of 2. March 8th, 2023.

[41] OEB. EB-2022-0200. Exhibit 5: Cost of Capital Overview. Tab 3; Schedule 1; Attachment 1. Page 19 of 164. October 31st, 2022.

from heat pumps as alternatives to natural gas. Heat pumps are expected to be cheaper and more efficient than hydrogen based space heating.[42,43]

Having noted the above, Enbridge Gas is operating in a supportive policy and regulatory environment with respect to hydrogen and RNG. For instance, the Ontario Ministry of Energy published a plan to accelerate and sustain a low-carbon hydrogen economy in 2022.[44] The plan identifies RNG as a critical low-carbon fuel to meeting the province's environmental goals.[45] In the 2023 budget, the Canadian government has also proposed an investment tax credit for clean hydrogen production ranging from 15% to 40% of eligible project costs, depending on carbon intensity of production technique.[46]

In addition, the US Department of Energy published a detailed pathway to make clean hydrogen commercially viable by 2030.[47] As well, an assessment made in 2019 on the RNG potential in the US estimated that about 1,650 trillion Btu to 4,510 trillion Btu of RNG could be produced annually by 2040 (for reference, the report highlights that 10-year average (2009-2018) of residential natural gas consumption is 4,846 trillion Btu).[48]

It is worth noting that Enbridge Gas has sought capital funding approval for zero carbon alternatives, such as $8.9 million included within the system reinforcement spend of $105.1 million for hydrogen blending in the 2024 test year. Further, the OEB-approved pilot project for injecting hydrogen gas into the existing natural gas network is already operational.[49]

Enbridge Gas has also proposed funding for development of low or zero carbon technologies other than hydrogen and RNG, including funding for commercializing carbon capture, utilization and storage ("CCUS").[50] While risks involved in financing such pilot projects exist, they are potentially lower for a regulated utility such as Enbridge Gas, as such assets are included in the approved regulatory rate base, and the associated costs are recovered through rates. Enbridge

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[42] Bloomberg. Forget Gas and Hydrogen. Your Next Boiler Should Be a Heat Pump. November 25th, 2021.

[43] Hydrogen science coalition. Hydrogen for heating? A comparison with heat pumps (Part 1). April 15th, 2022.

[44] Ontario Ministry of Energy. Ontario's Low-Carbon Hydrogen Strategy. Published: April 7th, 2022; Updated: January 25th, 2023

[45] Ibid.

[46] Government of Canada. Budget 2023. A Made-In-Canada Plan: Affordable Energy, Good Jobs, and a Growing Clean Economy. March 2023. Table 3.1.

[47] US Department of Energy. Pathways to Commercial Liftoff: Clean Hydrogen. March 2023.

[48] American Gas Foundation. Renewable Sources of Natural Gas: Supply and Emissions Reduction Assessment. December 2019. Page 62.

[49] Enbridge Inc. Clean hydrogen enters the Markham energy mix. January 13th, 2022.

[50] OEB. EB-2022-0200. Exhibit 1, Tab 10, Schedule 7. Page 8 of 12 to page 9 of 12. October 31st, 2022.

Inc., the parent company of Enbridge Gas, has also explored the possibility of using carbon offsets for residual carbon emissions in order to reach its 2050 net-zero targets.[51]

Overall, despite policy and regulatory support, LEI acknowledges that there are uncertainties currently about the viability of hydrogen and RNG as alternatives to natural gas for space heating, particularly with regard to their competitiveness with electric heat pumps.

Volumetric risk from a 'death spiral' scenario:

Concentric states that increasing costs from energy transition may create a "death spiral" scenario in the long-term (Concentric has defined 'long-term' as the period after 2028), wherein the rates on existing customers rise when costs for Enbridge Gas rise, which increases the costs further for remaining customers, leading to an accelerating and self-reinforcing decline in number of customers served.[52,53] It also states that this risk may be compounded by non-uniform decline in customer base across different customer classes. Concentric has presented illustrative scenarios in which gradually declining demand plays out over the next three decades.[54]

LEI believes that a "death spiral" scenario, as described by Concentric, is unlikely to happen in practice. The scenario is presented with an implicit assumption that gas LDCs such as Enbridge Gas would be powerless to address such a scenario over a timeframe of decades, which LEI considers is not a valid assumption, particularly as gas LDCs are already considering alternative zero or net zero carbon technologies to comply with the energy transition goals.

A recent report published by the Canadian Gas Association with respect to investor expectations on North American natural gas utilities concluded that "*…investors are still confident that gas utilities are valuable investments… Because natural gas is currently a low-cost energy resource without an equally low-cost and reliable replacement, the investment community views gas utilities as a good investment target if they have a well communicated and feasible decarbonization and energy transition plan*".[55] This is consistent with Enbridge Gas' statement that "*[n]either equity or debt investors, nor the analysts covering Enbridge equity or debt, have indicated directly to Enbridge Inc. or Enbridge Gas a concern with a potential death spiral.*"[56]

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[51] Guidehouse (prepared for Enbridge Inc.). Pathways to Net Zero Emissions for Ontario. June 2022. Page 42.

[52] OEB. EB-2022-0200. Exhibit 5: Cost of Capital Overview. Tab 3; Schedule 1; Attachment 1. Page 38 of 164. October 31st, 2022.

[53] OEB. EB-2022-0200 Exhibit I.5.3-STAFF-208. March 8th, 2023.

[54] Ibid.

[55] American Gas Association and Canadian Gas Association. Investor Expectations on North American Natural Gas Utilities. July 12th, 2022.

[56] Ibid.

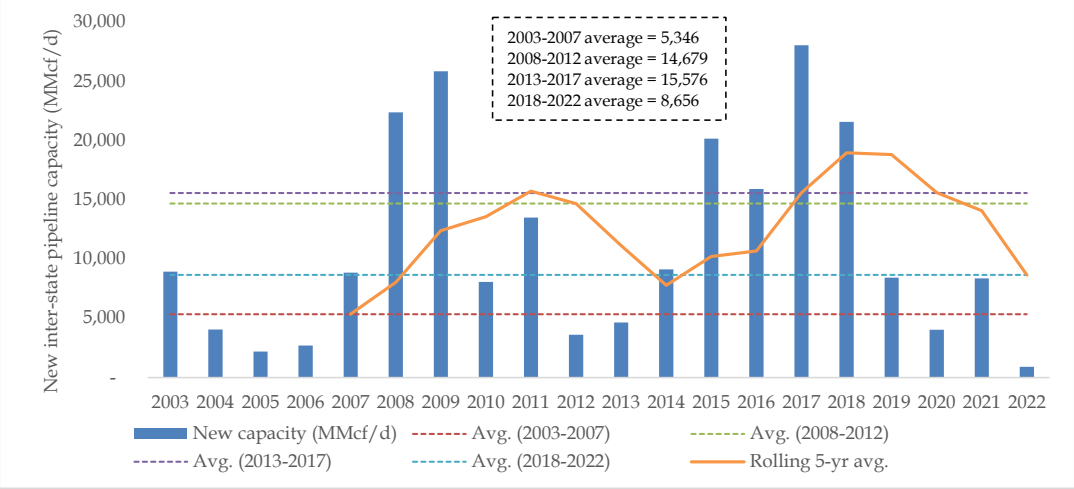
Additionally, Enbridge Gas projects a steady growth in number of customers served and sales volume between 2022 and 2028 (i.e., Compound Annual Growth Rate or "CAGR" of: 1% for customers served; and 0.9% for sales volumes).[57]

Operational risk from energy transition:

Operational risk as discussed here specifically refers to increased difficulties in permitting and constructing natural gas based infrastructure (such as gas pipelines) due to increased stakeholder opposition related to energy transition.[58]

LEI finds that there has been a reduction in annual natural gas pipeline additions observed in the US in the last 5 years. Between 2018 and 2022, new pipeline capacity additions averaged 8,656 MMcf/d annually compared to the annual average of 15,576 MMcf/d observed between 2013 and 2017 (see Figure 10).

Figure 10. New inter-state pipeline capacity added in the US from 2003 to 2022 (million cubic feet per day or MMcf/d)



Source: US Energy Information Administration (EIA)

However, the reduction in pipeline capacity additions is partially explained by the lower demand growth outlook for natural gas, instead of permitting issues. For instance, the reference scenario in EIA's 2023 annual energy outlook forecasts ~1.6% annual decline in US natural gas consumption by 2030 (relative to 2022 natural gas consumption).[59]

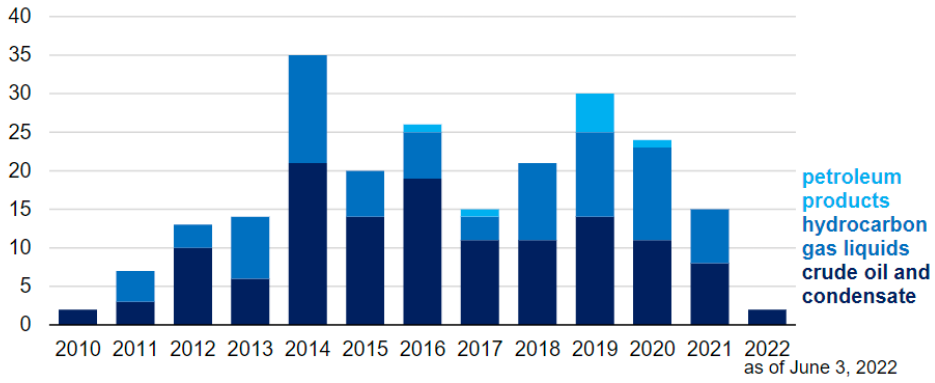
[57] OEB. EB-2022-0200 Exhibit I.5.3-STAFF-215. March 8th, 2023.

[58] The report discusses operational risk more generally later in Section 3.1.3.

[59] EIA projects US natural gas consumption to steadily increase thereafter, resulting in an overall projected annual decline of only ~0.2% between 2022 and 2050, further emphasizing the unlikelihood of the death spiral scenario, discussed earlier. Source: EIA. Annual Energy Outlook 2023. March 16th, 2023. Table 13.

Per EIA data, this trend of reduced additions in pipeline capacity is not visible in completion of US petroleum liquids pipeline projects, which includes pipelines for petroleum products, hydrocarbon gas liquids and crude oil (see Figure 11).[60]

Figure 11. US petroleum liquids – number of pipeline projects completed (2010 – June 2022)



Source: US Energy Information Administration (EIA)

In addition, renewable energy projects and inter-state transmission projects take roughly four years on average to obtain the necessary approvals in the US.[61] As well, a transmission line was recently approved after 15 years primarily because of delays associated with environmental review.[62] As such, there is limited evidence to suggest that long approval delays are unique to natural gas infrastructure projects.

The examples of specific impacts on Enbridge Gas provided by Concentric mostly relate to objections from intervenors to proposed pipeline projects. There is no indication that the OEB rejected the projects primarily due to energy transition related concerns. With regards to rejection of the pipeline replacement project in Ottawa by the OEB, the OEB stated that the primary reason for denying the application was that Enbridge Gas did not adequately demonstrate that existing pipeline integrity is compromised. As such, the OEB decided that pipeline replacement was not required at the time.[63]

[60] EIA. Two new U.S. crude oil pipeline projects have been completed this year. June 22nd, 2022.

[61] The New York Times. The U.S. Has Billions for Wind and Solar Projects. Good Luck Plugging Them In. February 23rd, 2023.

[62] Reason. It Took 15 Years for the Feds to Approve a 700-Mile Electric Line. April 17th, 2023.

[63] The OEB. EB-2020-0293. Decision and Order. May 3rd, 2022. Page 3.

Stranded asset risks

A stranded asset refers to an asset that is retired before its depreciable useful life, because the revenue generated from such assets is insufficient to justify the costs of keeping them operational. The undepreciated cost of the asset at the time of retirement is referred to as stranded.

As of 2021, Enbridge Gas' assets have a weighted average useful life of ~25 years.[64] While stranded asset risk is a viable consideration related to energy transition, the risk can be anticipated, and at least partially be mitigated. Credit rating agencies have also indicated the same. For instance, Moody's states that despite the risk of stranded assets, supportive regulation is likely to help natural gas utilities avoid stranded asset risk.[65]

Further, accelerated depreciation rates, which Concentric indicates will increase consumer rates, is not the only solution to manage assets at risk of being stranded. The Rocky Mountain Institute ("RMI") discussed four lower cost refinancing mechanisms for managing such assets, which involve variations of refinancing remaining existing debt with cheaper debt through securitization and other measures.[66] As of May 2022, eleven US states have passed legislation that allow some form of securitization for retiring coal assets.[67,68] It is reasonable to expect that retirement of natural gas based assets (if needed) may be managed in a similar manner. Furthermore, the alternative technologies being considered by Enbridge Gas such as hydrogen, RNG and CCUS, can utilize existing assets (with potential modifications).[69] This reduces the risk of stranded assets from energy transition.

Overall, with respect to stranded asset risk, while some of the risks can be anticipated and mitigated, when considering an investment time horizon of around 25 years, LEI believes that there is an increase in stranded asset risk, as investors take long-term risks into consideration when making investment decisions today.[70]

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[64] LEI has estimated the average useful life of ~25 years, utilizing weighted average depreciation rate of 3.7% (provided by Enbridge Gas) using a straight line depreciation method. Source: OEB. EB-2022-0200. Exhibit 4: Operating Expenses Overview. Tab 5; Schedule 1; Attachment 3. Page 28 of 28. October 31st, 2022.

[65] Moody's Investors Service. Sector In-Depth: Shifting Environmental Agenda Raise Long-Term Credit Risk for Natural Gas Investments. September 30th, 2020.

[66] RMI. How To Retire Early: Making Accelerated Coal Phaseout Feasible and Just. June 2020.

[67] RMI. Securitization in Action: US States Continue to Retire Coal and Reduce Electricity Rates. May 24th, 2022.

[68] Although unlikely, LEI acknowledges that securitization for retiring stranded assets is unlikely to work if there are no/few remaining consumers on a network.

[69] US Department of Energy. Office of Energy Efficiency and Renewable Energy. Hydrogen Pipelines. Accessed on March 21st, 2023.

[70] A recent article from the Wall Street Journal notes that Dominion Energy Inc. is considering selling its gas-distribution companies serving North Carolina, Ohio and parts of the Western US amidst uncertainty regarding future of natural gas LDCs. The article particularly references utilities considering the potential risk associated with

Going concern risks

Due to energy transition, Concentric states that Enbridge Gas may not be able to engage in the provision of its main business enterprise: the distribution of natural gas.[71] LEI notes that Enbridge Gas' business is the provision of the services natural gas provides (e.g., space heating services to its customers and process heating for industrial customers),[72] which may not be exclusively dependent on natural gas as a fuel over time. This is also evident in alternative fuels identified by Enbridge Gas. As such, energy transition need not pose an existential threat to gas LDCs, given proactive management and a supportive regulatory environment.

The going concern risk for Enbridge Gas is currently minimal. Enbridge Gas has a near-monopoly in natural gas distribution in Ontario, with a market share of ~99.7% based on gas sales volumes in 2021.[73,74] Further, Concentric has not provided any specific examples of investors concerned over going concern risk for Enbridge Gas.

Summary of energy transition risk

- Energy transition risk for Enbridge Gas is currently higher relative to 2017/2018. However, the impact is muted for larger gas LDCs like Enbridge Gas, relative to smaller gas LDCs.
- There are uncertainties about the viability of hydrogen and RNG as alternatives to natural gas for space heating, particularly due to unknowns with regards to their competitiveness with electric heat pumps.
- The risk of Enbridge Gas' assets being stranded has increased, although this risk is partially mitigated by a supportive regulatory environment and potential for alternatives to utilize existing assets.
- LEI sees limited near-term risks from a 'death spiral scenario', operational risks and risk of Enbridge Gas no longer being a going concern.

stranded assets. However, despite the uncertainties, there are recent examples of successful sale of natural gas systems (noteworthy examples include AltaGas' sale of Enstar, Southwest Gas' sale of MountainWest and Dominion Energy's sale of Hope Gas).

[71] According to Concentric, although the risk of no longer being a going concern is a longer-term risk, investors factor such risks into their decision making today as Enbridge Gas' investments have a long-term planning horizon. Sources: OEB. EB-2022-0200. Exhibit 5: Cost of Capital Overview. Tab 3; Schedule 1; Attachment 1. Page 45 of 164. October 31st, 2022; OEB. EB-2022-0200 Exhibit I.5.3-STAFF-212. Page 2 of 2. March 8th, 2023.

[72] Enbridge Gas. Process Heating. Accessed on April 15th, 2023.

[73] OEB. Natural gas and electricity utility yearbooks. Natural gas distributor yearbook – 2021.

[74] About 95% of Ontario consumers choose to buy natural gas from their utility (Enbridge Gas or EPCOR). Although natural gas marketers serve the remaining 5% of Ontario consumers, the commodity is still delivered by one of the two utilities. (Source: OEB - Overview of energy sector)

3.1.2 Volumetric risk

Volumetric risk refers to the uncertainty in demand and consumer additions over the forecasting period, which may increase the likelihood of a forecasting error. A significant forecasting error may lead to material under (or over) recovery of revenue.

LEI believes that the volumetric risk for Enbridge Gas has not changed materially compared to 2017/2018. The advantages from amalgamation of EGD and Union Gas have meaningfully reduced volumetric risks, however these are partially offset by the uncertainties in demand towards the latter half of this decade.

In managing volumetric risk, absolute numbers for customers and sales volumes matter more than per capita consumption. A similar magnitude of forecasting error (in absolute terms) has around half the impact for the larger amalgamated entity compared to EGD and Union Gas individually. For instance, a forecasting error of 1 billion m^3 of sales would have affected 8.4% and 7.4% of sales volume for EGD and Union Gas respectively in 2018.[75] However, it only would have affected 3.6% of Enbridge Gas' sales volume in 2022.[76] The volatility (represented by standard deviation) observed in sales volume growth from 2019 to 2022 (i.e. post-amalgamation) is slightly lower compared to the volatility observed from 2012 to 2018, and similar for customer growth (see Figure 12 and Figure 13).

Figure 12. Customer growth and sales volume growth for EGD and Union Gas (2012-2018)

Parameter		2012	2013	2014	2015	2016	2017	2018	Average	Standard deviation
EGD										
Customers	**Total**	1,994,903	2,030,003	2,063,838	2,094,681	2,124,683	2,156,668	2,184,759	2,092,791	63,157
	Annual growth (%)		1.8%	1.7%	1.5%	1.4%	1.5%	1.3%	1.5%	0.1%
Sales	**Volume (mil. m^3)**	11,283	11,271	11,420	11,339	11,203	11,525	11,881	11,417	213
	Annual growth (%)		-0.1%	1.3%	-0.7%	-1.2%	2.9%	3.1%	0.9%	1.7%
Union Gas										
Customers	**Total**	1,367,886	1,387,408	1,407,190	1,426,862	1,446,779	1,466,223	1,486,770	1,427,017	39,563
	Annual growth (%)		1.4%	1.4%	1.4%	1.4%	1.3%	1.4%	1.4%	0.0%
Sales	**Volume (mil. m^3)**	14,401	14,338	14,160	13,705	13,554	12,964	13,488	13,802	485
	Annual growth (%)		-0.4%	-1.2%	-3.2%	-1.1%	-4.4%	4.0%	-1.1%	2.6%

Source: OEB. EB-2022-0200 Exhibit I.5.3-STAFF-215. March 8th, 2023.

[75] LEI utilized the data for sales volume provided by Enbridge Gas in 'Exhibit I.5.3-STAFF-215', specifically the actual sales volume for EGD and Union Gas in 2018 and Enbridge Gas' actual sales volume in 2022.

[76] Ibid.

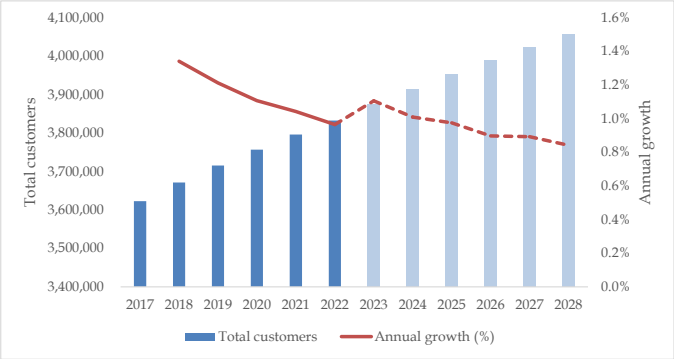
Figure 13. Customer growth and sales volume growth for Enbridge Gas (2019-2022)

Parameter		2019	2020	2021	2022	Average	Standard deviation
Customers	Total	3,716,073	3,757,241	3,796,456	3,833,111	3,754,882	57,109
	Annual growth (%)	1.2%	1.1%	1.0%	1.0%	1.1%	0.1%
Sales	Volume (mil. m^3)	26,014	25,892	26,469	27,438	26,236	695
	Annual growth (%)	2.5%	-0.5%	2.2%	3.7%	2.0%	1.5%

Source: OEB. EB-2022-0200 Exhibit I.5.3-STAFF-215. March 8th, 2023.

Variance accounts to mitigate volumetric risk continue to exist. 'Average Use True-up Variance Account' in the EGD rate zone and the 'Normalized Average Consumption Account' in the Union Gas rate zones currently account for variance in revenue and costs.[77] Enbridge Gas has proposed to harmonize these accounts into a single 'Volume Variance Account' in this application.[78,79] Enbridge Gas also utilizes various demand side management ("DSM") variance accounts, which are in place to manage variances from expected efficiency improvements.[80]

Figure 14. Enbridge Gas' actual and projected growth for number of consumers



Source: OEB. EB-2022-0200 Exhibit I.5.3-STAFF-215. March 8th, 2023.

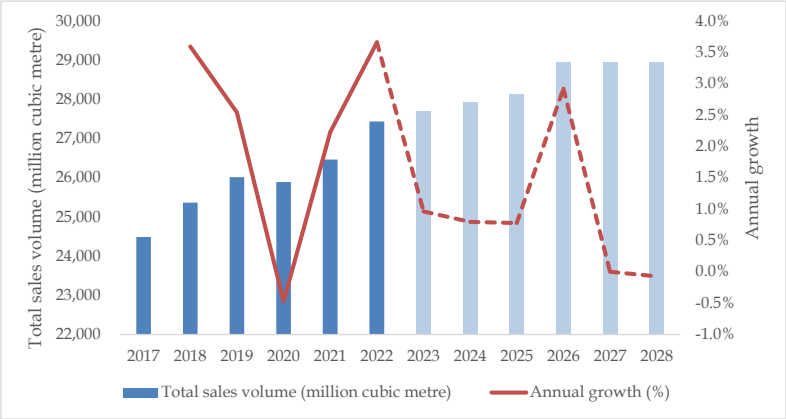
[77] OEB. EB-2022-0200. Exhibit 9: Deferral and Variance Account Overview, Tab 1, Schedule 1, Attachment 1. October 31st, 2022.

[78] OEB. EB-2022-0200. Exhibit 9: Deferral and Variance Account Overview, Tab 1, Schedule 1, Attachment 2. Page 1 of 1. October 31st, 2022.

[79] Enbridge Gas has confirmed that Volume Variance Account (if approved) *will include the volume variance due to weather in addition to the volume variance due to changes in the actual normalized average use relative to what underpins rates*. Source: OEB. EB-2022-0200. Exhibit I.9.1-STAFF-252. March 8th, 2023.

[80] OEB. EB-2022-0007. 2020 Demand Side Management (DSM) Deferral and Variance Account Disposition Application. January 14th, 2022.

Figure 15. Enbridge Gas' actual and projected growth for sales volumes



Source: OEB. EB-2022-0200 Exhibit I.5.3-STAFF-215. March 8th, 2023.

The projected sales volume growth by Enbridge Gas between 2023 and 2028 (CAGR of 0.9%) is lower than the growth observed during the period between 2018 and 2022 (CAGR of 2.3%). The number of customers and sales volumes are projected to grow at a relatively steady pace until 2028 (see Figure 14 and Figure 15).[81]

Separately, Enbridge Gas has sought approval for straight fixed variable with demand ("SFVD") rate design in this application.[82] The proposed rate design includes a separate customer charge (based on Enbridge Gas' fixed costs), and a demand charge (based on Enbridge Gas' variable costs). If approved, LEI agrees with Concentric that this will reduce risks for Enbridge Gas.

Having noted the above, uncertainties in demand increase slightly towards the latter half of the decade as greener alternatives for space heating become more cost competitive. The IEA expects the ***global demand*** for natural gas to decline 1.2% annually on average between 2021 and 2030 in a scenario where meaningful actions are taken globally to reach net-zero emissions by 2050.[83] This is slightly lower than EIA's projection of ~1.6% annual decline in US natural gas consumption by 2030 (relative to 2022 natural gas consumption), as discussed earlier;[84] and slightly higher than

[81] Considering the official projected population growth for Ontario (CAGR of around 1.4% between 2023 and 2028), it is possible for sales volumes to be higher than current projections. Source: Statistics Canada. Projected population, by projection scenario, age and sex, as of July 1 (x 1,000). Table: 17-10-0057-01 (formerly CANSIM 052-0005). Release date: 2022-08-22. Average CAGR of all available scenarios.

[82] OEB. EB-2022-0200. Exhibit 1, Tab 10, Schedule 4. Page 19 of 20. October 31st, 2022.

[83] IEA. World Energy Outlook 2022. October 2022. Page 329.

[84] EIA projects US natural gas consumption to steadily increase thereafter, resulting in an overall projected annual decline of only ~0.2% between 2022 and 2050. Source: EIA. Annual Energy Outlook 2023. March 16th, 2023. Table 13.

Canadian natural gas demand forecasted to decline at an average of 0.7% annually between 2021 and 2030.[85]

Summary of volumetric risk

- LEI believes that the volumetric risk for Enbridge Gas has not changed materially compared to 2017/2018.
- Volatility in growth of sales volumes post-amalgamation is lower for Enbridge Gas compared to volatility observed between 2012 and 2018.
- Variance accounts continue to exist to mitigate volumetric risk.
- If approved by OEB, the SFVD rate design will reduce risks for Enbridge Gas.
- The advantages from amalgamation are partially offset by the uncertainties in demand towards the latter half of this decade.

3.1.3 Operational risk

Operational risk refers to the uncertainties and hazards a company faces when it pursues its day-to-day business activities.[86] LEI's analysis indicates that operational risk for Enbridge Gas is slightly lower today compared to 2017/2018, primarily due to higher operating efficiencies from amalgamation. For instance, in the 2017 amalgamation application (EB-2017-0306), EGD and Union Gas analyzed the potential savings from amalgamation in O&M expenses.[87] They projected minimum cost savings of $350 million and maximum cost savings of $750 million over a 10-year period with potential capital investment of $50 million to $250 million for integration of systems and technology.[88]

DBRS also noted in its September 2022 rating report that the "*large customer base is one of the key factors allowing [Enbridge Gas] to achieve operating efficiency under the price-cap IR. Good synergy was realized in the past three years from the amalgamation of Enbridge Gas Distribution Inc. (EGD) with Union Gas Limited (Union Gas), and DBRS Morningstar expects significant synergy to be achieved through 2023.*"[89] It also notes that "*EGI's large customer base provides it with the size and scale to operate efficiently during the five-year price-cap IR plan. EGI's large size also allows it to maintain a good degree of flexibility with its capex planning.*"[90] It is reasonable to expect that the larger amalgamated entity is also more equipped to negotiate lower cost contracts, such as insurance contracts, and is more

[85] Source: Canada Energy Regulator.

[86] Investopedia. Operational Risk Overview, Importance, and Examples. Updated; January 16th, 2023.

[87] OEB. EB-2017-0306. Enbridge Gas Distribution Inc. and Union Gas Limited – MAAD Application – Application and Evidence. Exhibit B, Tab 1, Page 26 of 44. November 2nd, 2017.

[88] Ibid.

[89] OEB. EB-2022-0200. Exhibit I.1.8-STAFF-14. Attachment 5. Page 30 of 41. March 8th, 2023.

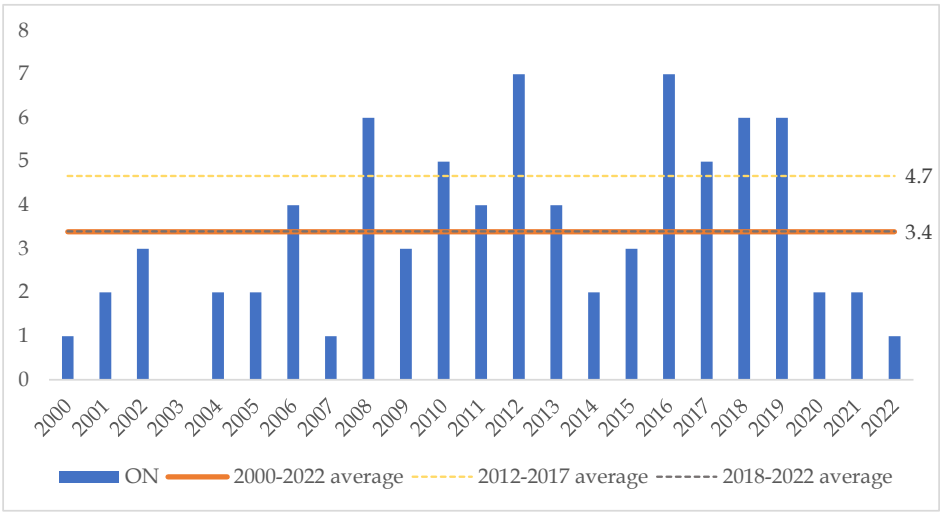
[90] Ibid.

equipped to manage the costs and complexities of large capital projects owing to economies of scale.

Concentric notes: "*other operational risks for Enbridge Gas have also increased since 2012, such as higher insurance costs, increased risk related to cyber-security attacks…*". Higher insurance costs and increased risks related to cyber-security attacks are not unique to Enbridge Gas. In fact, across industries, companies have been facing both higher insurance costs and higher risk of cyber-security attacks.[91,92] In addition, the OEB allows Enbridge Gas to recover costs associated with insurance and cyber-security measures.[93] Risks need to be assessed relative to firms of comparable risk. The relative risk for regulated entities such as Enbridge Gas on these two aspects is likely lower than other industries.

Concentric states that infrastructure for gas distribution companies is being affected by increasing severe weather risk. However, LEI's analysis (as illustrated in Figure 16) indicates that number of major weather events in Ontario over the 2018-2022 period (of ~3.4 events per year) is consistent with the long-term average (also ~3.4 events per year), and is less than the annual average observed between 2012 and 2017 (~4.7 events per year).

Figure 16. Number of major meteorological/geological events in Ontario (2000 – 2022)



Source: Public Safety Canada.

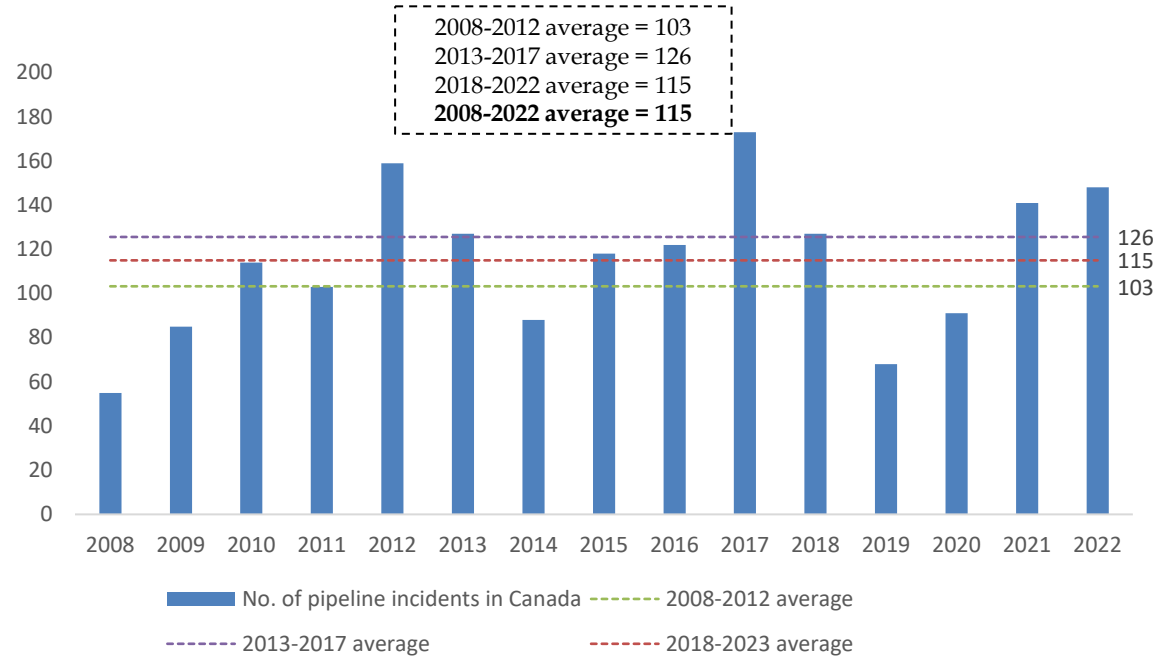
[91] A recent report found that 83% of organizations (surveyed across 17 countries and 17 industries) have had more than one data breach with average cost of a breach estimated as USD 4.35 million in 2022. Source: IBM. Cost of a Data Breach Report 2022. July 2022.

[92] A recent report found that global insurance prices increased by 9% in Q2 2022 (which was the 19th consecutive quarterly rise). Source: Deloitte. 2023 insurance outlook. September 2022. Page 6.

[93] OEB. EB-2022-0200. Exhibit 4: Operating Expenses Overview. October 31st, 2022.

Separately, LEI finds that number of pipeline incidents in Canada have not meaningfully changed compared to historical occurrences. The number of pipeline incidents in Canada averaged 115 in the last five years, which is similar to the long-term average between 2008 and 2022 (see Figure 17). As such , there is no evidence to indicate that Enbridge Gas' operational risks have increased.

Figure 17. Pipeline incidents[94] in Canada (2008 – 2022)



Source: Canada Energy Regulator. Pipeline Incident Data. Accessed on March 18th, 2022.

Overall, with regards to recovery of operating costs, the existing mechanism (i.e., Enbridge Gas' price cap IR mechanism since amalgamation) to recover operating costs is not meaningfully different compared to 2017, when EGD followed custom IR rate-setting mechanism and Union Gas followed price cap IR mechanism.[95,96]

[94] 'Incident' means an occurrence that results in: (a) the death of or serious injury to a person; (b) a significant adverse effect on the environment; (c) an unintended fire or explosion; (d) an unintended or uncontained release of LVP hydrocarbons in excess of 1.5 m^3; (e) an unintended or uncontrolled release of gas or HVP hydrocarbons (f) the operation of a pipeline beyond its design limits as determined under CSA Z662 or CSA Z276 or any operating limits imposed by the Regulator." Source: Onshore Pipeline Regulations

[95] OEB. EB-2017-0306 and EB-2017-0307. Decision and Order. Enbridge Gas Distribution Inc. and Union Gas Limited Application for Amalgamation and Rate-Setting Mechanism. August 30th, 2018. Page 3.

[96] OEB. EB-2022-0200. Exhibit 10: Incentive Rate-setting Mechanism, Tab 1, Schedule 1, Plus Attachment. Page 10 of 14. October 31st, 2022.

Summary of operational risk

- LEI believes that operational risk for Enbridge Gas has decreased. The larger amalgamated entity is more equipped to manage operating risks owing to operating efficiencies from economies of scale.
- The number of major meteorological/geological events and pipeline incidents have not meaningfully changed.
- The existing mechanism to recover operating costs is not meaningfully different.

3.1.4 Regulatory risk

LEI believes that regulatory risk has remained unchanged compared to 2017/2018. In the recent 2022 DBRS report, it classified Enbridge Gas' *low-risk regulated operations* as one of Enbridge Gas' strengths in its rating considerations.[97] This is similar to DBRS' assessment in 2018, when it considered the regulatory environment as one of the strengths for EGD and Union Gas.[98,99]

Concentric references the OEB's 2016 decision in EB-2016-0004, wherein qualified parties may compete for the right to serve areas, even if one utility already holds a franchise agreement or certificate with that municipality. It is relevant to note two key points: first, the OEB decision was already in effect in 2017, when the amalgamation was proposed (along with proposing the same equity ratio); and second, Enbridge Gas is well equipped to win bids to serve unserved areas, considering its size, qualifications and near-monopoly in Ontario with respect to market share.

Summary of regulatory risk

- No meaningful change.
- Credit rating agencies consider Enbridge Gas' regulatory environment as a strength (as they did for EGD and Union Gas in 2017/2018).

3.1.5 Key takeaways

LEI analysis indicates that there is a modest increase in business risks for Enbridge Gas, particularly due to increase in risks from energy transition. LEI finds no material change in volumetric and regulatory risk, and a modest decrease in operational risk, primarily due to the amalgamation of EGD and Union Gas. Figure 18 below summarizes LEI's findings associated with these risk factors.

[97] Ibid.

[98] OEB. EB-2022-0200. Exhibit I.1.8-STAFF-14. Attachments 5, 11 and 12. March 8th, 2023.

[99] Ibid.

Figure 18. LEI's summary of business risk factors for Enbridge Gas

Business risk	Summary	Change in risk
Energy transition risk	• Energy transition is a more material concern for Enbridge Gas compared to 2018. However, the impact of such risks is limited/ muted for larger gas LDCs like Enbridge Gas, relative to smaller gas LDCs • There are uncertainties about the viability of hydrogen and RNG as alternatives to natural gas for space heating, particularly due to uncertainties with regard to their competitiveness with electric heat pumps • Although some of the risks are reduced by a supportive regulatory environment and alternate opportunities being explored by Enbridge Gas mostly utilizing existing assets, stranded asset risks have slightly increased as investors typically consider an investment time horizon of decades • LEI sees no risks from a 'death spiral scenario', operational risks and risk of Enbridge Gas no longer being a going concern	Modest increase
Volumetric risk	• Amalgamation of EGD and Union Gas has meaningfully reduced volumetric risk • Volatility in customer growth and sales volume growth is slightly lower for Enbridge Gas compared to volatility observed from 2012 to 2018 • However, the advantages from amalgamation are partially offset by the uncertainties in demand towards the latter half of this decade • Variance accounts continue to exist specifically to mitigate volumetric risk	No change
Operational risk	• The larger amalgamated entity is more equipped to manage operating risks owing to operating efficiencies from economies of scale • Number of pipeline incidents in Canada have not meaningfully changed in the last five years compared to historical occurrences • The existing mechanism to recover operating costs is not meaningfully different compared to 2018	Modest decrease
Regulatory risk	• No meaningful change since 2018 • Credit rating agencies such as DBRS still consider the regulatory environment as a strength (as they did for EGD and Union Gas in 2018)	No change

It is notable that S&P, which assesses the business risks separately for Enbridge Gas, sees no increase in business risks since 2017 (see Figure 19).

Figure 19. Summary of Enbridge Gas' business risks assessed by S&P

Parameter	S&P report for EGD (Nov 20th, 2017)	S&P report for Union Gas (Feb 28th, 2017)	S&P report (Jan 2nd, 2019)	S&P report (Apr 3rd, 2020)	S&P report (Jan 19th, 2021)	S&P report (Feb 1st, 2022)	S&P report (Jul 21st, 2022)
Credit rating	A-	A-	A-	A-	A-	A-	A-
Business risk profile	Risk profile of '**excellent**' which "*reflects our view that the regulatory restriction and parent Enbridge Inc.'s strategy with respect to EGD will continue to preserve the utility's credit strength and are consistent with our view of insulation on a subsidiary*"	Risk profile of '**excellent**' – "*Based on our methodology, we rarely rate a utility higher than its parent. However, for Union, there are insulation measures in place that governs the company's financial and business activities to ensure operating sustainability*"	Risk profile of '**excellent**' which "*reflects our view of the OEB's regulatory framework, which underpins the utility's predictable and steady cash flow*"	Risk profile of '**excellent**' which "*continues to reflect our view of the OEB's regulatory framework, which underpins the utility's predictable and steady cash flow*"	Risk profile of '**excellent**' which "*continues to reflect our view of the OEB's regulatory framework, which underpins the utility's predictable and steady cash flow*"	Risk profile of '**excellent**' which "*reflects our view of OEB's regulatory framework, which underpins the utility's predictable and steady cash flow*"	Risk profile of '**excellent**' which "*reflects our view of the OEB's regulatory framework, which underpins the utility's predictable and steady cash flow*"
Country risk	Very low	Very low	Very low	Very low	Very low	Very low	Very low
Industry risk	Very low	Very low	Very low	Very low	Very low	Very low	Very low
Competitive position	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent

Note: S&P reaffirmed its credit rating of A- and business risk profile as 'excellent' for Enbridge Gas in its January 2023 assessment. Source: S&P Global Ratings.

Source: OEB. EB-2022-0200. Exhibit I.1.8-STAFF-14. Attachments 6, 13 and 14. March 8th, 2023.

3.2 Have Enbridge Gas' financial risks changed since the previous application?

The financial risks assessed in this section include the following: (i) analysis of Enbridge Gas' credit metrics and potential impact on rating; (ii) implications of ESG criteria in financing; (iii) role of inflation; and (iv) accessibility to debt markets.

3.2.1 Analysis of Enbridge Gas' credit metrics and potential impact on rating

An investment grade rating has implications for Enbridge Gas' cost of capital. If an investment grade rating is lost, the pool of investors allowed to invest can drop. An issuer is deemed "investment grade" based on the evaluation of both business and financial metrics. For example, S&P deems an overall rating of BBB- as the lowest investment grade by market participants.

An entity may achieve a BBB- rating with a financial risk profile of "highly leveraged", i.e., the worst score, but would require an "excellent" business risk profile rating (see Figure 20). Conversely, it is not possible to achieve a BBB- rating under the worst business risk profile, i.e.,

"vulnerable", regardless of the financial risk profile.[100] A meaningful change in an entity's perceived riskiness by credit rating agencies can result in a ratings downgrade and increase the cost of borrowing as well as access to capital markets for borrowing needs.

S&P's assessment for Enbridge Gas in July 2022 report is highlighted in Figure 20. Enbridge Gas currently has a credit rating of A- based on business risk profile of 'excellent' and financial risk profile of 'significant.

Figure 20. Matrix of business and financial risks and associated ratings

	Financial risk profile					
Business risk profile	**1 (Minimal)**	**2 (Modest)**	**3 (Intermediate)**	**4 (Significant)**	**5 (Aggressive)**	**6 (Highly leveraged)**
1 (Excellent)	AAA/AA+	AA	A+/A	A-	BBB	BBB-/BB+
2 (Strong)	AA/AA-	A+/A	A-/BBB+	BBB	BB+	BB
3 (Satisfactory)	A/A-	BBB+	BBB/BBB-	BBB-/BB+	BB	B+
4 (Fair)	BBB/BBB-	BBB-	BB+	BB	BB-	B
5 (Weak)	BB+	BB+	BB	BB-	B+	B/B-
6 (Vulnerable)	BB-	BB-	BB-/B+	B+	B	B-

Investment grade Below investment grade

Source: S&P Global Ratings. *Corporate Methodology: Ratios And Adjustments.* November 19, 2013; S&P Ratings Report for Enbridge Gas. February 1st, 2022. Page 11.

As summarized below in Figure 21 in Figure 22, according to DBRS and S&P's assessment, Enbridge Gas' financial risk profile has remained unchanged across all assessed metrics since 2017. The latest DBRS (September 2022) and S&P (January 2023) credit reports also maintained a 'stable' outlook for Enbridge Gas.

Figure 21. Summary of Enbridge Gas' financial risks assessed by DBRS

Parameter	DBRS report for EGD (Sep 20th, 2017)	DBRS report for Union Gas (Feb 16th, 2017)	DBRS report for EGD (Sep 14th, 2018)	DBRS report for Union Gas (Feb 14th, 2018)	DBRS report (Oct 1st, 2019)	DBRS report (Sep 29th, 2020)	DBRS report (Oct 5th, 2021)	DBRS report (Sep 27th, 2022)
Credit rating	A	A	A	A	A	A	A	A
Unsecured debentures & medium-term / senior unsecured notes	A	A	A	A	A	A	A	A
Commercial paper	R-1 (low)	R-1 (low)	R-1 (low)	R-1 (low)	R-1 (low)	R-1 (low)	R-1 (low)	R-1 (low)

[100] S&P Global Ratings. *Corporate Methodology: Ratios and Adjustments.* November 19, 2013

Figure 22. Summary of financial risks assessed by S&P

Parameter		S&P report for EGD (Nov 20th, 2017)	S&P report for Union Gas (Feb 28th, 2017)	S&P report (Jan 2nd, 2019)	S&P report (Apr 3rd, 2020)	S&P report (Jan 19th, 2021)	S&P report (Feb 1st, 2022)	S&P report (Jul 21st, 2022)
Credit rating		A-	A-	A-	A-	A-	A-	A-
Senior unsecured debentures		A-	A-	A-	A-	A-	A-	A-
Financial risk profile		Significant	Significant	Significant	Significant	Significant	Significant	Significant
Liquidity		Adequate	Adequate	Adequate	Adequate	Adequate	Adequate	Adequate
Commercial paper	Global scale	-	A-2	A-2	A-2	A-2	A-2	A-2
	Canada scale	A-1 (Low)	A-1 (Low)	A-1 (Low)	A-1 (Low)	A-1 (Low)	A-1 (Low)	A-1 (Low)

Note: S&P reaffirmed its credit rating of A-, financial risk profile as 'significant' and liquidity as 'adequate' for Enbridge Gas in its January 2023 assessment. Source: S&P Global Ratings.

Source: OEB. EB-2022-0200. Exhibit I.1.8-STAFF-14. Attachments 5, 11 and 12. March 8th, 2023; S&P Global Ratings.

LEI also considered the following key credit metric ratios that are observed across the two agency reports: (i) Debt/EBITDA, (ii) Funds from Operations ("FFO")/Debt, (iii) FFO/Interest, (iv) Cashflow from Operations ("CFO")/Debt, and (v) EBIT/Interest.[101,102] Figure 23 provides a description of these metrics and Figure 24 provides the assessment of these credit metrics for Enbridge Gas.

Figure 23. Description of credit metrics

Credit metric	Description
Debt/EBITDA	▪ Evaluates a company's ability to pay its debts ▪ A higher value suggests a longer time may be needed to pay debt, and thus is correlated with lower credit rating
FFO/Debt	▪ Assesses extent to which company is leveraged ▪ A lower value suggests higher leverage levels, and is correlated with lower credit rating
FFO/Interest	▪ Assesses the ability of a company to service its interest expenses ▪ A higher value suggests sufficient cashflows to service interest payments, and may support higher credit rating
CFO/Debt	▪ Assesses the leverage but evaluates the extent to which the company's operating cashflows can repay its debt obligations ▪ Like FFO/Debt, a lower value is correlated with a lower credit rating
EBIT/Interest	▪ Measures a company's earnings over its interest payments. ▪ A higher value suggests better financial health of the firm, and correlates to a higher credit rating

[101] S&P Global Ratings. *Corporate Methodology: Ratios And Adjustments*. November 19, 2013.

[102] DBRS Morningstar. *Methodology. Rating Companies in the Regulated Electric, Natural Gas and Water Utilities Industry*. September 2019

Notes: Key terms defined as follows:

"Debt" defined as total debt, including long-term and short-term borrowing.

Earnings before Interest, Taxes, Depreciation and Amortization ("EBITDA") defined as revenues minus operating expenses (excluding depreciation, amortization, and non-current asset impairment and impairment reversals).

Funds from operations ("FFO") represents a company's ability to generate recurring cash flows from operations (S&P Ratings defines it as EBITDA minus cash interest paid minus cash taxes paid).

"Interest" defined as total interest expense.

Cash from operations ("CFO") is also referred to as operating cash flow. This measure takes reported cash flows from operating activities (as opposed to investing and financing activities), and includes all cash interest received and paid, dividends received, and cash tax paid in the period.

Figure 24. Change in credit metrics for Enbridge Gas (2017-2023)

Credit Metric	Actual					Outlook	
	2017	2018	2019	2020	2021	2022	2023
Debt/ EBITDA (x)	6.4x	5.9x	5.8x	6.3x	6.2x	6.0x-6.5x	6.0x-6.5x
FFO/ Debt (%)	11.1%	13.0%	13.1%	11.3%	12.4%	11%-12%	11%-12%
FFO/ Interest (x)	3.5x	4.0x	4.2x	3.9x	4.3x	4.0x-4.5x	4.0x-4.5x
EBIT/Interest (x)	2.18x	2.57x	2.55x	2.36x	2.41x	-	-
CFO/Debt (%)	10.9%	12.3%	12.7%	12.1%	11.4%	-	-

Note: The ratios for 2017 are calculated by S&P and DBRS combining the financials reported by EGD and Union Gas separately. Sources: DBRS ratings report dated October 1st, 2019, S&P ratings report dated January 19th, 2021.

Sources: OEB. EB-2022-0200. Exhibit I.1.8-STAFF-14. Attachments 5, 6, 11, 12, 13 and 14. March 8th, 2023; DBRS Morningstar. *Methodology. Rating Companies in the Regulated Electric, Natural Gas and Water Utilities Industry.* September 2019; S&P Global Ratings. *Key Credit Factors for The Regulated Utilities Industry.* November 2013.

As seen above, there has been no significant change in actual credit metrics since 2017, and all credit metrics have improved in 2021 relative to 2017. With regards to potential for a negative rating change, in its July 2022 ratings report, S&P indicated that it could lower the ratings for Enbridge Gas if FFO to debt ratio approaches 10% with no prospects for improvement.[103] However, the same report projects a stable outlook for 2022 and 2023, making the prospect for a negative rating action highly unlikely over the near term.

DBRS also expects the credit metrics to improve modestly over the medium term as a result of rate base growth and synergy realization.[104] DBRS adds that it could take a negative rating action if there is an adverse regulatory change that would have a negative impact on Enbridge Gas'

[103] OEB. EB-2022-0200. Exhibit I.1.8-STAFF-14. Attachment 6. Page 48 of 57. March 8th, 2023.

[104] OEB. EB-2022-0200. Exhibit I.1.8-STAFF-14. Attachment 5. Page 30 of 41. March 8th, 2023.

business risk profile or if there is a significant deterioration of credit metrics on a sustained basis, but DBRS highlights that it *considers these scenarios unlikely*.[105]

Later in the report (in Section 5), LEI has performed forward looking credit metric analysis for the period from 2024 to 2028. LEI analysis indicates that Enbridge Gas' key credit metrics improve by 2028 under multiple ROE scenarios.

Summary of analysis of Enbridge Gas' credit metrics and potential impact on rating

- The credit ratings and key credit metrics have not changed meaningfully since 2017.
- The outlook for the near to medium term by credit rating agencies remains stable, minimizing the likelihood of a negative rating action.

3.2.2 Implications of ESG criteria in financing

Investors are increasingly applying non-financial ESG ("Environmental, Social, and Governance") factors as part of their analysis to identify material risks and growth opportunities.[106] However, the consensus regarding use of ESG metrics in evaluating investments is by no means complete. Recent months have seen substantial pushback. For instance, the state of Texas banned 348 ESG-related investment funds managed by companies such as BlackRock and UBS.[107] Separately, although vetoed by US President Biden, the US congress recently passed a bill seeking to overturn a Labor Department rule which made it easier for fund managers to consider ESG factors in their decision making.[108]

DBRS and S&P have considered ESG factors in their 2022 credit rating assessments for Enbridge Gas. DBRS reviews five environmental factors, seven social factors, and four governance factors in its assessment.[109] DBRS concluded that none of the sixteen ESG factors considered impacted the rating for Enbridge Gas.[110] S&P assesses ESG indicators on an alphanumeric scale ('1' indicates positive impact on rating and '5' indicates a very negative impact). It assessed the impact on Enbridge Gas' rating as E-2, S-2, and G-2 for environmental, social and governance

[105] Ibid.

[106] CFA Institute. ESG Investing and Analysis. Accessed on March 23rd, 2023.

[107] Axios. BlackRock, UBS and 348 ESG funds "banned" in Texas. August 25th, 2022.

[108] Reuters. Biden uses first veto to defend rule on ESG investing. March 20th, 2023.

[109] Environmental factors include: (i) emissions, effluents and waste; (ii) carbon and GHG costs; (iii) resource and energy management; (iv) land impact and biodiversity; and (v) climate and weather risks. Social factors include: (i) social impact of products and services; (ii) human capital and human rights; (iii) product governance; (iv) data, privacy and security; (v) occupational health and safety; (vi) community relations; and (vii) access to basic services. Governance factors include: (i) bribery, corruption and political risks; (ii) business ethics; (iii) corporate/transaction governance; and (iv) institutional strength, governance, and transparency (governments only). Source: OEB. EB-2022-0200. Exhibit I.1.8-STAFF-14. Attachment 5. Page 39 of 41. March 8th, 2023.

[110] Ibid.

factors respectively ('2' indicates neutral impact).[111] S&P also concluded that ESG factors have no material impact on the credit rating analysis for Enbridge Gas.[112,113]

Concentric states that, although ESG factors have not yet had a material impact on Enbridge Gas, these factors could result in such impacts in the future.[114] It is notable that Enbridge Inc. issued sustainability-linked bonds ("SLBs") in 2021 ($1 billion 12-year term senior note) which carried a coupon of 2.5%.[115] The SLBs includes a discount of 5 basis points if certain targets are achieved, including emission reduction targets; and a 50 basis points penalty if it fails to achieve those targets.[116] Concentric describes this as including *"asymmetrical risks and rewards"* i.e., higher risk compared to the rewards.[117]

LEI believes that the terms for SLBs are favourable, particularly because: (i) the key performance indicator ("KPI") associated with emission reductions ("KPI 1") has a target of 35% reduction of GHG emissions intensity by 2030 (relative to 2018 baseline) between 2018 and 2020,[118] and Enbridge Inc. has already reduced its GHG emissions intensity by 25% (prior to the issuance of SLBs);[119] and (ii) there are no intermediate targets for KPI 1 before 2030, making it unlikely to have any negative impact for the 2024-2028 period.

LEI believes that ESG factors are unlikely to negatively affect Enbridge Gas' credit ratings by 2028. On the contrary, in some ways Enbridge Gas is currently benefiting from the practice of incorporating ESG factors into investors' assessments, via favorable terms in SLB issuances.

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[111] OEB. EB-2022-0200. Exhibit I.1.8-STAFF-14. Attachment 6. Page 53 of 57. March 8th, 2023.

[112] Ibid.

[113] Separately, Concentric cites a figure from an S&P report and states: "*S&P estimated that differences in debt yields between the highest and lowest carbon intensity issuers exceeded 150 basis points for 10+ year issuances over the period studied.*" In the same S&P report, when S&P controlled for differences in credit ratings, it found that "*the average North American energy issuer in the quartile of lowest carbon intensity was about 75 bps lower than that of the highest-intensity quartile.*" LEI further notes that differences in spreads between low and high carbon intensity industries may reflect differences in the underlying volatility of the various businesses, rather than just carbon intensity. Sources: OEB. EB-2022-0200. Exhibit 5: Cost of Capital Overview. Tab 3; Schedule 1; Attachment 1. Page 26 of 164. October 31st, 2022; OEB. EB-2022-0200. Exhibit I.5.3-STAFF-202. Attachment 1. Page 6 of 19. March 8th, 2023.

[114] OEB. EB-2022-0200. Exhibit I.5.3-STAFF-200. Page 2 of 2. March 8th, 2023.

[115] Reuters. Enbridge raises funds from sustainability bonds in climate-goal push. June 28th, 2021.

[116] The discount for SLBs are contingent on Enbridge Gas achieving three targets: (i) achieve a reduction in GHG emissions intensity (Scope 1 and 2) by 35% by the end of 2030 relative to the 2018 baseline; (ii) achieve a 28% racial and ethnic group representation in workforce by the end of 2025; and (iii) achieve 40% representation of women on the Board of Directors by the end of 2025.

[117] OEB. EB-2022-0200. Exhibit 5: Cost of Capital Overview. Tab 3; Schedule 1; Attachment 1. Page 19 of 164. October 31st, 2022.

[118] Enbridge Inc. Sustainability-Linked Bond Framework. June 17th, 2021.

[119] Ibid. Page 16.

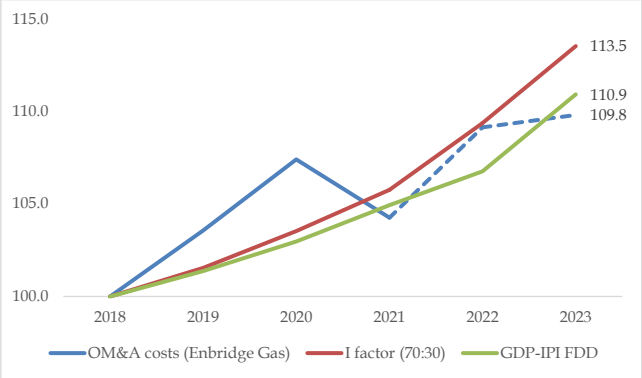
Summary of implications of ESG criteria in financing

- Assessment of Enbridge Gas' ESG metrics by credit rating agencies indicate no material impact on credit rating.
- Favorable terms in SLB issuances indicate that there is a positive impact of incorporating ESG factors into investors' assessment.

3.2.3 Role of inflation

The rate increases for the 2025-2028 period in the IR framework are linked to an inflation factor ("I factor") less a productivity factor ("X factor").[120] In the 2017 amalgamation proceeding, EGD and Union Gas proposed to use the Domestic Product Implicit Price Index – Final Domestic Demand ("GDP-IPI FDD") index as I factor.[121] The OEB staff preferred a two-factor IPI, with 70/30 weighting towards GDP-IPI FDD/Average Weekly Earnings for Ontario ("AWE"), however the OEB accepted the proposal to use GDP-IPI FDD, as it found the difference between the two methodologies to be immaterial.[122,123]

Figure 25. Increase in Enbridge Gas's operations, maintenance and administrative ("OM&A") costs vs increase in I factor from 2018 to 2023 (2018 = 100)



Notes:
1. I factor (70:30) calculated based on weights of 70% for GDP-IPI FDD and 30% for AWE;
2. I factor (70:30) and GDP-IPI FDD are considered with a 2-year lag to account for the delay in regulatory approval;
3. Actual OM&A costs considered from 2018 to 2021 and estimated OM&A costs considered for 2022/2023.

Sources: OEB. EB-2022-0200. Exhibit 4; Statistics Canada.

[120] OEB. EB-2022-0200. Exhibit 10: Incentive Rate-setting Mechanism. October 31st, 2022.

[121] OEB. EB-2017-0306 and EB-2017-0307. Decision and Order. Enbridge Gas Distribution Inc. and Union Gas Limited Application for Amalgamation and Rate-Setting Mechanism. August 30th, 2018 (Amended on September 17th, 2018). Page 25.

[122] Ibid.

[123] The proposed I factor by Enbridge Gas for the 2025-2028 period applies weights of 75% to the non-labour component i.e., GDP-IPI FDD and 25% to the labour component i.e., the index of Average Hourly Earnings for Ontario ("AHE").

LEI reviewed the impact of both methodologies since amalgamation. Between 2018 and 2023, the increases in GDP-IPI FDD and OEB-preferred 2-factor IPI have tracked Enbridge Gas' OM&A costs reasonably well (see Figure 25). However, due to the lag in OEB approval of the I factor, there is a delay in implementation of the I factor.

As evident from Enbridge Gas' submission in this application (2-factor IPI with 75/25 weighting towards GDP-IPI FDD/AHE), LEI does not expect the composition of the I factor to substantially change for the 2024-2028 period. Therefore, LEI sees no material change in risk from inflation for Enbridge Gas relative to 2018.

Summary of role of inflation

- The rate increases for the 2025-2028 period in the IR framework are linked to an I factor.
- LEI does not expect the composition of I factor to substantially change for the 2024-2028 period.

3.2.4 Accessibility to debt markets

The credit ratings for Enbridge Gas (as assessed by DBRS and S&P) have remained stable between 2018 and 2022, with a stable outlook for the near to medium term (as shown earlier in Figure 21, Figure 22 and Figure 24). Enbridge Gas has also stated that its debt accessibility has not changed with respect to six largest banks in Canada (which are the primary debt capital providers for Enbridge Gas).[124]

Although there are uncertainties in demand over the long term, LEI does not expect debt accessibility to materially change by 2028 as Enbridge Gas operates in a favourable regulatory environment with stable cash flows. It is worth noting that Enbridge Gas and its Canadian peers have not faced significant difficulties in issuing debt since 2017 (see Figure 26).[125]

Figure 26. Unsecured debt issuances by Enbridge Gas and its Canadian peers since 2017

Company	Credit Rating	Total unsecured debt issuance since 2017 (C$'000)
Enbridge Gas	A- (S&P)	5,750,000
FortisBC Energy Inc.	A (DBRS)	2,150,000
AltaGas Ltd.	BBB- (S&P)	5,000,000
Énergir, L.P.	A+ (S&P)	1,000,000

Source: S&P Global Intelligence

It is also evident from the success of SLB issuances that investors are willing to provide debt at

[124] OEB. EB-2022-0200. Exhibit I.5.3-STAFF-201. March 8th, 2023.

[125] Concentric notes in its report that credit spreads for Enbridge Gas have slightly widened since 2012. However, in an IR response (SEC-198), the chart presented by Enbridge shows similar widening of credit spreads for peers. Source: OEB. EB-2022-0200. Exhibit I.5.2-SEC-198. Page 2 of 2. March 8th, 2023.

reasonable terms as long as meaningful efforts are undertaken to reduce GHG emissions intensity.[126,127,128]

Summary of accessibility to debt markets

- The credit ratings and key credit metric ratios have not changed meaningfully since 2017/2018, with stable outlook for the near term by credit rating agencies.
- Enbridge Gas' primary debt capital providers have not expressed concern with regard to financing.

3.2.5 Key takeaways

As discussed earlier in this section, financial risk is linked to a company's ability to continue to finance its capital needs and growth opportunities via attracting capital investors at reasonable terms. LEI's analysis indicates that Enbridge Gas' financial risks have not materially changed in this regard, as summarized in Figure 27 below.

Figure 27. LEI summary of financial risk factors for Enbridge Gas

Financial risk	Summary	Change in risk
Credit metrics and potential impact on rating	• The credit ratings and key credit metric ratios have not changed meaningfully since 2017/2018 • The outlook for the near to medium term by credit rating agencies remains stable • As seen later in Section 5, based on forward looking credit metric analysis performed by LEI, Enbridge Gas' key credit metrics improve by 2028 under multiple ROE scenarios	No change
Implications of ESG criteria in financing	• Assessment of Enbridge Gas' ESG metrics by credit rating agencies indicate no material impact on credit rating • Favorable terms in SLB issuances indicate that there is a positive impact of incorporating ESG factors into investors' assessment.	No change
Role of inflation	• The rate increases for the 2025-2028 period in the IR framework are linked to an inflation factor • LEI does not expect the composition of inflation factor to substantially change for the 2024-2028 period	No change
Accessibility to debt markets	• Debt accessibility is not likely to materially change by 2028 as Enbridge Gas operates in a favourable regulatory environment with stable cash flows • Enbridge Gas' primary debt capital providers have not expressed concern with regard to financing	No change

[126] As long as Enbridge Gas retains an investment grade credit rating, it can expect to receive financing at reasonable terms. An investment grade rating implies that credit rating agencies consider the probability of default to be relatively low, which is a reasonable expectation considering the rate regulated business operations of Enbridge Gas. S&P defines an investment grade credit rating as rating of BBB- or above (see Figure 18). Moody's defines an investment grade credit rating as a rating of Baa3 or above.

[127] Enbridge Inc., the parent company of Enbridge Gas, has stated that they are committed to reducing their emissions as ESG goals remain integral to their overall strategy. (Source: Enbridge Inc. 2022 Annual Report. February 2023. Page 9)

[128] OEB. EB-2022-0200. Exhibit I.5.3-STAFF-204. March 8th, 2023.

4 Jurisdictional scan and peer review analysis

This section provides a review of gas LDCs with comparable risk profile. The purpose of this analysis is to assess whether Enbridge Gas is compensated adequately relative to comparable utilities, particularly in relation to other utilities' equity ratio and allowed ROE. LEI has utilized a North American peer group for Enbridge Gas, instead of separate peer groups for US and Canadian utilities. Using North America-wide utilities deepens the sample size and provides a more meaningful reflection of the investors' opportunity space. It is important to note that the US and Canadian capital markets are connected, capital is largely fungible, and Canadian investors have access to both markets.[129] The high US weighting in the share of revenue and assets for a majority of the prominent publicly traded gas holding companies in Canada (as presented in Figure 28) also suggests that risks in many Canadian entities are heavily influenced by their US operations.

Figure 28. US/Canada share of revenue and assets for leading Canadian gas utility holding companies

Utility	Share of revenue (%)		Share of assets (%)	
	US	Canada	US	Canada
Enbridge Inc.	57%	43%	53%	47%
AltaGas Ltd.	40%	60%	73%	27%
ATCO Ltd.	<3.3%	87%	<1.1%	90%
Fortis Inc.	50%	40%	64%	33%

Source: S&P Global Intelligence; annual reports. Most recent available year (2020/2021/2022).

4.1 How does Enbridge Gas' risk compare to similar utilities in North America?

To develop the peer group, LEI focused on operating companies (instead of holding companies), and shortlisted natural gas operating companies with an investment grade credit rating. Investment grade rating is considered as: (i) BBB- or higher, as designated by S&P, Fitch and DBRS; and (ii) Baa3 or higher, as designated by Moodys.[130] This process resulted in in 38 companies (see Figure 29).[131,132]

LEI did not include holding companies in its peer group because holding companies typically include operating subsidiaries which focus on sectors other than gas distribution. For instance,

[129] For example, since 2006, restrictions for Registered Retirement Savings Plans ("RRSP") accounts that limited foreign content to 30% have been lifted. From a practical perspective, this provides Canadians with largely unrestricted access to US and Canadian assets.

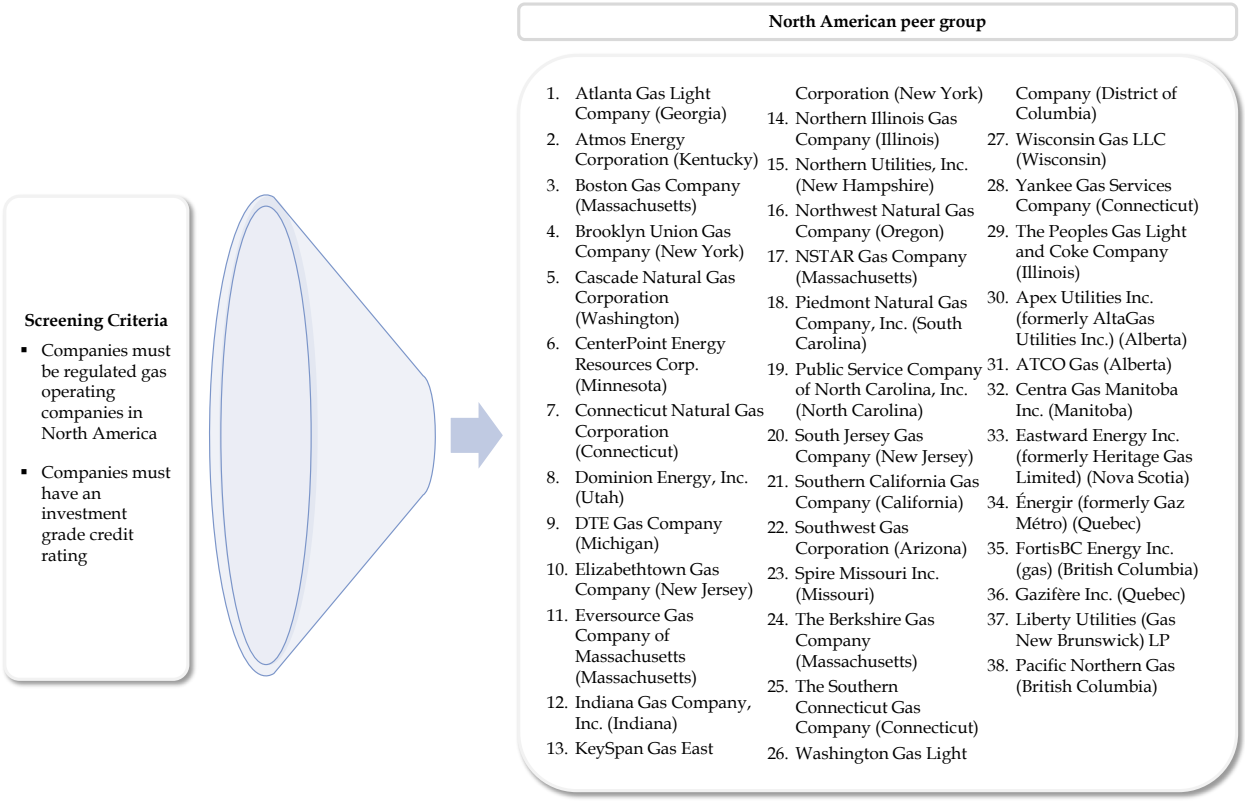
[130] Source: Fidelity

[131] Within the peer group, all US operating companies are rated. Most Canadian operating companies are not directly rated; however, their parent companies are rated as investment-grade.

[132] While LEI's peer group includes more than the 10 largest companies (considered by Concentric), LEI has analyzed the equity ratio and ROE on a customer-weighted average basis to account for size differences.

Fortis Inc., the parent company of FortisBC Energy Inc., classifies 82% of its assets as regulated electricity assets and only 17% as regulated gas assets.[133] Analyzing gas operating companies provides a more accurate picture of allowed equity ratios for Enbridge Gas' peers.

Figure 29. Peer group companies



The analysis of common equity ratios for companies in the peer group is provided in Figure 30.[134]

LEI estimated the customer-weighted average ROE and customer-weighted average equity ratio for the entire peer group, also showing the numbers separately for US and Canadian companies (in Figure 30). The average approved equity ratio across the peer group has been relatively stable over the recent past (as indicated by the 'change in equity ratio' column in Figure 30).

Furthermore, the allowed equity ratios need to be analyzed in conjunction with the allowed ROEs. Relative to US companies, while Canadian companies have lower average equity ratios and lower average ROEs, it is notable that the US companies had similar equity ratios (averaging

[133] Fortis Inc. Fortis Inc. Reports Fourth Quarter & Annual 2022 Results. February 10th, 2023. Page 2.

[134] Customer-weighted average equity ratio and ROE considered for Pacific Northern Gas Ltd. (PNG). BCUC assesses the PNG companies (comprised of: (i) PNG-West; (ii) PNG (N.E.)-FSJ/DC; and (iii) PNG (N.E.)-TR) separately in its cost of capital proceedings. The total number of customers for all PNG customers is ~42,000. Source: PNG

more than 50% in 2011) and higher ROE (averaging ~9.9% in 2011), when the OEB decided to retain the equity ratio of 36% for EGD and Union Gas.[135]

Figure 30. Common equity ratios for LEI peer group

Company name	No. of customers (latest available)	Authorized by regulators					
		Latest ROE (%)	Prior proceeding (equity ratio)	Prior proceeding (year)	Latest proceeding (equity ratio)	Latest proceeding (year)	Change in equity ratio
US operating companies							
Atlanta Gas Light Company (Georgia)	1,600,000	10.25%	51.0%	2017	56.0%	2022	5.0%
Atmos Energy Corporation (Kentucky)	179,000	9.23%	52.6%	2019	54.5%	2022	1.9%
Boston Gas Company (Massachusetts)	948,719	9.70%	53.0%	2016	53.4%	2020	0.4%
Brooklyn Union Gas Company (New York)	1,136,341	8.80%	48.0%	2017	48.0%	2021	0.0%
Cascade Natural Gas Corporation (Washington)	222,000	9.40%	49.1%	2018	47.0%	2020	-2.1%
CenterPoint Energy Resources Corp. (Minnesota)	905,513	9.39%	50.0%	2016	51.0%	2022	1.0%
Connecticut Natural Gas Corporation (Connecticut)	183,181	9.30%	55.0%	2017	55.0%	*2023	0.0%
Dominion Energy, Inc. (Utah)	1,100,000	9.60%	52.1%	2014	51.0%	2023	-1.1%
DTE Gas Company (Michigan)	1,180,501	9.90%	38.7%	2017	39.2%	2022	0.6%
Elizabethtown Gas Company (New Jersey)	300,000	9.60%	46.0%	2017	52.0%	2022	6.0%
Eversource Gas Company of Massachusetts (Massachusetts)	327,664	9.70%	53.5%	2014	53.3%	2020	-0.3%
Indiana Gas Company, Inc. (Indiana)	633,020	9.80%	49.0%	2017	46.2%	2021	-2.8%
KeySpan Gas East Corporation (New York)	588,275	8.80%	48.0%	2017	48.0%	2021	0.0%
Northern Illinois Gas Company (Illinois)	2,025,006	9.75%	52.0%	2018	54.5%	2022	2.5%
Northern Utilities, Inc. (New Hampshire)	35,192	9.30%	51.7%	2016	52.0%	2020	0.3%
Northwest Natural Gas Company (Oregon)	688,000	9.40%	50.0%	2019	50.0%	2023	0.0%
NSTAR Gas Company (Massachusetts)	293,800	9.90%	54.8%	2018	54.8%	*2023	0.0%
Piedmont Natural Gas Company, Inc. (South Carolina)	157,000	9.30%	53.0%	2018	52.2%	2021	-0.8%
Public Service Company of North Carolina, Inc. (North Carolina)	600,000	9.60%	52.0%	2015	51.6%	2020	-0.4%
South Jersey Gas Company (New Jersey)	400,000	9.60%	52.5%	2017	54.0%	2022	1.5%
Southern California Gas Company (California)	6,029,248	9.80%	52.0%	2018	52.0%	2023	0.0%
Southwest Gas Corporation (Arizona)	1,100,000	9.30%	51.7%	2015	50.0%	2021	-1.7%
Spire Missouri Inc. (Missouri)	660,072	9.37%	54.2%	2016	54.2%	*2023	0.0%
The Berkshire Gas Company (Massachusetts)	39,647	9.70%	54.0%	2017	54.0%	2020	0.0%
The Southern Connecticut Gas Company (Connecticut)	205,568	9.25%	52.2%	2016	52.2%	*2023	0.0%
Washington Gas Light Company (District of Columbia)	1,100,000	9.25%	55.7%	2015	52.1%	2019	-3.6%
Wisconsin Gas LLC (Wisconsin)	642,442	9.80%	48.9%	2015	52.7%	2023	3.8%
Yankee Gas Services Company (Connecticut)	245,453	9.30%	53.8%	2017	53.8%	*2023	0.0%
The Peoples Gas Light and Coke Company (Illinois)	820,518	9.90%	50.3%	2015	50.3%	*2023	0.0%
Customer weighted average (US)	**24,346,160**	**9.63%**	**50.9%**		**51.4%**		**0.4%**
Canadian operating companies							
Apex Utilities Inc. (formerly AltaGas Utilities Inc.) (Alberta)	55,272	8.50%	39.0%	2018	39.0%	2022	0.0%
ATCO Gas (Alberta)	1,263,916	8.50%	37.0%	2018	37.0%	2022	0.0%
Centra Gas Manitoba Inc. (Manitoba)	289,364	8.30%	30.0%	2013	30.0%	2019	0.0%
Eastward Energy Inc. (formerly Heritage Gas Limited) (Nova Scotia)	8,500	11.00%	45.0%	2011	45.0%	*2023	0.0%
Énergir (formerly Gaz Métro) (Quebec)	205,000	8.90%	38.5%	2017	38.5%	2022	0.0%
FortisBC Energy Inc. (gas) (British Columbia)	1,064,800	8.75%	38.5%	2013	38.5%	*2023	0.0%
Gazifère Inc. (Quebec)	43,500	9.10%	40.0%	2017	40.0%	2021	0.0%
Liberty Utilities (Gas New Brunswick) LP	12,250	8.50%	45.0%	2011	45.0%	2021	0.0%
Pacific Northern Gas (British Columbia)	42,200	9.38%	43.8%	2014	43.8%	*2023	0.0%
Customer weighted average (Canada)	**2,984,802**	**8.63%**	**37.2%**		**37.2%**		**0.0%**
Customer weighted average (North America)	**27,330,962**	**9.52%**	**49.4%**		**49.8%**		**0.4%**

Notes: LEI has considered 'fully litigated' or 'settled' regulatory proceedings in its analysis.

*Prevailing authorized equity ratio considered for operating companies with no new regulatory approvals since 2019.

Sources: S&P, British Columbia Utilities Commission, Alberta Utilities Commission, Énergir annual report, Manitoba Public Utilities Board, Nova Scotia Utilities and Review Board, Régie de l'énergie, NB Energy & Utilities Board.

Relative to Canadian companies, Enbridge Gas' equity ratio is slightly lower as well. However, the OEB authorized ROE of 9.36% in 2023 is higher than the ROE allowed to Canadian peers,[136] with the exception of Pacific Northern Gas Ltd. and Eastward Energy Inc. Both Pacific Northern

[135] OEB. Case No: EB-2011-0354. Exhibit E2. Tab 2. Schedule 1. Page 29.

[136] OEB's annual adjustment of authorized ROE is more responsive to changes in macroeconomic environment relative to its Canadian peers.

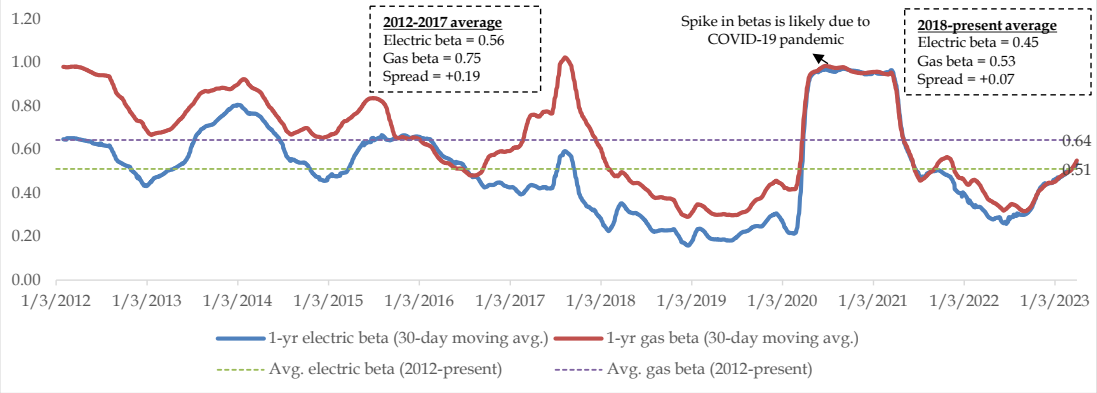
Gas Ltd. and Eastward Energy Inc. are significantly smaller LDCs (relative to Enbridge Gas), serving only ~42,000 customers and ~8,500 customers respectively.[137]

4.2 Implications of risk differential, if any, between gas and electric utilities

Beta analysis: Betas provide a measure of the volatility of the share price of a company or group of companies relative to a market index. The betas for publicly traded gas utilities are generally similar or slightly higher relative to electric utilities (see Figure 31). While the average beta over the last 5 years is slightly higher for gas utilities (0.53) compared to electric utilities (0.45), the average spread between electric and gas utility betas has reduced to +0.07 (for the 2018-2023 period) relative to +0.19 (for the 2012-2017 period).

In addition, betas for both gas and electric utilities have declined significantly since the 2012-2017 period (except for the hike in 2020-2021 period due to COVID-19 related concerns). The recent increase in betas for both electric and gas utilities (as seen from early 2022 onwards in Figure 31) is likely at least partially driven by increase in interest rates by the US Federal Reserve.[138]

Figure 31. 1-yr betas for publicly traded electric and gas utilities in North America (2012-present)



Note: Classification of 'Electric' and 'Gas' utilities considered as per classification provided in S&P Global Intelligence. The betas were estimated relative to S&P 500 index, Nasdaq composite index or the S&P/TSX composite index (depending on the stock exchange where the company is listed).

Source: S&P Global Intelligence.

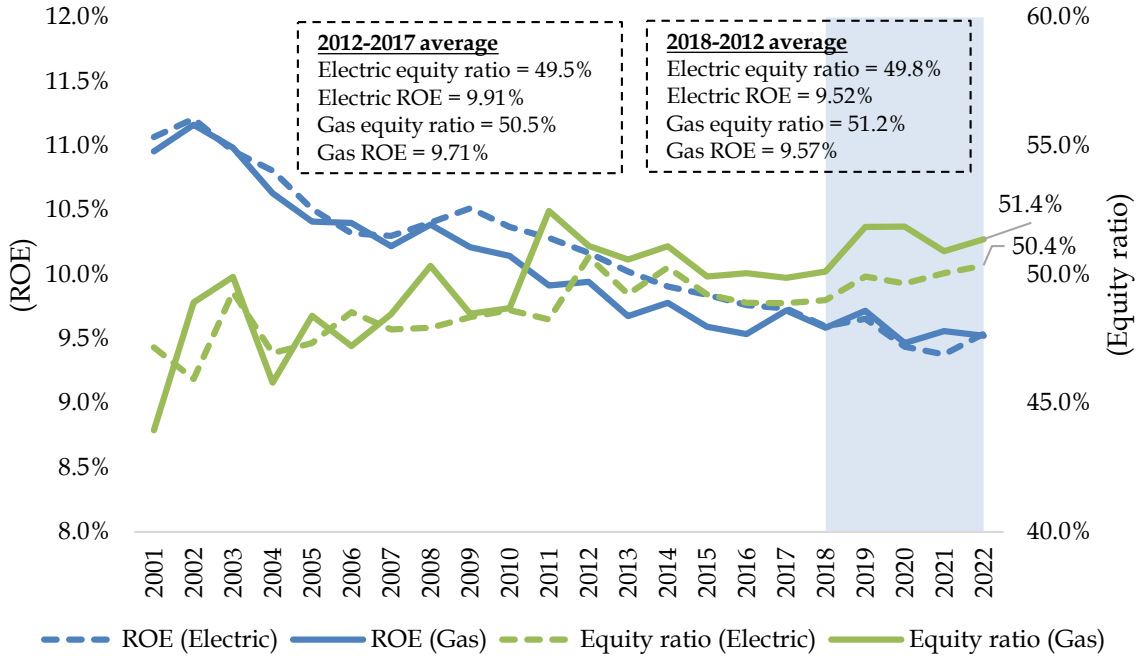
Equity ratio analysis: Separately, the equity ratio and ROE trends for US electricity and gas utilities (as presented below in Figure 32) show slightly higher equity ratios for gas utilities, which is consistent with slightly higher average beta for gas utilities, discussed above. As of 2022, US gas utilities were allowed an average equity ratio of 51.4%, compared to equity ratio of 50.4%

[137] Sources: PNG; Eastward Energy.

[138] The US Federal Reserve and Bank of Canada made a series of policy interest hikes beginning March 2022 (increase of 425 basis points and 475 basis points by the Bank of Canada and US Federal Reserve respectively), the increase of which precedes the increase in beta observed for electric and gas betas starting later in 2022. Sources: Bank of Canada, Forbes. Accessed on April 5th, 2023).

allowed to US electric utilities, while the average ROEs allowed to natural gas and electric utilities were virtually similar (see Figure 32).

Figure 32. Allowed equity ratios and ROEs for US gas and electric utilities (2001-2022)



Source: S&P Global Intelligence.

While the figure above is focused only on the US utilities,[139] it is worth highlighting equity ratio differences between electricity and gas distributors in Ontario. Electricity distributors in Ontario have had an allowed equity ratio of 40% since 2006.[140,141] During the same period, the allowed equity ratio for Enbridge Gas (and its predecessor companies, EGD and Union Gas) has been maintained at 36%.[142]

[139] S&P Global Intelligence does not have similar data for non-US utilities.

[140] OEB Staff Report. EB-2009-0084. Review of the Cost of Capital for Ontario's Regulated Utilities. January 14th, 2016. Page 3.

[141] OEB. Report of the Board on Cost of Capital and 2nd Generation Incentive Regulation for Ontario's Electricity Distributors. December 20th, 2006

[142] Enbridge Gas (with ~3.9 million customers) is much larger than an average electricity distributor in Ontario (with ~94,000 customers), and has significantly more customers (i.e., more than ~2.5x) than the largest electricity distributor (i.e., ~1.44 million customers for Hydro One). Source: OEB.

4.3 Key takeaways

The key takeaways from LEI's peer group analysis are summarized below:

- Enbridge Gas' current allowed equity ratio of 36% is lower compared to both Canadian peers (averaging ~37.2% customer-weighted average equity ratio) and US peers (averaging ~51.4% customer-weighted average equity ratio).

- The OEB authorized ROE of 9.36% in 2023 is generally lower than US peers (averaging ~9.63% customer-weighted ROE), and generally higher than the Canadian peers (averaging ~8.63% customer-weighted ROE).

- While Canadian companies have lower average equity ratios and ROEs than the US companies, the US companies had similar equity ratios and ROEs, i.e., average equity ratio of more than 50% and average ROE of ~9.9% in 2011, when OEB decided to retain the equity ratio of 36% for EGD and Union Gas.

- The average betas for both electricity and gas utilities as well as the spread between electric and gas utility betas has reduced significantly over the last 5 years.

- The equity ratio trends for US electricity and gas utilities show slightly higher equity ratios for gas utilities, consistent with slightly higher average beta for gas utilities.

- The equity ratio for Ontario electricity distribution companies has consistently been higher than Enbridge Gas (and its predecessor companies, EGD and Union Gas) and was so in both 2012 and 2017. It is worth noting that Enbridge Gas currently has significantly higher customers than the largest electricity distributor in Ontario.

Overall, the peer group analysis indicates that Enbridge Gas' equity ratio is on the lower end of the spectrum relative to its peers.

5 Conclusions

Enbridge Gas is proposing an increase in its common equity ratio (by 2%) to 38% for the first/rebasing year (2024) with subsequent 1% increases in 2025 through 2028. Their proposal would result in a common equity ratio of 42% in 2028. Concentric's risk analysis concludes that, compared to 2012, there is a significant increase in risks from energy transition and a modest increase in volumetric risk, operational risk and financial risk. In conjunction with the higher risk profile for Enbridge Gas, Concentric concludes that comparable gas utilities in the US and Canada are allowed meaningfully higher equity ratios than Enbridge Gas.

LEI independently assessed Enbridge Gas' business and financial risks. LEI analyzed changes in 'business' risks from energy transition risk, volumetric risk, operational risk and regulatory risk, and changes in 'financial' risks comprising: (i) analysis of Enbridge Gas' credit metrics and potential impact on rating; (ii) implications of ESG criteria in financing; (iii) role of inflation; and (iv) accessibility to debt markets. LEI also compared the equity ratios and ROEs allowed to comparable gas LDCs with similar risk profile to assess whether Enbridge Gas is compensated adequately relative to comparable utilities. LEI's conclusions from business risk analysis, financial risk analysis and peer group analysis is summarized in the figure below.

Figure 33. Summary of LEI's conclusions from business risk analysis, financial risk analysis and peer group analysis

Parameter	LEI comments
Business risks	• LEI analysis indicates a modest increase in business risks primarily due to risks from energy transition • S&P sees no material change in business risk for the near term • The risks from energy transition are limited for larger gas LDCs like Enbridge Gas (particularly since the amalgamation), however the uncertainties with respect to long-term viability of fossil fuel-based investments have increased
Financial risks	• No material change in financial risks as it operates a rate regulated business with stable cash flows • The credit ratings and key credit metric ratios have not changed meaningfully • The cash flows for Enbridge Gas are expected to be stable through 2028 • Enbridge Gas' debt market accessibility and the risks from higher inflation have not changed materially
Peer group analysis	• Enbridge Gas' current allowed equity ratio of 36% is lower compared to both Canadian peers (averaging ~37.2%) and US peers (averaging ~51.4%) • While Canadian companies have lower equity ratios than the US companies, the US companies had similar equity ratios in 2011 (averaging more than 50%) when OEB decided to retain the equity ratio of 36% for EGD and Union Gas • The average betas for both electricity and gas utilities as well as the spread between electric and gas utility betas has reduced significantly over the last 5 years • The equity ratio for Ontario electricity distribution companies has consistently been higher than Enbridge Gas (and its predecessor companies, EGD and Union Gas). It is notable that Enbridge Gas currently has significantly more customers than the largest electricity distributor in Ontario

While there has been no material change in financial risks, combining the key takeaways from peer group analysis along with a modest increase in overall business risk (primarily due to energy transition risk), LEI believes that an adjustment in the equity ratio for Enbridge Gas is warranted. LEI recommends an increase in equity ratio to 38% for the period 2024 to 2028. LEI agrees with Concentric that Enbridge Gas is riskier today compared to 2012 (and 2017), however LEI differs with regards to the degree to which the risk has increased.[143]

To understand the impact of LEI's recommendation on Enbridge Gas' credit metrics over the 2024-2028 period, LEI performed a forward-looking credit metric analysis for the 2024-2028 period assuming an allowed equity ratio of 38% in conjunction with three scenarios of allowed ROEs (9.36% for the base scenario; 8.86% and 9.86% for the other two scenarios).[144,145]

For the credit metrics' analysis, LEI utilized actual data reported by Enbridge Gas for 2019-2023 (and in some cases up to 2026, for instance the regulated rate base was provided for up to 2026). For 2024-2028, LEI projected net income, debt, interest expense, depreciation and tax liability utilizing reasonable assumptions/calculations based on regulated data provided (as summarized in notes to Figure 34 and in Appendix A - see Figure 35).

As can be observed in Figure 34, Enbridge Gas' financial performance (relative to 2023) improves across all three scenarios, including the scenario which assumes a lower allowed ROE of 8.86%. It is relevant to note that S&P has indicated in its July 2022 rating report that it would consider downgrading the credit rating for Enbridge Gas only in scenarios where Enbridge Gas' financial measures deteriorate with no prospects for improvement, which is not observed in any of the scenarios presented. [146,147]

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[143] In addition, while Concentric notes that *cost of capital is a forward looking concept*, it does not present a forward looking analysis to suggest that credit metrics will be insufficient at lower levels of equity ratios vis-à-vis Concentric's recommendation. Source: OEB. EB-2022-0200. Exhibit 5, Tab 3, Schedule 1, Attachment 1. Page 17 of 164. October 31st 2022.

[144] Between 2019 and 2023, OEB authorized ROE has ranged between 8.34% and 9.36%, i.e., a band of ~1%. Similarly, LEI's scenarios test for an ROE band of 1% (i.e., between 8.86% and 9.86%), which is reasonable in the context of currently approved ROE. Furthermore, the low end of the ROE range tested (i.e., 8.86%) is reasonable with Enbridge Gas' history of consistently earning above its baseline ROE since 2019 (as well as EGD and Union Gas experience prior to amalgamation, as noted by OEB in its decision on amalgamation). Source: EB-2017-0306/EB-2017-0307. Decision and Order. Page 23.

[145] The ROE scenarios are expected to capture uncertainty (both upside and downside) associated with multiple underlying variables (e.g., change in sales volumes, number of customers, among others). If risks are greater in any variables, they would ultimately flow through to achieved ROE.

[146] S&P considers three key credit metrics in their rating reports. These include (i) FFO/Debt; (ii) FFO/Interest; and (iii) Debt/EBITDA.

[147] OEB. EB-2022-0200. Exhibit I.1.8-STAFF-14. Attachment 6. Page 48 of 57. March 8th, 2023.

Figure 34. Forward-looking credit metric analysis based on recommended equity ratio of 38%

Credit Metric	2019-2023 average	2023	2024	2025	2026	2027	2028
Base scenario (ROE of 9.36% for 2024-2028)							
Debt/ EBITDA (x)	5.47x	5.75x	5.06x	5.03x	4.98x	4.95x	4.92x
FFO/ Debt (%)	13.43%	12.75%	14.92%	15.07%	15.24%	15.36%	15.48%
FFO/ Interest (x)	3.19x	3.08x	3.58x	3.61x	3.66x	3.68x	3.71x
EBIT/Interest (x)	2.58x	2.44x	2.53x	2.53x	2.53x	2.53x	2.53x
Lower ROE scenario (ROE of 8.86% for 2024-2028)							
Debt/ EBITDA (x)	5.47x	5.75x	5.15x	5.11x	5.07x	5.04x	5.01x
FFO/ Debt (%)	13.43%	12.75%	14.61%	14.76%	14.94%	15.06%	15.17%
FFO/ Interest (x)	3.19x	3.08x	3.50x	3.54x	3.58x	3.61x	3.64x
EBIT/Interest (x)	2.58x	2.44x	2.45x	2.45x	2.45x	2.45x	2.45x
Higher ROE scenario (ROE of 9.86% for 2024-2028)							
Debt/ EBITDA (x)	5.47x	5.75x	4.98x	4.94x	4.90x	4.87x	4.84x
FFO/ Debt (%)	13.43%	12.75%	15.22%	15.38%	15.55%	15.67%	15.78%
FFO/ Interest (x)	3.19x	3.08x	3.65x	3.69x	3.73x	3.76x	3.79x
EBIT/Interest (x)	2.58x	2.44x	2.62x	2.62x	2.62x	2.62x	2.62x

Notes:

1. LEI estimated the net income based on ROE earned on the regulated rate base.

2. LEI calculated the credit metrics based on debt and equity capitalized in the ***rate base***. This method differs slightly from the methodology used by credit rating agencies, which use metrics reported in the financial statements for their calculations.

3. To ensure consistent comparison, LEI also calculated the relevant credit metrics for the period from 2019 to 2023 with the same methodology used for the period from 2024 to 2028 period.

4. Rate base data between 2019 and 2026 was provided by Enbridge Gas. The projections for rate base and gross property, plant and equipment for 2027 and 2028 are based on CAGR (utilizing data from 2022 to 2026).

5. Weighted average rate of depreciation and share/cost of debt in the capital structure between 2025 and 2028 assumed to be the same as Enbridge Gas' assumptions for 2024.

6. Depreciation calculated by multiplying the weighted average depreciation rate with gross property, plant and equipment in the rate base.

7. Tax rate considered is based on actual effective tax rate observed in 2022.

A detailed table underlying LEI's assumptions/calculations is provided in Section 6 (Appendix A).

Sources: EB-2022-0200. Exhibit 2, Tab 1, Schedule 1; EB-2022-0200. Exhibit 4, Tab 5; Schedule 1; Attachment 3; EB-2022-0200. Exhibit I.2.1-SEC-100, Attachment 1; EB-2022-0200. Exhibit I.2.5-SEC-107, Attachment 1.

LEI also stress tested equity ratios of 36%, 37% and 38% for tail risk scenarios (detailed analysis provided in Section 7 – Appendix B).[148] The credit metrics remain resilient in tail risk scenarios with an equity ratio of 38% (relative to 36% and 37%), which would assist Enbridge Gas in maintaining its investment grade rating.

Overall, LEI believes that if no increase in equity ratio is approved, the current equity ratio of 36% could make Enbridge Gas a less attractive investment option when compared to its peers, and potentially risk credit ratios deteriorating under stress test scenarios. However, given projected credit metrics, an increase beyond 38% is unnecessary.

LEI's recommendation vis-à-vis the Fair Return Standard

- ***The comparable investment standard:*** LEI's recommendation will bring Enbridge Gas' allowed equity ratio closer to observed equity ratio for its peers, while balancing for the economies of scale observed for Enbridge Gas post-amalgamation. While Enbridge Gas has not faced significant obstacles in issuing debt currently, an increase in equity ratio to 38% is reasonable considering the higher level of uncertainty for the upcoming period

- ***The financial integrity standard:*** with an equity ratio of 38%, Enbridge Gas' financial performance improves (relative to 2023) across multiple ROE scenarios. The equity ratio of 38% helps Enbridge Gas to remain financially resilient even in unlikely tail risk scenarios.

- ***The capital attraction standard:*** the credit rating assessments from DBRS and S&P have remained primarily unchanged for Enbridge Gas since 2017, with a stable near-term outlook by both agencies. As can be observed from LEI's forward-looking credit metric analysis, increase in equity ratio to 38% will help Enbridge Gas to maintain or improve its current credit rating, allowing it to continue attracting capital at reasonable terms.

[148] A tail risk is an event with a small probability of happening but could still occur. Source: The Wall Street Journal

6 Appendix A: Assumptions/calculations underlying forward-looking credit metrics analysis

Figure 35. Assumptions/calculations underlying forward-looking credit metrics analysis

Label	Item	Formula	LEI comments	Source
[a]	Rate Base		Rate base data between 2019 and 2026 was provided by Enbridge Gas. The projections for rate base and gross property, plant and equipment ("Gross PPA") for 2027 and 2028 are based on CAGR (utilizing data from 2022 to 2026)	- 2019 to 2024: Exhibit 2, Tab 1, Schedule 1 - 2025 & 2026: Exhibit I.2.1-SEC-100, Attachment 1
[b]	Return on Equity		- Three ROE scenarios considered between 2024 and 2028: base scenrio (9.36%), lower ROE scenario (8.86%) and higher ROE scenario (9.86%)	
[c]	Equity portion		- OEB-approved equity ratio of 36% considered between 2019 and 2023 - LEI recommended equity ratio of 38% considered between 2024 and 2028	
[d]	Net income	[a] * [b] * [c] for 2024-2028	- 2019-2023 provided (see sources) - 2024-2028 net income estimated by LEI	- 2019-2021: OEB gas yearbooks - 2022: Exhibit I.1.8-STAFF-14, Attachment 3 - 2023: Exhibit 1, Tab 8, Schedule 1, Attachment 9
[e]	Interest expense	([a] * [k] * [m]) + ([a] * [l] * [n])	- Formula applied for 2019-2028	
[f]	Tax liability		- 2019-2023 provided (see sources); - 2024-2028 calculated using actual effective tax rate for 2022 (also similar for 2021)	- 2019-2021: OEB gas yearbooks - 2022: Exhibit I.1.8-STAFF-14, Attachment 3 - 2023: Exhibit 1, Tab 8, Schedule 1, Attachment 9
[g]	Depreciation	Gross PPA * depreciation rate	Weighted average rate of depreciation between 2025 and 2028 assumed to be the same as Enbridge Gas' assumptions for 2024	Exhibit 4, Tab 5; Schedule 1; Attachment 3
[h]	EBITDA	[d] + [e] + [f] + [g]		
[i]	Funds from Operations (FFO)	[h] - [e] - [f]		
[j]	EBIT	[h] - [g]		
[k]	Long-term debt (share)		Share of debt in capital structrure and cost of debt between 2025 and 2028 assumed to be the same as Enbridge Gas' assumptions for 2024.	Exhibit 5, Tab 1, Schedule 1
[l]	Short-term debt (share)			
[m]	Long-term debt (cost)			
[n]	Short-term debt (cost)			

7 Appendix B: Stress testing for tail risk scenarios

LEI stress-tested equity ratios of 36%, 37% and 38% for tail risk scenarios. The OEB approved an off-ramp of +/- 300 basis points for Enbridge Gas in its decision on amalgamation. This implies that if non-weather normalized earnings during the deferred rebasing period are outside of +/- 300 basis points from the OEB-approved ROE, a regulatory review may be triggered. As such, for the stress test, LEI has considered scenarios considering ROEs of 8.36% (-100 basis points from the 2023 OEB-authorized ROE of 9.36%), 7.36% (-200 basis points) and 6.36% (-300 basis points). The indicative impact on credit metrics associated with equity ratios of 36%, 37% and 38% under these ROE scenarios is presented in Figure 36, Figure 37 and Figure 38 respectively. The credit metrics remain resilient in tail risk scenarios with an equity ratio of 38%, which is not necessarily the case with equity ratios of 36% and 37%.

Figure 36. Stress testing for tail risk scenarios with equity ratio of 36%

Credit Metric	2019-2023 average	2023	2024	2025	2026	2027	2028
ROE of 8.36% for 2024-2028 (36% common equity ratio)							
Debt/ EBITDA (x)	5.47x	5.75x	5.47x	5.43x	5.38x	5.35x	5.32x
FFO/ Debt (%)	13.43%	12.75%	13.59%	13.74%	13.91%	14.03%	14.14%
FFO/ Interest (x)	3.19x	3.08x	3.29x	3.33x	3.37x	3.39x	3.42x
EBIT/Interest (x)	2.58x	2.44x	2.27x	2.27x	2.27x	2.27x	2.27x
ROE of 7.36% for 2024-2028 (36% common equity ratio)							
Debt/ EBITDA (x)	5.47x	5.75x	5.67x	5.62x	5.57x	5.53x	5.50x
FFO/ Debt (%)	13.43%	12.75%	13.03%	13.18%	13.35%	13.47%	13.58%
FFO/ Interest (x)	3.19x	3.08x	3.15x	3.19x	3.23x	3.26x	3.28x
EBIT/Interest (x)	2.58x	2.44x	2.12x	2.12x	2.12x	2.12x	2.12x
ROE of 6.36% for 2024-2028 (36% common equity ratio)							
Debt/ EBITDA (x)	5.47x	5.75x	5.88x	5.83x	5.77x	5.73x	5.70x
FFO/ Debt (%)	13.43%	12.75%	12.47%	12.62%	12.79%	12.90%	13.01%
FFO/ Interest (x)	3.19x	3.08x	3.02x	3.05x	3.09x	3.12x	3.15x
EBIT/Interest (x)	2.58x	2.44x	1.97x	1.97x	1.97x	1.97x	1.97x

Note: Drop in credit metrics relative to 2023 are highlighted. The drop in EBIT/Interest (a credit metric considered by DBRS in its rating reports) is primarily due to higher absolute depreciation expense for the 2024-2028 period relative to previous years. DBRS considers EBIT/Interest in the range of 1.8x-2.8x to be consistent with financial risk assessment of 'A'. Source: DBRS.

Figure 37. Stress testing for tail risk scenarios with equity ratio of 37%

Credit Metric	2019-2023 average	2023	2024	2025	2026	2027	2028
ROE of 8.36% for 2024-2028 (37% common equity ratio)							
Debt/ EBITDA (x)	5.47x	5.75x	5.36x	5.32x	5.27x	5.24x	5.21x
FFO/ Debt (%)	13.43%	12.75%	13.94%	14.09%	14.27%	14.38%	14.50%
FFO/ Interest (x)	3.19x	3.08x	3.36x	3.40x	3.44x	3.47x	3.49x
EBIT/Interest (x)	2.58x	2.44x	2.32x	2.32x	2.32x	2.32x	2.32x
ROE of 7.36% for 2024-2028 (37% common equity ratio)							
Debt/ EBITDA (x)	5.47x	5.75x	5.55x	5.51x	5.46x	5.42x	5.39x
FFO/ Debt (%)	13.43%	12.75%	13.36%	13.51%	13.68%	13.80%	13.91%
FFO/ Interest (x)	3.19x	3.08x	3.22x	3.25x	3.30x	3.32x	3.35x
EBIT/Interest (x)	2.58x	2.44x	2.16x	2.16x	2.16x	2.16x	2.16x
ROE of 6.36% for 2024-2028 (37% common equity ratio)							
Debt/ EBITDA (x)	5.47x	5.75x	5.76x	5.71x	5.66x	5.62x	5.59x
FFO/ Debt (%)	13.43%	12.75%	12.77%	12.92%	13.09%	13.21%	13.32%
FFO/ Interest (x)	3.19x	3.08x	3.08x	3.11x	3.15x	3.18x	3.21x
EBIT/Interest (x)	2.58x	2.44x	2.00x	2.00x	2.00x	2.00x	2.00x

Note: Drop in credit metrics relative to 2023 are highlighted. The drop in EBIT/Interest (a credit metric considered by DBRS in its rating reports) is primarily due to higher absolute depreciation expense for the 2024-2028 period relative to previous years. DBRS considers EBIT/Interest in the range of 1.8x-2.8x to be consistent with financial risk assessment of 'A'. Source: DBRS.

Figure 38. Stress testing for tail risk scenarios with equity ratio of 38%

Credit Metric	2019-2023 average	2023	2024	2025	2026	2027	2028
ROE of 8.36% for 2024-2028 (38% common equity ratio)							
Debt/ EBITDA (x)	5.47x	5.75x	5.25x	5.20x	5.16x	5.13x	5.10x
FFO/ Debt (%)	13.43%	12.75%	14.30%	14.46%	14.63%	14.75%	14.86%
FFO/ Interest (x)	3.19x	3.08x	3.43x	3.47x	3.51x	3.54x	3.57x
EBIT/Interest (x)	2.58x	2.44x	2.37x	2.37x	2.37x	2.37x	2.37x
ROE of 7.36% for 2024-2028 (38% common equity ratio)							
Debt/ EBITDA (x)	5.47x	5.75x	5.44x	5.40x	5.35x	5.31x	5.28x
FFO/ Debt (%)	13.43%	12.75%	13.69%	13.84%	14.02%	14.14%	14.25%
FFO/ Interest (x)	3.19x	3.08x	3.28x	3.32x	3.36x	3.39x	3.42x
EBIT/Interest (x)	2.58x	2.44x	2.21x	2.21x	2.21x	2.21x	2.21x
ROE of 6.36% for 2024-2028 (38% common equity ratio)							
Debt/ EBITDA (x)	5.47x	5.75x	5.65x	5.60x	5.55x	5.51x	5.48x
FFO/ Debt (%)	13.43%	12.75%	13.08%	13.23%	13.41%	13.52%	13.64%
FFO/ Interest (x)	3.19x	3.08x	3.14x	3.17x	3.22x	3.24x	3.27x
EBIT/Interest (x)	2.58x	2.44x	2.04x	2.04x	2.04x	2.04x	2.04x

Note: Drop in credit metrics relative to 2023 are highlighted. The drop in EBIT/Interest (a credit metric considered by DBRS in its rating reports) is primarily due to higher absolute depreciation expense for the 2024-2028 period relative to previous years. DBRS considers EBIT/Interest in the range of 1.8x-2.8x to be consistent with financial risk assessment of 'A'. Source: DBRS.

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Tab 2

Ontario Energy Association (OEA)

Answer to Interrogatory from
Ontario Energy Board Staff (OEB Staff)

INTERROGATORY

Reference:

Concentric Report, Figure 19, p. 71

Question(s):

Note this interrogatory has been asked by LEI

It is common practice for Canadian regulators to approve an adjustment for flotation costs and financing flexibility, with 50 basis points being the norm.

a) Other than it being common practice, please provide the empirical basis (with examples of actual utility flotation costs) for recommending 50 basis points associated with floatation costs.

Response:

Flotation costs are the costs associated with the sale of new issues of common stock. These costs include out-of-pocket expenditures for preparation, filing, underwriting, and other costs of issuance of common stock, as well as price discounts and premiums. In his text, New Regulatory Finance, Dr. Roger Morin cited a 1996 study by Lee et. al., which found that the average flotation costs for regulated utilities are equal to approximately 5% of the gross proceeds of the equity issuance, with smaller issues tending to have a higher percentage.[1] This is consistent with recent research by the Enbridge Treasury team, which found that the average flotation costs for a sample of Canadian and U.S. utilities were also equal to slightly more than 5% of the gross proceeds. Based on Concentric's prior analysis of flotation costs, the empirical study cited by Dr. Morin, and the recent Enbridge analysis, our view is that flotation costs for utilities are within a range from 2% to 10%, with an average of around 5%. This can be translated into basis points of ROE by adjusting the dividend yield in the DCF model. Using this method, if f flotation costs are equal to 5% of the gross proceeds of the equity issuance, then the adjustment to ROE would be approximately 25 basis points for companies like those in Concentric's North American combined proxy group. Flotation costs at the higher end of the range (i.e., 10% of the gross proceeds), would equate to

[1] Dr. Roger A. Morin, New Regulatory Finance, Public Utilities Reports, Inc. 2006, at 323.

an approximately 45 basis points adjustment. Concentric notes that the 50 basis point adjustment approved by Canadian regulators also includes financial flexibility.
In addition to an adjustment for flotation costs, Canadian regulators in most jurisdictions including Ontario have also typically included an adjustment for financial flexibility. This adjustment provides a small cushion so that the utility may continue to raise equity in challenging capital market conditions.

According to Dr. Roger Morin, utilities need the ability to attract capital even during "market breaks" because they have an ongoing obligation to serve. For that reason, he recommends providing the utility an additional allowance for financial flexibility during difficult market conditions, as follows:

> *The flotation cost allowance of 5% allows for both the direct flotation costs and market pressure component but does not contain an explicit allowance for market break.*
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> *Such an allowance is desirable, however. If negative events should occur during the time period from announcement of a public issue to actual pricing, the price could fall below book value unless a sufficient margin is maintained. Compared to non-regulated companies, utilities do not possess the same latitude and discretion in accessing capital markets in view of their obligation to serve. They must access capital markets regardless of capital market conditions. Therefore, they have limited ability to time security issuances in order to avoid an adverse market break.*[2]

[2] Dr. Roger A. Morin, New Regulatory Finance, Public Utilities Reports, Inc. 2006, at 326.