

**RÉPONSE À LA DEMANDE DE RENSEIGNEMENTS N° 1 DE LA RÉGIE DE L'ÉNERGIE (LA
RÉGIE) SUR LA DEMANDE CONJOINTE RELATIVE À LA FIXATION DE TAUX DE
RENDEMENT
ET DE STRUCTURES DE CAPITAL
(ADRESSÉE AU DR BENTE VILLADSEN)**

ENTREPRISES DE L'ÉCHANTILLON DE SERVICES D'EAU

1. **Références :** (i) Pièce [B-0015](#), p. 55, lignes 14 à 21;
(ii) Pièce [B-0015](#), p. 75, tableaux 31 et 32;
(iii) Pièce [B-0015](#), p. 76, lignes 1 à 6.

Préambule :

(i) « *In addition, the natural gas distribution industry is expected to undergo substantial changes as customers, regulators and the legislature focus on carbon reductions. As discussed by Dr. Brown, the calls for reductions in natural gas used in home heating is just beginning in Quebec, the focus on climate policy initiatives to reduce greenhouse gas (“GHG”) emissions and limit the development of natural gas infrastructure in many jurisdictions impacts all natural gas utilities. I therefore selected a group of water utilities, where there are no carbon considerations, to assess whether the estimates from the gas LDCs are reasonable and what premium, if any, carbon considerations merit* ». [nous soulignons], [note de bas de page omise]

(ii) «

FIGURE 31: SUMMARY OF REASONABLE RANGES AT 40% EQUITY

	Canadian Sample	Natural Gas Sample	Water Sample
CAPM/ECAPM	8.25% - 10.5%	9.5% - 12.5%	9.5% - 12.5%
DCF*	10.5% - 12.0%	9.75% - 12.25%	8.75% - 14.5%

FIGURE 32: SUMMARY OF REASONABLE RANGES AT 46% EQUITY

	Canadian Sample	Natural Gas Sample	Water Sample
CAPM/ECAPM	7.75% - 9.75%	9.0% - 11.5%	8.75% - 11.5%
DCF*	9.5% - 10.75%	9.0% - 11.0%	8.0% - 13.0%

*The lower DCF estimate is from the multi-stage DCF model, while the upper estimate is from the single-stage DCF model. The single-stage DCF results are non-trivially higher.

»

(iii) « *I find that the results from the Water Sample are in line with and support the reasonable ranges from the other two samples at each capital structure. Consequently, I find a reasonable*

range of ROEs for the sample (prior to any business risk considerations) to be 9.75 % to 11.25 % at a 40 % equity capital structure and an initial reasonable range of ROEs to 9.0 % to 10.25 % at a 46 % equity capital structure. At the recommended 43 % equity the range is approximately 9.25 % to 10.75 % ». [nous soulignons], [note de bas de page omise]

Demandes :

- 1.1 En vous référant à (i), (ii) et (iii), veuillez commenter sur le niveau de la prime de risque imputable aux initiatives de réduction des gaz à effet de serre qui peut être observée en comparant les fourchettes des taux de rendement raisonnables des services d'eau à celles des holdings gaziers canadiens et américains.

Réponse:

No specific number of basis points were attributed to greenhouse gas reduction initiatives – instead, these factors were used as a consideration on where within the reasonable range to place the Quebec gas utilities.

Dans votre réponse,

- Veuillez notamment commenter le fait que la borne supérieure des fourchettes du CAPM/ECAPM et du DCF des services d'eau (*Water Sample*) est significativement plus élevée que celle des fourchettes des compagnies canadiennes (*Canadian Sample*).
- Veuillez notamment commenter le fait que les bornes inférieures et supérieures des fourchettes du CAPM/ECAPM des services d'eau (*Water Sample*) sont plus élevées que celles des fourchettes des compagnies canadiennes (*Canadian Sample*).

Réponse:

This is the reason that my testimony concluded:

“I find that the results from the Water Sample are in line with and support the reasonable ranges from the other two samples at each capital structure.” (EGI-1, B-0015, p. 76).

- 1.2 En vous référant à (i) ainsi qu'à la réponse à la question précédente, veuillez commenter sur le risque de décarbonation (*carbon considerations*) présumé des Demanderesses.

Dans votre réponse, veuillez également expliquer comment ce risque, s'il était présent, serait isolé et mesuré en nombre de points de base, à l'aide des entreprises de l'échantillon des

services d'eau (*Water Sample*).

Réponse:

As noted in the response to 1.1 above, the Water Sample was used as a check on the results from the Canadian and Gas Sample. No specific number of basis points was assigned to carbon considerations.

CRITÈRES DE SÉLECTION DES ENTREPRISES

2. **Références :**
- (i) Pièce [B-0015](#), p. 56 et 57, A52;
 - (ii) Pièce [B-0015](#), p. 57, note de bas de page # 126;
 - (iii) Pièce [B-0015](#), p. 57, note de bas de page # 127;
 - (iv) Pièce [B-0103](#).

Préambule :

(i) « *To identify companies suitable for inclusion in each proxy sample, I started with Value Line's list of publicly traded companies classified as natural gas LDCs or water utilities in the U.S. Next, I reviewed business descriptions and financial reports of these companies and eliminated companies that had less than 50 percent of their assets dedicated to regulated utility activities in their industry; e.g., natural gas or water utility services.*

[...]

Further, I require companies that have an investment grade credit rating and more than \$300 million in market capitalization (i.e., not a micro-cap) for liquidity purposes. A final, and fundamental, requirement is that the proxy companies have the necessary data available for estimation. [notes de bas de page omises]

(ii) « *In some cases, a proxy company does not have a credit rating from any of the major rating agencies (Artesian Res Corp, Global Water Resources, and Chesapeake Utilities). However, if they were to be rated, they would receive an investment grade rating. In these instances, I assign the company the average credit rating of the rest of the proxy group.* » [nous soulignons]

(iii) « *I relax my \$300 annual revenue screening criteria to include Artesian Res Corp, Global Water Resources, Middlesex Water in recognition that these companies have very stable finances despite relatively low revenue.* » [nous soulignons]

(iv) Le rapport 10-K de Global Water Resources indique notamment ce qui suit :

- « *The Company qualifies as an "emerging growth company" as defined in the Jumpstart Our Business Startups Act (the "JOBS Act"). For as long as the Company is deemed to be an emerging growth company, the Company may take advantage of certain exemptions from various regulatory reporting requirements that are applicable to other public companies* ». [p. 5 du fichier pdf]
- « *Because the worldwide market value of our common stock held by non-affiliates, or public float, is below \$250 million, we are also a "smaller reporting company" as defined under the Exchange Act. Some of the foregoing reduced disclosure and other requirements are also available to us because we are a smaller reporting company and may continue to be available to us even after we are no longer an emerging growth company under the JOBS Act but remain a smaller reporting company under the Exchange Act. For example as a smaller reporting company, we are not required to have an auditor report on our internal control over financial reporting pursuant to Section 404(b) of the Sarbanes-Oxley Act* ». [p. 6 du fichier pdf]
- Le bénéfice net de Global Water Resources, Inc. (*net income*) de 2020 se chiffre à 1 105 k\$ par rapport à 2 224 k\$ en 2019. [p. 51 du fichier pdf]

Demandes :

- 2.1 En vous référant à (ii), veuillez expliquer les raisons qui motivent le choix d'inclure Chesapeake Utilities dans l'échantillon des entreprises américaines (*Gas Sample*) bien qu'elle ne respecte pas le critère énoncé en (i).

Réponse:

Chesapeake Utilities does meet the criterion in (i) as it is part of Value Line's natural gas LDC group and currently has a market value of equity of \$2,183 million calculated as the number of outstanding shares times share price; see Villadsen Direct, Schedule BV-5.3 (Exhibit EGI-1, B-0015, PDF p. 174). Thus, as explained in the quote in (ii), the company falls into the category of companies that fulfill all criteria but a credit rating from a major rating agency.

- 2.2 En vous référant à (ii), veuillez fournir les raisons pour lesquelles Chesapeake Utilities n'est pas cotée par une agence de crédit principale.

Réponse:

Dr. Villadsen cannot opine as to why Chesapeake Utilities is not rated by S&P, Moody's or Fitch Ratings.

- 2.3 Dans votre réponse, veuillez indiquer si Chesapeake Utilities est cotée par une agence de notation autre que S&P Global Rating. Le cas échéant, veuillez indiquer la cote de crédit octroyée par cette agence de notation.

Réponse:

Not applicable.

- 2.4 En vous référant à (i) et (iii), veuillez préciser si le critère de 300 M\$ se rapporte à la capitalisation boursière ou aux revenus annuels. Veuillez également expliquer le choix du 300 M\$.

Réponse:

The \$300 million refers to market capitalization and is meant to exclude micro caps (entities with a market cap below \$300 million). Micro caps are excluded because some data providers (e.g., Value Line) often provide less data for such companies. In addition, small companies (e.g., micro caps) tend to have less trading.

- 2.5 En vous référant à (iii), veuillez préciser l'application du critère « *have very stable finances* ».

Réponse:

Artesian Resources Corp., Global Water Resources, Middlesex Water all are highly regulated companies, whose capital structure has remained stable over the last three years:

- see BV-3, Schedule BV-5.3C, BV-5.3.H and BV-5.3.I for details pertaining to capitalization.
- See Figure 21, p. 59 of Villadsen Direct for the level of regulated assets.

See the tables below for details on key financial measures as presented by the companies:

From Artesian's 2020 Annual Report (Layout 1 (annualreports.com)).

10 YEAR SUMMARY OF FINANCIAL HIGHLIGHTS										
<i>For the year ended December 31,</i>										
<i>per share amounts</i>	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011
Operating Revenues	\$ 88.14	\$ 83.60	\$ 80.41	\$ 82.24	\$ 79.09	\$ 77.02	\$ 72.47	\$ 69.07	\$ 70.56	\$ 65.07
Operating Expenses	\$ 65.85	63.67	61.46	62.64	60.27	59.44	56.42	54.59	54.71	51.33
Operating Income	\$ 22.30	19.93	18.96	19.60	18.82	17.58	16.05	14.48	15.85	13.74
Net Income	\$ 16.82	14.93	14.28	13.98	12.95	11.31	9.51	8.30	9.85	6.75
Net Income Per Common										
Share - Diluted	\$ 1.79	1.60	1.54	1.51	1.41	1.26	1.07	0.94	1.13	0.83
Cash Dividend										
Per Common Share	\$ 1.01	0.98	0.95	0.93	0.90	0.87	0.85	0.82	0.79	0.76
Rate Base	\$ 315.71	\$ 267.55	\$ 258.56	\$ 249.00	\$ 240.39	\$ 233.46	\$ 235.69	\$ 225.10	\$ 220.05	\$ 214.42

From Global Water Resources Annual Report, 2020 and 2019 ([Financials \(gwresources.com\)](http://Financials.gwresources.com)).

The following table summarizes our results of operations for the years ended December 31, 2020 and 2019 (in thousands):

	For the Year Ended December 31,	
	2020	2019
Revenues	\$ 38,627	\$ 35,471
Operating expenses	31,292	28,510
Operating income	7,335	6,961
Total other expense	(5,459)	(3,575)
Income before income taxes	1,876	3,386
Income tax expense	(771)	(1,162)
Net income	<u>\$ 1,105</u>	<u>\$ 2,224</u>
Basic earnings per common share	\$ 0.05	\$ 0.10
Diluted earnings per common share	\$ 0.05	\$ 0.10

**Demande conjointe relative à la fixation de taux de rendement
et de structures de capital, R-4156-2021**

The following table summarizes our results of operations for the years ended December 31, 2019 and 2018 (in thousands):

	For the Year Ended December 31,	
	2019	2018
Revenues	\$ 35,471	\$ 35,515
Operating expenses	28,510	26,246
Operating income	6,961	9,269
Total other expense	(3,575)	(4,384)
Income before income taxes	3,386	4,885
Income tax expense	(1,162)	(1,782)
Net income	\$ 2,224	\$ 3,103
Basic earnings per common share	\$ 0.10	\$ 0.15
Diluted earnings per common share	\$ 0.10	\$ 0.15

From Middlesex Water's 2020 Annual Report ([Middlesex Water Company 2020 Annual Report \(proxyvote.com\)](#)).

(Millions of Dollars, Except per Share Data)	2020	2019	2018
Operating Revenues	\$141.6	\$134.6	\$138.1
Operations and Maintenance Expenses	70.8	68.0	71.6
Depreciation	18.5	16.7	15.0
Income and Other Taxes	10.8	11.2	15.3
Interest Charges	7.5	7.3	6.8
Net Income	38.4	33.9	32.5
Earnings Applicable to Common Stock	38.3	33.8	32.3
Diluted Earnings Per Share	2.18	2.01	1.96
Cash Dividends Paid Per Share	1.04	0.97	0.91
Utility Plant	982.0	876.0	775.9

2.6 En vous référant à (iii) et (iv), veuillez commenter l'application du critère « *have very stable finances* » à l'entreprise Global Water Resources.

Réponse:

Please see the response to 2.5 above as well as Exhibit BV-3, Schedule BV-5.3.H (Exhibit EGI-1, B-0015), which shows a stable growth in the market value of the company.

COMPARABILITÉ DES ÉCHANTILLONS AMÉRICAINS

3. **Références :** (i) Pièce [B-0015](#), p. 54, lignes 3 à 8;
 (ii) Pièce [B-0015](#), p. 75, tableaux 31 et 32;
 (iii) Pièce [B-0068](#), p. 40.

Préambule :

(i) « *In addition, the U.S. and Canadian utility business and regulatory models are increasingly similar and thus the business risk and regulatory environments are comparable. The Utilities have supportive regulatory mechanisms that allow for timely recovery of prudently incurred costs, similar to those awarded to utilities in the U.S. For example, Énergir has a decoupling mechanism and earning sharing mechanism, which are common amongst U.S. Gas LDCs. For example, among the fifty U.S. states, (72 percent) allow some form of decoupling* ». [nous soulignons], [notes de bas de page omises]

(ii) «

FIGURE 31: SUMMARY OF REASONABLE RANGES AT 40% EQUITY

	Canadian Sample	Natural Gas Sample	Water Sample
CAPM/ ECAPM	8.25% - 10.5%	9.5% - 12.5%	9.5% - 12.5%
DCF*	10.5% - 12.0%	9.75% - 12.25%	8.75% - 14.5%

FIGURE 32: SUMMARY OF REASONABLE RANGES AT 46% EQUITY

	Canadian Sample	Natural Gas Sample	Water Sample
CAPM/ ECAPM	7.75% - 9.75%	9.0% - 11.5%	8.75% - 11.5%
DCF*	9.5% - 10.75%	9.0% - 11.0%	8.0% - 13.0%

*The lower DCF estimate is from the multi-stage DCF model, while the upper estimate is from the single-stage DCF model. The single-stage DCF results are non-trivially higher.

».

(iii) « *First mortgage bond holders in the US generally benefit from a first lien on most of the fixed assets used to provide utility service, including such assets as generating stations,*

transmission lines, distribution lines, switching stations and substations, and gas distribution facilities, as well as a lien on franchise agreements. In our view, the critical nature of these assets to the issuers and to the communities they serve has been a major factor that has led to very high recovery rates for this class of debt in situations of default, thereby justifying a two-notch uplift. The combination of the breadth of assets pledged and the bankruptcy-tested recovery experience has been unique to the US ». [nous soulignons]

Demandes :

- 3.1 En vous référant à (i) et (ii), veuillez fournir les raisons qui expliquent que les bornes inférieures et supérieures des fourchettes du CAPM/ECAPM des holdings gaziers américains (*Natural Gas Sample*) soient plus élevées que celles des fourchettes des compagnies canadiennes (*Canadian Sample*).

Réponse:

Dr. Villadsen notes that using the DCF model, the lower bound for the Canadian Sample is higher than that of the Natural Gas Sample (Exhibit EGI-1, B-0015, Figure 28 and 29, p. 74).

While Dr. Villadsen cannot know the exact reason, she observes that a plausible explanation is that the Canadian Sample is very diverse and few companies in the sample operate exclusively in one market or country (see Exhibit EGI-1, B-0015 Q/A 48). This is illustrated by, for example, the wide range of CAPM results in Exhibit BV-3.4.10 (CAPM for the Canadian Sample) versus the narrower range in Exhibit BV-3.5.10 (CAPM for the Natural Gas Sample).

- 3.2 Veuillez expliquer si les entreprises canadiennes, dont les taux de rendement observés en (ii) sont plus faibles que ceux des entreprises américaines, sont en mesure de financer leurs activités à des conditions raisonnables.

Dans la négative, veuillez fournir des exemples et les références pertinentes.

Réponse:

It is Dr. Villadsen's understanding that as of today, the Canadian Sample companies are able to finance their operations on reasonable terms.

- 3.3 En vous référant à (i), veuillez comparer les risques de faillites de services publics au Canada et aux États-Unis. Veuillez notamment commenter le rôle du régulateur dans le fait que l'entreprise réglementée Pacific Gas & Electric a fait faillite deux fois en 20 ans.

Réponse:

Dr. Villadsen considers the risk of bankruptcy of highly regulated utilities in Canada and the United States low. This is consistent with, for example, Standard & Poor's April 7, 2021 'Default, Transition, and Recovery: 2020 Annual Global Corporate Default And Rating Transition Study,' finds that utilities have some of the lowest default rates. ([Default, Transition, and Recovery: 2020 Annual Global Corporate Default And Rating Transition Study | S&P Global Ratings \(spglobal.com\)](#))

Further, Dr. Villadsen views the risk in California, where PG&E is located, as unique due to the inverse condemnation doctrine in the state. For clarity, the entities included in Dr. Villadsen's Natural Gas Sample have minimal exposure to California (while Southwest Gas operate in California, only approximately 5% of Southwest Gas' revenue comes from California - [Southwest Gas Holdings 2021 Year End Earnings Conference Call - Slide Presentation \(swgasholdings.com\)](#)).

Thus, Dr. Villadsen does not consider that the risk of bankruptcy a differentiating factor.

- 3.4 Veuillez commenter l'observation de Moody's relatée en (iii). Dans votre réponse, veuillez indiquer si le bénéfice détenu par les détenteurs d'obligations de premier prêt hypothécaire (*First mortgage bond holders in the US*) relaté en (iii) est un facteur de différenciation des régimes d'affaires canadiens et américains.

Réponse:

Dr. Villadsen is not certain what is meant by *earnings held* by First Mortgage Bond Holders as bond holders generally do not get to share in earnings, but instead periodically receive a pre-determined interest payment (absent default). Therefore and for the reasons articulated in the response to 3.3 above, Dr. Villadsen does not view this as a differentiating factor.

DCF/ TAUX DE CROISSANCE

4. **Références :**
- (i) Pièce [B-0015](#), *Exhibit BV-1*, p. 111;
 - (ii) Pièce [B-0015](#), *Schedule No. BV-5.5*, p. 187;
 - (iii) Pièce [B-0015](#), *Schedule No. BV-4.5*, p. 143;
 - (iv) Pièce [B-0015](#), p. 72, note de bas de page 152;
 - (v) Pièce confidentielle [B-0108](#);
 - (vi) Pièce [B-0107](#), p. 14;
 - (vii) Pièce [B-0107](#), p. 8;
 - (viii) Pièce [B-0107](#), p. 8.

Préambule :

(i) « *For the reasons described above, I rely on analyst forecasts of earnings growth for the company-specific growth rate inputs to my implementations of the single- and multi-stage DCF models. All of the companies in my samples have coverage from equity analysts reporting to Thomson Reuters IBES, so I use the consensus 3-5 year EPS growth rate provided by that service. For the U.S. based samples, I supplement these consensus values with growth rates based on EPS estimates from Value Line* ». [nous soulignons], [notes de bas de page omises]

(ii) Le tableau « *Schedule No. BV-5.5* » présente la prévision des taux de croissance des entreprises américaines selon Thomson Reuters IBES et Value Line. Les prévisions de Thomson Reuters IBES sont accompagnées d'un renseignement intitulé « *Number of Estimates* ».

(iii) Le tableau « *Schedule No. BV-5.5* » présente la prévision des taux de croissance des entreprises américaines selon Thomson Reuters IBES et Value Line. Les prévisions de Thomson Reuters IBES sont accompagnées d'un renseignement intitulé « *Number of Estimates* ».

(iv) « *Since Value Line does not cover all Canadian companies in my sample, for those companies not followed by Value Line, I used only the consensus mean EPS growth rate estimates from Thomson Reuters IBES.* » [nous soulignons]

(v) La pièce confidentielle B-0108 contient le détail des prévisions de croissance à long terme de chacune des entreprises des échantillons « *Canadian Sample* », « *Gas Sample* » et « *Water Sample* ». Il s'agit des prévisions de croissance rapportées par Thomson Reuters IBES.

(vi) « *Our analysts have developed comprehensive spreadsheet models that take into account the current economic climate and a company's operating fundamentals, including recent management initiatives, the actions of the competition, and many other relevant factors for each company. These models are used to develop our earnings and other financial projections for the coming 3 to 5 years* ».

(vii) « *The Target Price Range and 3- to 5-year Projections are necessarily based upon an estimate of future earnings. They are, therefore, very subjective. These should not be confused with the Timeliness rank for 12-month performance, which is independent of estimates and based solely on historical data* ».

(viii) « *At this point, it may be helpful to look at the Annual Rates box in the left-hand column. This box shows the compound annual per share growth percentages for sales, “cash flow,” earnings, dividends and book value for the past 5 and 10 years and also Value Line’s projections of growth for each item for the coming 3 to 5 years. All rates of change are computed from the average number for a past 3-year period to an average number for the specified future period, which our analyst estimates. For details, see below.*

Trends are important here. Check whether growth has been increasing or slowing and see if Value Line’s analyst thinks it will pick up or fall off in the future. Specific estimates for various data items for 3 to 5 years out can be found in bold italics print in the far right hand column of the Statistical Array (item 15 on the sample page) ». [nous soulignons]

Demandes :

4.1 En vous référant à (i), veuillez expliquer les raisons qui motivent le choix de compléter les prévisions de Thomson Reuters IBES par celles de Value Line.

Réponse:

Value Line publishes its own growth forecast. At the time of Dr. Villadsen’s analysis, Value Line had a published growth rate forecast for Enbridge Inc. and Fortis Inc. IBES creates a consensus using growth rate forecasts that it receives from various analysts. IBES also reports the names of the institutions that provided the growth rate forecast. The growth rate forecasts available from IBES are sources from the following analysts:

Thomson One Long Term Growth Estimates - Canada Sample

Name	Ticker	EPS Long Term Growth	# of Analyst Estimates	Analyst Institution #1	Analyst Institution #2	Analyst Institution #3	Analyst Institution #4
Algonquin Power & Utilities Corp.	AQN.TO	7.23%	3	IA Capital Markets	Undisclosed	Undisclosed	
AltaGas Ltd.	ALA.TO	9.88%	2	Credit Suisse	Undisclosed		
Canadian Utilities Limited	CU.TO	0.26%	2	Credit Suisse	Undisclosed		
Emera Incorporated	EMA.TO	5.55%	4	Credit Suisse	Scotiabank GBM	Undisclosed	Undisclosed
Enbridge Inc.	ENB.TO	8.51%	2	Credit Suisse	Undisclosed		
Fortis Inc.	FTS.TO	5.20%	2	Credit Suisse	Undisclosed		
Hydro One Limited	H.TO	2.47%	2	Credit Suisse	Undisclosed		
TC Energy Corporation	TRP.TO	3.58%	3	Credit Suisse	Undisclosed	Undisclosed	

Notes and Sources:
Updated from ThomsonOne as of 06/30/2021.

4.2 En vous référant à (ii), veuillez confirmer que le nombre d’analystes impliqués dans chacune des prévisions fournies par Thomson Reuters IBES se trouve dans la colonne « *Number of Estimates* ». Dans le cas contraire, veuillez expliquer.

Réponse:

Confirmed. For clarity, this figure does not include the analyst forecast from Value Line.

4.3 En vous référant à (ii), veuillez commenter la qualité des prévisions de croissance fournies par Thomson Reuters IBES du fait que celles-ci proviennent d’un seul analyste (à l’exception de Atmos Energy).

Dans votre réponse, veuillez notamment commenter le fait que les entreprises de l’échantillon « *Canadian Sample* » sont couvertes par au moins deux analystes (référence (iii)).

Réponse:

This is one reason that Dr. Villadsen includes the Value Line forecast, so that there are at least 2 analysts’ forecasts for each natural gas company. Two is also the number of IBES forecasts for AltaGas, Canadian Utilities, Enbridge, Fortis, and Hydro One (with Enbridge and Fortis also having one forecast from Value Line). Ideally, more analysts are preferable, but the analyst following for the Natural Gas and Water Utility sample companies are, to the degree the contributor is disclosed, financial institutions with substantial experience in the industry. The specifics of those contributing to the IBES forecasts is provided in the table below.

Thus, Dr. Villadsen considers the total number of forecasts rather than just those available from IBES.

Thomson One Long Term Growth Estimates - US Sample

Name	Ticker	EPS Long Term Growth	# of Analyst Estimates	Analyst Institution #1	Analyst Institution #2	Analyst Institution #3
American States Water Co	AWR	5.20%	1	Seaport Global Securities LLC		
American Water Works Company Inc	AWK	8.60%	1	Seaport Global Securities LLC		
Artesian Resources Corp	ARTNA	4.00%	1	Undisclosed		
Atmos Energy Corp	ATO	7.17%	3	Seaport Global Securities LLC	Undisclosed	Undisclosed
California Water	CWT	11.70%	1	Undisclosed		
Chesapeake Utilities Corp	CPK	4.74%	1	Undisclosed		
Essential Utilities Inc	WTRG	6.40%	1	Seaport Global Securities LLC		
Global Water Resources Inc	GWRS	15.00%	1	Roth Capital Partners, Inc		
Middlesex Water Co	MSEX	2.70%	1	Undisclosed		
New Jersey Resources Corp	NJR	6.00%	1	Undisclosed		
NiSource Inc	NI	3.52%	1	Credit Suisse		
Northwest Natural Holding Co	NWN	3.80%	1	Undisclosed		
ONE Gas Inc	OGS	5.00%	1	Undisclosed		
SJW Group	SJW	7.00%	1	Undisclosed		
South Jersey Industries Inc	SJI	4.80%	1	Undisclosed		
Southwest Gas Holdings Inc	SWX	4.00%	1	Undisclosed		
Spire Inc	SR	7.31%	1	Credit Suisse		

Notes and Sources:
Updated from ThomsonOne as of 06/30/2021.

- 4.4 En vous référant à (ii), (iii) et (v), veuillez indiquer si la prévision de chaque analyste, et ce, pour chaque entreprise, couvre le même horizon de temps. Veuillez élaborer.

Dans votre réponse, veuillez notamment spécifier cet horizon de temps.

Réponse:

Each analyst's forecasts is an estimated average rate of earnings growth for the next 3 to 5 years. If a forecast/estimate is not updated for 180 days, it is dropped.

- 4.5 En vous référant à (iv) et (v), veuillez expliquer le sens de l'expression « *consensus mean EPS growth rate estimates* ».

Dans votre réponse :

- En vous référant à (ii) et dans les situations où la prévision de croissance provient d'un seul analyste, veuillez, à l'aide des renseignements de la référence (v) fournir le détail de la provenance de cette prévision.

Réponse:

“LT Growth Broker Estimate: “The contributing broker’s estimate, normalized to reflect the I/B/E/S default currency and corporate actions (e.q. stock splits). Long-term growth is an estimate of the compound average rate of EPS growth an analyst expects over a period of three to five years.”

The origin of the forecasts are shown in the table in the response to 4.1 and 4.3.

- En vous référant à (ii) et (iii) et dans les situations où la prévision de croissance provient de plusieurs analystes, veuillez, à l'aide des renseignements de la référence (v) fournir le détail de la provenance de cette prévision.

Réponse:

According to ThomsonOne/ IBES, Long-term growth (LTG) is the estimated average rate of earnings growth for the next 3 to 5 years and this period can vary from broker to broker. It is expressed as a percentage increase per year. The period can vary from broker to broker. ThomsonOne/ IBES then takes the mean of individual broker LTG estimates to compute a single LTG value.

- 4.6 Veuillez confirmer que la méthodologie de prévision des bénéfices par action employée par Value Line est celle décrite en (vi). Dans le cas contraire, veuillez fournir la référence à cette méthodologie.

Réponse:

Confirmed.

- 4.7 Veuillez valider que les projections dont il est question à la référence (vii), à savoir « *Target Price Range and 3- to 5-year Projections* » reposent sur la méthodologie décrite en (vi).

Réponse:

Confirmed.

- 4.8 En vous référant à (vii), veuillez commenter l'affirmation selon laquelle les projections qui s'appuient sur la méthodologie décrite en (vi) sont subjectives.

Réponse:

The projections are subjective in that they are subject to the inputs and assumptions relied on by Value Line to derive their projections. Other equity analysts may arrive at a different projection based on a different set of inputs and assumptions. It is for this reason that Dr. Villadsen relies on the estimates of multiple analysts in her cost of equity estimation methodology.

- 4.9 En vous référant à (viii), veuillez expliquer dans quelle mesure les investisseurs pondèrent la prévision de croissance par l'examen de l'évolution historique des ventes, des flux de trésorerie, des revenus, des dividendes et de la valeur au livre de l'entreprise.

Réponse:

While Dr. Villadsen cannot speculate on what investors do, she observes that both the cost of capital and stock prices inherently are forward-looking and that analysts know the history and presumably incorporate that information in their forecasts. Therefore, Dr. Villadsen views historical information as already incorporated in analysts' forecasts and hence a separate consideration is irrelevant.

STRUCTURES DE CAPITAL - VALEURS AUX LIVRES ET AU MARCHÉ

5. **Références :** (i) Pièce [B-0068](#), p. 4;
(ii) Pièce [B-0015](#), Annexe BV-4.3, *Panel F*, p. 174;
(iii) Pièce [B-0015](#), Annexe BV-4.3 (*Panel A à Panel H*);
(iv) Pièce [B-0015](#), Annexe BV-5.3 (*Panel A à Panel Q*);
(v) Pièce [B-0015](#), p. 17.

Préambule :

- (i) « *Moody's Rating Methodology: Regulated Electric And Gas Utilities*

Factor / Sub-Factor Weighting - Regulated Utilities

Broad Scorecard Factors	Factor Weighting	Sub-Factor	Sub-Factor Weighting
Regulatory Framework	25%	Legislative and Judicial Underpinnings of the Regulatory Framework	12.5%
		Consistency and Predictability of Regulation	12.5%
Ability to Recover Costs and Earn Returns	25%	Timeliness of Recovery of Operating and Capital Costs	12.5%
		Sufficiency of Rates and Returns	12.5%
Diversification	10%	Market Position	5%*
		Generation and Fuel Diversity	5%**
Financial Strength, Key Financial Metrics	40%	CFO pre-WC + Interest / Interest	7.5%
		CFO pre-WC / Debt	15.0%
		CFO pre-WC – Dividends / Debt	10.0%
		Debt/Capitalization	7.5%
Total	100%		100%
Notching Adjustment			
Holding Company Structural Subordination			0 to -3
*10% weight for issuers that lack generation; **0% weight for issuers that lack generation			

- (ii)

**Demande conjointe relative à la fixation de taux de rendement
et de structures de capital, R-4156-2021**

Schedule No. BV-5.3

Market Value of the US Sample Gas and Water

Panel F: Chesapeake Utilities

(SMM)

	DCF Capital Structure	2nd Quarter, 2021	2nd Quarter, 2020	2nd Quarter, 2019	2nd Quarter, 2018	2nd Quarter, 2017	2nd Quarter, 2016	Notes
MARKET VALUE OF COMMON EQUITY								
Book Value, Common Shareholder's Equity	\$742	\$742	\$593	\$544	\$508	\$462	\$380	[a]
Shares Outstanding (in millions) - Common	18	18	16	16	16	16	15	[b]
Price per Share - Common	\$120	\$120	\$85	\$94	\$78	\$75	\$61	[c]
Market Value of Common Equity	\$2,113	\$2,113	\$1,396	\$1,538	\$1,271	\$1,225	\$933	[d] = [b] x [c]
Market Value of GP Equity	\$0	\$0	\$0	\$0	\$0	\$0	\$0	[e] = See Sources and Notes
Total Market Value of Equity	\$2,113	\$2,113	\$1,396	\$1,538	\$1,271	\$1,225	\$933	[f] = [d] + [e]
Market to Book Value of Common Equity	2.85	2.85	2.35	2.83	2.50	2.65	2.46	[g] = [f] / [a]
MARKET VALUE OF PREFERRED EQUITY								
Book Value of Preferred Equity	\$0	\$0	\$0	\$0	\$0	\$0	\$0	[h]
Market Value of Preferred Equity	\$0	\$0	\$0	\$0	\$0	\$0	\$0	[i] = [h]
MARKET VALUE OF DEBT								
Current Assets	\$111	\$111	\$99	\$124	\$116	\$102	\$87	[j]
Current Liabilities	\$322	\$322	\$430	\$512	\$389	\$272	\$284	[k]
Current Portion of Long-Term Debt	\$15	\$15	\$17	\$77	\$10	\$12	\$12	[l]
Net Working Capital	(\$196)	(\$196)	(\$314)	(\$311)	(\$263)	(\$157)	(\$185)	[m] = [j] - ([k] - [l])
Notes Payable (Short-Term Debt)	\$169	\$169	\$286	\$301	\$235	\$146	\$180	[n]
Adjusted Short-Term Debt	\$169	\$169	\$286	\$301	\$235	\$146	\$180	[o] = See Sources and Notes
Long-Term Debt	\$507	\$507	\$440	\$287	\$243	\$202	\$144	[p]
Book Value of Long-Term Debt	\$692	\$692	\$744	\$665	\$488	\$359	\$336	[q] = [l] + [o] + [p]
Adjustment to Book Value of Long-Term Debt	\$26	\$26	\$18	(\$3)	\$10	\$16	\$11	[r] = See Sources and Notes
Market Value of Long-Term Debt	\$717	\$717	\$762	\$662	\$498	\$375	\$347	[s] = [q] + [r]
Market Value of Debt	\$717	\$717	\$762	\$662	\$498	\$375	\$347	[t] = [s]
MARKET VALUE OF FIRM								
	\$2,830	\$2,830	\$2,158	\$2,200	\$1,769	\$1,600	\$1,281	[u] = [f] + [i] + [t]
DEBT AND EQUITY TO MARKET VALUE RATIOS								
Common Equity - Market Value Ratio	74.66%	74.66%	64.68%	69.92%	71.83%	76.57%	72.88%	[v] = [f] / [u]
Preferred Equity - Market Value Ratio	-	-	-	-	-	-	-	[w] = [i] / [u]
Debt - Market Value Ratio	25.34%	25.34%	35.32%	30.08%	28.17%	23.43%	27.12%	[x] = [t] / [u]

(iii) Les tableaux (Panel) A à H de l'annexe BV-4.3 contiennent les renseignements relatifs à l'évaluation des structures de capital selon la valeur au marché et au livre de chacune des entreprises de l'échantillon « *Canadian Sample* » en date du deuxième trimestre des années 2016 à 2021.

(iv) Les tableaux (Panel) A à Q de l'annexe BV-5.3 contiennent les renseignements relatifs à l'évaluation des structures de capital selon la valeur au marché et au livre de chacune des entreprises des échantillons « *Gas Sample* » et « *Water Sample* » au deuxième trimestre des années 2016 à 2021.

À partir des annexes BV-4.3 et BV-5.3 des références (iii) et (iv), la Régie a produit le tableau suivant présentant les ratios cours sur valeurs aux livres (C/VAL) des titres formant les 3 échantillons d'entreprises comparables proposées, en date du 2^e trimestre 2021.

Échantillon Gazifières américaines	C/VAL	Échantillon Dist. eau américains	C/VAL	Total US C/VAL	Échantillon Canadiens	C/VAL
Capitaux propres : valeurs au marché / valeurs aux livres						

**Demande conjointe relative à la fixation de taux de rendement
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Atmos Energy	1,67	Amer. States Water	4,52		Algonquin Power & Utilities	2,35
Chesapeake Utilities	2,85	Amer. Water Works	4,30		AltaGas Ltd	1,22
New Jersey Resources	2,39	Artesian Res. Corp	2,09		Canadian Utilities Limited	1,89
NiSource	2,07	Californie Water	2,95		Emera Incorporated	1,78
Northwest Natural	1,78	Essential Utilities	2,41		Enbridge Inc	1,84
ONE Gas	1,75	Global Water Resources	12,33		Fortis Inc	1,53
South Jersey Inds	1,60	Middlesex Water	4,17		Hydro One Limited	1,70
Southwest Gas	1,36	SJW Group	1,95		TC Energy Corporation (*)	2,18
Spire Inc	1,55					
Moyenne gazières américaines	1,89	Moyenne distrib. eau américains	4,34	3,04	Moyenne échantillon canadien (*)	1,81
Dette à long terme : valeurs au marché / valeurs aux livres						
Atmos Energy	1,15	Amer. States Water	1,19		Algonquin Power & Utilities	1,12
Chesapeake Utilities	1,04	Amer. Water Works	1,20		AltaGas Ltd	1,10
New Jersey Resources	1,15	Artesian Res. Corp	1,16		Canadian Utilities Limited	1,26
NiSource	1,19	Californie Water	1,14		Emera Incorporated	1,18
Northwest Natural	1,14	Essential Utilities	1,13		Enbridge Inc	1,13
ONE Gas	1,10	Global Water Resources	1,13		Fortis Inc	1,18
South Jersey Inds	1,04	Middlesex Water	1,04		Hydro One Limited	1,22
Southwest Gas	0,79	SJW Group	1,19		TC Energy Corporation (*)	1,18
Spire Inc	1,15					
Moyenne gazières américaines	1,08	Moyenne distrib. eau américains	1,15	1,11	Moyenne échantillon canadien	1,17

(*) À noter que le ratio C/VAL de TC Energy a été modifié pour tenir compte du cours moyen de 63,52 \$ au 2^e trimestre 2021 plutôt que 30 \$ figurant au Panel H du tableau BV-4.3 (pièce B-0015, p. 152)

(v)

FIGURE 7: AVERAGE CAPITAL STRUCTURES OF PROXY GROUP COMPANIES

Proxy Sample	DCF Capital Structure			3-Year Average Capital Structure		
	Common Equity - Value Ratio	Preferred Equity - Value Ratio	Debt - Value Ratio	Common Equity - Value Ratio	Preferred Equity - Value Ratio	Debt - Value Ratio
	[1]	[2]	[3]	[4]	[5]	[6]
Canadian Sample Average	48.8%	3.4%	47.8%	45.6%	4.4%	50.0%
U.S Natural Gas Sample Average	55.2%	1.2%	43.6%	61.1%	0.8%	38.1%
U.S Water Utility Sample Average	69.5%	0.0%	30.5%	70.8%	0.0%	29.2%

Demandes :

- 5.1 Veuillez confirmer si les ratios financiers calculés par l'agence de notation de crédit Moody's (référence (i)) et servant à mesurer le risque des entreprises réglementées, sont établis essentiellement à partir des états financiers de ces dernières et s'ils sont basés sur les valeurs aux livres. Si non, veuillez expliquer et offrir des exemples.

Réponse:

Dr. Villadsen wants to clarify that the risk measured by credit rating agencies such as Moody's is **default** risk. For the purpose of calculating the credit ratios in (ii) to assess default risk, Moody's primarily rely on book value. However, Dr. Villadsen notes that the document cited explains that 'all of the quantitative credit metrics incorporate Moody's standard adjustments to income statement, cash flow statement and balance sheet accounts

for restructuring impairments, off-balance sheet accounts, receivable securitization programs, under-funded pension obligations, and recurring operating leases.’ Thus, Moody’s makes adjustments to the financial statements.

- 5.2 Veuillez confirmer la validité des données compilées au tableau de la référence (iv) ou, le cas échéant, présenter un tableau corrigé, en précisant les corrections requises.

Réponse:

Confirmed.

- 5.3 Dans l’hypothèse où une correction touchait le cours de l’action de Chesapeake, lequel devait passer de 120 \$ à 79,75 \$ de sorte que le ratio Cours / valeur aux livres (C/VAL) de Chesapeake devait passer de 2,85 (référence (ii)), à 1,89 fois la valeur aux livres, soit le ratio actuel C/VAL moyen de l’échantillon des distributeurs gaziers américains (référence (iv)), toute chose étant égale par ailleurs, veuillez expliquer comment cela affecterait la notation de crédit de Chesapeake si elle était calculée selon la méthodologie utilisée par Moody’s (référence (i)). Veuillez préciser quels sont les facteurs et sous-facteurs qui pourraient être modifiés en raison de la baisse du cours de l’action.

Réponse:

If Chesapeake’s share price was to fall from \$120 to \$79.75 for no reason (i.e., no financial statement, market position, or regulatory framework was changed), then Chesapeake’s credit metrics would not change. However, a share price drop of about 34% would likely cause a credit rating agency to evaluate the ‘Regulatory Framework, Ability to Recover Cost and Earn Return, Diversification’ scorecard factors.

- 5.4 Dans l’hypothèse où une correction touchait le cours de l’action de Chesapeake, lequel devait passer de 120 \$ à 79,75 \$, de sorte que le ratio Cours / valeur aux livres (C/VAL) de Chesapeake devait passer de 2,85 à 1,89 fois la valeur aux livres, toute chose étant égale par ailleurs, veuillez confirmer que la structure de capital basée sur les valeurs au marché passerait de 74,7 % de capitaux propres et 25,3 % de dette à 66,2 % de capitaux propres et 33,8 % de dette. Si non, veuillez corriger et expliquer le calcul des ratios.

Réponse:

Confirmed - assuming all other figures remain constant (e.g., that the market value of debt remains at \$715).

- 5.4.1. Veuillez confirmer que, selon l'hypothèse soumise, la structure de capital basée sur les valeurs aux livres demeurerait inchangée, soit à 51,7 % de capitaux propres / 48,3 % dette. Si non, veuillez corriger le calcul des ratios.

Réponse:

Confirmed – again assuming all parameters other than the stock price remains the same.

- 5.4.2. Veuillez expliquer si, selon l'hypothèse soumise, la réduction de 74,7 % à 66,2 % de la proportion de capitaux propres calculée selon les valeurs au marché viendrait augmenter le risque financier de l'entreprise et si oui, précisez de quelle manière. Veuillez élaborer.

Réponse:

The hypothesis submitted is based on the assumption that all other financial parameters (accounting or market-based) remain the same. However, given that assumption, a reduction in Chesapeake's stock price from \$120 to \$79.75 eliminates \$724.5 million from the equity capital and therefore reduces Chesapeake's ability to withstand adverse conditions by about \$724.5 million. Simply put, the company's ability to withstand an economic setback is reduced by almost ¾ of a billion dollars.

- 5.4.3. Veuillez expliquer si, selon l'hypothèse soumise, la réduction de 74,7 % à 66,2 % de la proportion de capitaux propres calculée selon les valeurs au marché pourrait empêcher l'entreprise d'émettre de nouvelles actions à une valeur raisonnable afin de financer des projets d'expansion, et si oui, précisez de quelle manière.

Réponse:

Dr. Villadsen cannot assess Chesapeake's ability to issue new shares following a 34% drop in share price as it is unlikely such a change would occur in a vacuum (e.g., without any changes in accounting, financial market, regulatory or legislative factors).

However, in order to be responsive, Dr. Villadsen observes that several companies in the natural gas LDCs sample, (e.g., Atmos, New Jersey Resources, NiSource, South Jersey Industries, and Southwest Gas) have raised capital in recent years indicating that the average natural gas LDC company can issue equity.

5.4.4. Veuillez expliquer si, selon l'hypothèse soumise, la réduction de 74,7 % à 66,2 % de la proportion de capitaux propres calculée selon les valeurs au marché pourrait affecter l'attrait de l'entreprise du point de vue d'un investisseur envisageant acheter des actions de l'entreprise, et si oui, précisez de quelle manière.

Réponse:

Dr. Villadsen cannot assess Chesapeake's attractiveness to an investor following a 34% drop in share price as it is unlikely such a change would occur in a vacuum (e.g., without any changes in accounting, financial market, regulatory or legislative factors).

Please see also the response to 5.4.3. above.

5.5 Veuillez indiquer si, du fait que les actions des entreprises de l'échantillon des services d'eau américains se transigent sur le marché à 4,34 fois la valeur aux livres en moyenne, plutôt qu'à 1,89 fois la valeur aux livres en moyenne pour les distributeurs de gaz de l'échantillon américain (référence (iv)), de sorte que la proportion de capitaux propres dans les structures de capital des distributeurs d'eau, à 69,5 % (référence (v)), dépasse nettement celle des distributeurs de gaz, à 55,2 % lorsque calculée à partir des valeurs au marché, les distributeurs d'eau sont significativement moins risqués aux yeux des investisseurs que les distributeurs de gaz. Si oui, veuillez expliquer de quelle manière.

Réponse:

Water utilities due to their lower leverage have a higher cushion in case of adverse conditions. Specifically, the additional equity means that the companies are better able to withstand, for example, financial market declines as seen during the early months of the COVID-19 pandemic.

6. **Références :**
- (i) Pièce [B-0015](#), p. 17 et 18;
 - (ii) Pièce [B-0015](#), p. 142;
 - (iii) Pièce [B-0015](#), p. 186;
 - (iv) Pièce [B-0015](#), Annexe BV-4.3 (*Panel A à Panel H*);
 - (v) Pièce [B-0015](#), Annexe BV-5.3 (*Panel A à Panel Q*);
 - (vi) Site SEDAR.com, [Rapport annuel 2020 Emera inc.](#), p. 88;
 - (vii) Site SEDAR.com, [Rapport annuel 2020 Canadian Utilities Ltd](#), p. 77.

Préambule :

(i) « As shown in Figure 7 below, the deemed common equity ratios for the Utilities are much lower than the publicly traded equity of the comparator companies that make up my proxy groups. Of particular note, the common equity ratios for the Natural Gas sample is almost 10 percent higher than that of the Utilities. Even the more diversified sample of Canadian utilities has higher common equity ratios that are above that of the Utilities.

FIGURE 7: AVERAGE CAPITAL STRUCTURES OF PROXY GROUP COMPANIES

Proxy Sample	DCF Capital Structure			3-Year Average Capital Structure		
	Common Equity - Value Ratio	Preferred Equity - Value Ratio	Debt - Value Ratio	Common Equity - Value Ratio	Preferred Equity - Value Ratio	Debt - Value Ratio
	[1]	[2]	[3]	[4]	[5]	[6]
Canadian Sample Average	48.8%	3.4%	47.8%	45.6%	4.4%	50.0%
U.S Natural Gas Sample Average	55.2%	1.2%	43.6%	61.1%	0.8%	38.1%
U.S Water Utility Sample Average	69.5%	0.0%	30.5%	70.8%	0.0%	29.2%

Therefore, the cost of equity estimates based on the market-derived model inputs (i.e., stock prices, dividends, betas) for the proxy companies reflect substantially lower financial risk than the Utilities. An equity investment in the Utilities is subject to a capital structure with a debt component that is about 6 to 15 percentage points higher compared to an equity investment in other publicly traded natural gas utilities in North America, imposing higher financial risk on investors. Consequently, absent an adjustment to account for differences in financial leverage, the raw model results are not comparable for purposes of determining a fair return, even to the extent the underlying business risk is comparable ». [nous soulignons]

(ii)

Schedule No. BV-4.4

Canadian Sample

Capital Structure Summary of the Canadian Sample

Company	DCF Capital Structure			3-Year Average Capital Structure		
	Common Equity - Value Ratio	Preferred Equity - Value Ratio	Debt - Value Ratio	Common Equity - Value Ratio	Preferred Equity - Value Ratio	Debt - Value Ratio
	[1]	[2]	[3]	[4]	[5]	[6]
Algonquin Power & Utilities Corp.	0.61	0.01	0.38	0.65	0.01	0.34
AltaGas Ltd.	0.42	0.06	0.51	0.39	0.10	0.51
Canadian Utilities Limited	0.43	0.07	0.51	0.44	0.07	0.49
Emera Incorporated	0.44	0.04	0.53	0.42	0.03	0.55
Enbridge Inc.	0.54	0.04	0.42	0.53	0.05	0.43
Fortis Inc.	0.46	0.03	0.51	0.45	0.03	0.52
Hydro One Limited	0.52	0.00	0.48	0.50	0.01	0.49
TC Energy Corporation	0.50	0.03	0.48	0.28	0.05	0.67
Full Sample Average	0.49	0.03	0.48	0.46	0.04	0.50

(iii)

Schedule No. BV-5.4

US Sample Gas and Water

Capital Structure Summary of the US Sample Gas and Water

Company	DCF Capital Structure			3-Year Average Capital Structure		
	Common Equity - Value Ratio	Preferred Equity - Value Ratio	Debt - Value Ratio	Common Equity - Value Ratio	Preferred Equity - Value Ratio	Debt - Value Ratio
	[1]	[2]	[3]	[4]	[5]	[6]
Amer. States Water	0.80	0.00	0.20	0.82	0.00	0.18
Amer. Water Works	0.69	0.00	0.31	0.67	0.00	0.33
Artesian Res Corp	0.64	0.00	0.36	0.68	0.00	0.32
Atmos Energy	0.60	0.00	0.40	0.71	0.00	0.29
California Water	0.70	0.00	0.30	0.69	0.00	0.31
Chesapeake Utilities	0.75	0.00	0.25	0.69	0.00	0.31
Essential Utilities	0.64	0.00	0.36	0.69	0.00	0.31
Global Water Resources Inc	0.75	0.00	0.25	0.67	0.00	0.33
Middlesex Water	0.82	0.00	0.18	0.80	0.00	0.20
New Jersey Resources	0.59	0.00	0.41	0.67	0.00	0.33
NiSource Inc.	0.44	0.08	0.49	0.47	0.04	0.48
Northwest Natural	0.53	0.00	0.47	0.62	0.00	0.38
ONE Gas Inc.	0.48	0.00	0.52	0.68	0.00	0.32
SJW Group	0.52	0.00	0.48	0.63	0.00	0.37
South Jersey Inds.	0.47	0.00	0.53	0.48	0.00	0.52
Southwest Gas	0.63	0.00	0.37	0.62	0.00	0.38
Spire Inc.	0.48	0.03	0.49	0.55	0.03	0.43
Gas Sample Average	0.55	0.01	0.44	0.61	0.01	0.38
Water Sample Average	0.70	0.00	0.30	0.71	0.00	0.29

(iv) Les tableaux (*Panel*) A à H de l'annexe BV-4.3 contiennent les renseignements relatifs à l'évaluation des structures de capital selon la valeur au marché et au livre de chacune des entreprises de l'échantillon « *Canadian Sample* » en date du deuxième trimestre des années 2016 à 2021.

(v) Les tableaux (*Panel*) A à Q de l'annexe BV-5.3 contiennent les renseignements relatifs à l'évaluation des structures de capital selon la valeur au marché et au livre de chacune des entreprises des échantillons « *Gas Sample* » et « *Water Sample* » au deuxième trimestre des années 2016 à 2021.

À partir des données au 2^e trimestre 2021 et celles au 2^e trimestre 2019 tirées des tableaux des annexes BV-4.3 et BV-5.3 des références (iv) et (v), la Régie a produit les tableaux suivants mesurant la variation de la proportion des capitaux propres entre 2019 et 2021, calculée aux valeurs du marché. On y remarque notamment que les distributeurs gaziers américains (*en rouge*) ont vu leurs proportions de capitaux propres diminuer en moyenne de -10,9 points de pourcentage (pdp), soit entre +4,7 pdp pour Chesapeake à -27,2 pdp pour ONE Gas. Huit des neuf distributeurs gaziers ont vu leur proportion de capitaux propres diminuer entre 2019 et 2021, dont quatre de plus de 15 pdp.

**Demande conjointe relative à la fixation de taux de rendement
et de structures de capital, R-4156-2021**

Entreprises	Structure de capital- Valeurs au marché (VAM) à la fin du 2 ^e trimestre 2021 (DCF)			Structure de capital- Valeurs au marché (VAM) à la fin du 2 ^e trimestre 2019			Variation capitaux propres 2021/2019
	Capitaux propres	Actions privilégiées	Dettes	Capitaux propres	Actions privilégiées	Dettes	
Amer. States Water	80,5%	0,0%	19,5%	83,5%	0,0%	16,5%	-3,0%
Amer. Water Works	69,3%	0,0%	30,7%	69,1%	0,0%	30,9%	0,3%
Artesian Res Corp	64,4%	0,0%	35,6%	70,6%	0,0%	29,4%	-6,2%
Atmos Energy	60,4%	0,0%	39,6%	76,6%	0,0%	23,4%	-16,1%
California Water	69,8%	0,0%	30,2%	71,1%	0,0%	28,9%	-1,4%
Chesapeake Utilities	74,7%	0,0%	25,3%	69,9%	0,0%	30,1%	4,7%
Essential Utilities	63,8%	0,0%	36,2%	74,7%	0,0%	25,3%	-10,9%
Global Water Resources Inc	74,6%	0,0%	25,4%	67,2%	0,0%	32,9%	7,5%
Middlesex Water	81,8%	0,1%	18,1%	80,5%	0,2%	19,3%	1,3%
New Jersey Resources	59,2%	0,0%	40,8%	77,1%	0,0%	22,9%	-18,0%
NISource Inc.	43,8%	7,6%	48,6%	51,4%	4,2%	44,4%	-7,6%
Northwest Natural	52,7%	0,0%	47,3%	69,0%	0,0%	31,0%	-16,3%
ONE Gas Inc.	47,5%	0,0%	52,5%	74,7%	0,0%	25,3%	-27,2%
SJW Group	52,0%	0,0%	48,0%	75,4%	0,0%	24,6%	-23,4%
South Jersey Inds.	47,0%	0,0%	53,0%	50,9%	0,0%	49,1%	-3,9%
Southwest Gas	63,5%	0,0%	36,5%	65,7%	0,0%	34,3%	-2,2%
Spire Inc.	48,3%	3,1%	48,6%	60,0%	3,4%	36,6%	-11,7%
Moyenne Distributeurs gaziers	55,2%	1,2%	43,6%	66,1%	0,8%	33,0%	-10,9%
Moyenne Distributeurs d'eau	69,5%	0,0%	30,5%	74,0%	0,0%	26,0%	-4,5%

Entreprises	Structure de capital- Valeurs au marché (VAM) à la fin du 2 ^e trimestre 2021 (DCF)			Structure de capital- Valeurs au marché (VAM) à la fin du 2 ^e trimestre 2019			Variation capitaux propres 2021/2019
	Capitaux propres	Actions privilégiées	Dettes	Capitaux propres	Actions privilégiées	Dettes	
Algonquin Power & Utilities Corp.	60,6%	1,0%	38,5%	66,8%	1,5%	31,7%	-6,2%
AltaGas Ltd.	42,4%	6,3%	51,3%	37,9%	9,3%	52,8%	4,5%
Canadian Utilities Limited	42,5%	6,6%	50,9%	48,6%	7,0%	44,4%	-6,1%
Emera Incorporated	43,5%	3,6%	52,9%	44,2%	3,5%	52,4%	-0,7%
Enbridge Inc.	54,0%	4,2%	41,8%	55,9%	4,6%	39,5%	-1,9%
Fortis Inc.	45,9%	2,8%	51,3%	46,6%	3,3%	50,1%	-0,7%
Hydro One Limited	51,9%	0,0%	48,1%	49,7%	1,5%	48,8%	2,1%
TC Energy Corporation (*)	49,6%	2,8%	47,7%	51,9%	3,4%	44,8%	-2,3%
Moyenne Distributeurs canadiens (*)	48,8%	3,4%	47,8%	50,2%	4,3%	45,5%	-1,4%

(*) À noter que le cours de TC Energy a été modifié pour tenir compte du cours moyen de 63,52 \$ au 2^e trimestre 2021 et 65,47 \$ au 2^e trimestre 2019 plutôt que 30 \$ et 23 \$ figurant au Panel H du tableau BV-4.3 (pièce B-0015, p. 152)

À partir des données au 2^e trimestre 2021 tirées des tableaux des annexes BV-4.3 et BV-5.3 des références (iv) et (v), la Régie a également produit les deux tableaux suivants présentant les structures de capital (DCF) des entreprises de l'échantillon canadien et des échantillons américains basées sur les valeurs aux livres plutôt que les valeurs au marché.

**Demande conjointe relative à la fixation de taux de rendement
et de structures de capital, R-4156-2021**

Structure de capital - Échantillon des distributeurs canadiens			
Entreprises	Structure de capital - Valeurs aux livres (VAL)		
	Capitaux propres	Actions privilégiées	Dette
Algonquin Power & Utilities Corp.	42,2%	1,6%	56,2%
AltaGas Ltd.	39,8%	7,2%	53,0%
Canadian Utilities Limited	32,3%	9,5%	58,2%
Emera Incorporated	33,6%	4,9%	61,5%
Enbridge Inc.	41,7%	5,9%	52,4%
Fortis Inc.	39,4%	3,7%	56,9%
Hydro One Limited	43,5%	0,0%	56,5%
TC Energy Corporation	34,5%	4,2%	61,3%
Moyenne de l'échantillon canadien	38,4%	4,6%	57,0%

Structure de capital - Échantillons américains des distributeurs gaziers et d'eau			
Entreprises	Structure de capital- Valeurs aux livres (VAL)		
	Capitaux propres	Actions privilégiées	Dette
Amer. States Water	52,0%	0,0%	48,0%
Amer. Water Works	38,8%	0,0%	61,2%
Artesian Res Corp	50,0%	0,0%	50,0%
Atmos Energy	51,4%	0,0%	48,6%
California Water	47,2%	0,0%	52,8%
Chesapeake Utilities	51,7%	0,0%	48,3%
Essential Utilities	45,2%	0,0%	54,8%
Global Water Resources Inc	21,2%	0,0%	78,8%
Middlesex Water	52,7%	0,3%	47,0%
New Jersey Resources	40,9%	0,0%	59,1%
NiSource Inc.	30,5%	10,9%	58,6%
Northwest Natural	41,6%	0,0%	58,4%
ONE Gas Inc.	36,2%	0,0%	63,8%
SJW Group	39,8%	0,0%	60,2%
South Jersey Inds.	36,6%	0,0%	63,4%
Southwest Gas	50,4%	0,0%	49,6%
Spire Inc.	40,7%	4,0%	55,3%
Moyenne Distributeurs gaziers	42,2%	1,7%	56,1%
Moyenne Distributeurs d'eau	43,4%	0,0%	56,6%

(vi)

Emera Inc.

BILANS CONSOLIDÉS (suite)

Aux en millions de dollars canadiens	31 décembre 2020	31 décembre 2019
Passif et capitaux propres		
Passif à court terme		
Dette à court terme (note 23)	1 625 \$	1 537 \$
Tranche de la dette à long terme échéant à moins de un an (note 25)	1 382	501
Créditeurs	1 148	1 118
Instruments dérivés (notes 15 et 16)	251	268
Passifs réglementaires (note 7)	129	295
Autres passifs à court terme (note 24)	340	333
Passifs liés à des actifs détenus en vue de la vente (note 4)	-	114
	4 875	4 166
Passif à long terme		
Dette à long terme (note 25)	12 339	13 679
Impôts sur les bénéfices reportés (note 10)	1 629	1 285
Instruments dérivés (notes 15 et 16)	87	102
Passifs réglementaires (note 7)	1 832	1 886
Obligations au titre des prestations de retraite et des avantages complémentaires de retraite (note 21)	453	460
Autres passifs à long terme (notes 8 et 26)	781	764
Passifs à long terme liés aux actifs détenus en vue de la vente (note 4)	-	899
	17 121	19 075
Capitaux propres		
Actions ordinaires (note 11)	6 705	6 216
Actions privilégiées cumulatives (note 28)	1 004	1 004
Surplus d'apport	79	78
Cumul des autres éléments du résultat étendu (note 13)	(79)	95
Bénéfices non répartis	1 495	1 173
Total des capitaux propres d'Emera Inc.	9 204	8 566
Participations ne donnant pas le contrôle dans les filiales (note 29)	34	35
Total des capitaux propres	9 238	8 601
Total du passif et des capitaux propres	31 234 \$	31 842 \$
Engagements et autres éventualités (note 27)		

[nous soulignons]

(vii)

CONSOLIDATED BALANCE SHEETS

		December 31	
(millions of Canadian Dollars)	Note	2020	2019
ASSETS			
Current assets			
Cash and cash equivalents	18	781	977
Accounts receivable and contract assets	14	649	623
Finance lease receivables	15	9	8
Inventories	9	28	30
Prepaid expenses and other current assets		92	76
		1,559	1,714
Non-current assets			
Property, plant and equipment	10	17,563	17,212
Intangibles	11	656	629
Right-of-use assets	15	56	57
Investment in joint ventures	25	165	144
Finance lease receivables	15	164	167
Deferred income tax assets	7	72	66
Other assets		61	55
Total assets		20,296	20,044
LIABILITIES			
Current liabilities			
Bank indebtedness	18	3	-
Accounts payable and accrued liabilities		549	536
Lease liabilities	15	9	9
Provisions and other current liabilities	3	129	36
Long-term debt	12	166	158
		856	739
Non-current liabilities			
Deferred income tax liabilities	7	1,416	1,302
Retirement benefit obligations	13	411	399
Customer contributions	14	1,756	1,720
Lease liabilities	15	47	49
Other liabilities		115	106
Long-term debt	12	8,887	8,808
Total liabilities		13,488	13,123
EQUITY			
Equity preferred shares	16	1,483	1,483
Class A and Class B share owners' equity			
Class A and Class B shares	17	1,232	1,228
Contributed surplus		8	16
Retained earnings		3,928	4,054
Accumulated other comprehensive loss		(30)	(47)
Total equity attributable to equity owners of the Company		6,621	6,734
Non-controlling interests	26	187	187
Total equity		6,808	6,921
Total liabilities and equity		20,296	20,044

See accompanying Notes to Consolidated Financial Statements.

[nous soulignons]

Demandes :

- 6.1 Veuillez confirmer que les proportions présumées de capitaux propres énoncés à la référence (i) sont basées sur les valeurs aux livres et que les structures de capital des échantillons d'entreprises comparables présentées à la figure 7 (référence (i)) sont calculés à partir des valeurs au marché telles qu'établies à la fin du 2^e trimestre de 2021 pour la structure de capital DCF et correspondent aux moyennes des échantillons présentés aux références (ii) et (iii). Si non, veuillez expliquer.

Réponse:

Not confirmed. All capital structures shown in (i) Exhibit EGI-1, B-0015 (Villadsen Direct, Figure 7) are based on market value capital structure and corresponds to the average capital structures shown in (ii) and (iii). Confirmed that the DCF values are based on Q2, 2021.

- 6.2 Veuillez préciser et expliquer les valeurs utilisées ainsi que les calculs permettant d'affirmer « *the common equity ratios for the Natural Gas sample is almost 10 percent higher than that of the Utilities* » à la référence (i).

Réponse:

In making this statement, Dr. Villadsen compared the data in (i) above to those provided in Figure 5 of Exhibit EGI-1, B-0015 (Villadsen Direct). Specifically, the currently allowed equity percentage for the Utilities range from 38.5% (plus 7% preferred) to 46%, whereas the average for the Natural Gas sample is 55% as measured at the end of Q2, 2021.

- 6.3 Veuillez préciser et expliquer les valeurs utilisées ainsi que les calculs permettant d'affirmer « *an equity investment in the Utilities is subject to a capital structure with a debt component that is about 6 to 15 percentage points higher compared to an equity investment in other publicly traded natural gas utilities in North America* » à la référence (i).

Réponse:

As shown in Figure 6 of Exhibit EGI-1, B-0015 (Villadsen Direct), the average allowed equity percentage for natural gas utilities is about 52 percent in 2020. In comparison to the allowed equity percentages for the Utilities: 38.5% (plus 7% preferred) for Énergir, 46% for Intragaz, and 40% for Gazifère. The difference therefore becomes 13.5%, 6%, and 12%, for Énergir, Intragaz, and Gazifère, respectively. Thus, the statement should reflect a range of 6% to 13.5%.

- 6.4 Veuillez expliquer le raisonnement permettant de justifier la comparaison entre elles des structures de capital calculées selon les valeurs aux livres avec des structures de capital calculées selon les valeurs au marché.

Réponse:

Dr. Villadsen is not comparing market and book value capital structures. The CAPM and DCF models rely on market data to estimate the cost of equity – implicit in which is the market value of debt and equity. Consequently, to compare the return investors expect on market value equity and that allowed on the equity portion of the rate base, it is necessary to translate the market-value based equity return to one that applies to the equity portion of the rate base. At no point in time does Dr. Villadsen suggest that a rate regulated company should be regulated on the market value of its equity.

- 6.4.1. Veuillez préciser la signification qui peut être attribuée à un écart résultant de la comparaison entre des structures de capital calculées selon les valeurs aux livres et des structures de capital calculées selon les valeurs aux marchés.

Réponse:

Dr. Villadsen is not sure what is meant by this question. Please see the response to 6.4 above.

- 6.5 Veuillez confirmer la validité des données compilées aux tableaux de la référence (v) ou, le cas échéant, présenter des tableaux corrigés, en précisant les corrections requises.

Réponse:

Dr. Villadsen is not certain, how the tables in reference (v) was compiled, but refers to the confidential excel sheets submitted as R-4156-2021-B-0015, Exhibit BV-4 : Canadian Cost of Capital model and Exhibit BV-5 : U.S. Cost of Capital Model, Tab ‘Cap_Struct_Book.’

The relevant tables are pasted below.

**Demande conjointe relative à la fixation de taux de rendement
et de structures de capital, R-4156-2021**

Book Value of Equity and Debt

Company	Q2 2021 Book Equity	Q2 2021 Pref. Equity	Q2 2021 Book Debt	Total
Algonquin Power & Utilities Cor	42.2%	1.6%	56.2%	100%
AltaGas Ltd.	39.8%	7.2%	53.0%	100%
Canadian Utilities Limited	32.3%	9.5%	58.2%	100%
Emera Incorporated	33.6%	4.9%	61.5%	100%
Enbridge Inc.	41.7%	5.9%	52.4%	100%
Fortis Inc.	39.4%	3.7%	56.9%	100%
Hydro One Limited	43.5%	0.0%	56.5%	100%
TC Energy Corporation	34.5%	4.2%	61.3%	100%
Average	38.4%	4.6%	57.0%	100%

Sources and Notes: Table No. Schedule No. BV-4.3

Book Value of Equity and Debt

Company	Q2 2021 Book Equity	Q2 2021 Pref. Equity	Q2 2021 Book Debt	Total
Amer. States Water	52.8%	0.0%	47.2%	100%
Amer. Water Works	38.8%	0.0%	61.2%	100%
Artesian Res Corp	50.8%	0.0%	49.2%	100%
Atmos Energy	51.6%	0.0%	48.4%	100%
California Water	45.1%	0.0%	54.9%	100%
Chesapeake Utilities	51.3%	0.0%	48.7%	100%
Essential Utilities	45.5%	0.0%	54.5%	100%
Global Water Resources Inc	21.1%	0.0%	78.9%	100%
Middlesex Water	53.7%	0.3%	46.0%	100%
New Jersey Resources	43.1%	0.0%	56.9%	100%
NiSource Inc.	32.2%	5.6%	62.2%	100%
Northwest Natural	43.3%	0.0%	56.7%	100%
ONE Gas Inc.	36.0%	0.0%	64.0%	100%
SJW Group	40.0%	0.0%	60.0%	100%
South Jersey Inds.	34.3%	0.0%	65.7%	100%
Southwest Gas	50.1%	0.0%	49.9%	100%
Spire Inc.	42.3%	4.1%	53.6%	100%

Sources and Notes:

Values calculated from Schedule No. BV-3, Panels A to Q.

- 6.5.1. Veuillez corriger le tableau Panel H de la pièce B-0015, BV-4.3, ou le cas échéant, expliquer l'ajustement apporté à l'historique du prix de l'action de TC Energy Corp par rapport au cours du marché.

**Demande conjointe relative à la fixation de taux de rendement
et de structures de capital, R-4156-2021**

Réponse:

TC Energy's historic stock price was incorrectly pulled from Bloomberg in the "EOY Prices" section of tab "Raw_TRP" in Exhibit EGI-1, B-0016. As a result, the market value of common equity calculations in Panel H were incorrectly calculated (note, the column "DCF Capital Structure was calculated using the correct TC Energy stock price and was not affected by the inconsistency). Dr. Villadsen has corrected this inconsistency and provided a revised Panel H below.

Please also see confidential attachment:

- EGI-18.3.1.

Schedule No. BV-4.3

Market Value of the Canadian Sample

Panel H: TC Energy Corporation

(SMM)

	DCF Capital Structure	2nd Quarter, 2021	2nd Quarter, 2020	2nd Quarter, 2019	2nd Quarter, 2018	2nd Quarter, 2017	2nd Quarter, 2016	Notes
MARKET VALUE OF COMMON EQUITY								
Book Value, Common Shareholder's Equity	\$28,522	\$28,522	\$28,478	\$26,034	\$23,283	\$20,506	\$13,828	[a]
Shares Outstanding (in millions) - Common	979	979	940	929	904	871	703	[b]
Price per Share - Common	\$64	\$64	\$59	\$65	\$56	\$63	\$56	[c]
Market Value of Common Equity	\$62,187	\$62,187	\$55,610	\$60,826	\$50,831	\$54,654	\$39,690	[d] = [b] x [c].
Market Value of GP Equity	\$0	\$0	\$0	\$0	\$0	\$0	\$0	[e] = See Sources and Notes.
Total Market Value of Equity	\$62,187	\$62,187	\$55,610	\$60,826	\$50,831	\$54,654	\$39,690	[f] = [d] + [e]
Market to Book Value of Common Equity	2.18	2.18	1.95	2.34	2.18	2.67	2.87	[g] = [f] / [a].
MARKET VALUE OF PREFERRED EQUITY								
Book Value of Preferred Equity	\$3,487	\$3,487	\$3,980	\$3,980	\$3,980	\$3,980	\$2,992	[h]
Market Value of Preferred Equity	\$3,487	\$3,487	\$3,980	\$3,980	\$3,980	\$3,980	\$2,992	[i] = [h].
MARKET VALUE OF DEBT								
Current Assets	\$8,345	\$8,345	\$5,704	\$5,676	\$5,430	\$4,899	\$4,608	[j]
Current Liabilities	\$13,721	\$13,721	\$9,780	\$12,966	\$10,431	\$10,052	\$9,851	[k]
Current Portion of Long-Term Debt	\$6,013	\$6,013	\$2,706	\$2,832	\$2,812	\$3,270	\$773	[l]
Net Working Capital	\$637	\$637	\$(1,370)	\$(4,458)	\$(2,189)	\$(1,883)	\$(4,470)	[m] = [j] - ([k] - [l]).
Notes Payable (Short-Term Debt)	\$1,692	\$1,692	\$1,457	\$4,568	\$2,359	\$1,559	\$1,421	[n]
Levered Short-Term Debt	\$0	\$0	\$1,370	\$4,458	\$2,189	\$1,559	\$1,421	[o] = See Sources and Notes.
Long-Term Debt	\$44,590	\$44,590	\$46,369	\$42,873	\$41,867	\$38,494	\$41,416	[p]
Book Value of Long-Term Debt	\$50,603	\$50,603	\$50,445	\$50,163	\$46,868	\$43,323	\$43,610	[q] = [l] + [o] + [p].
Adjustment to Book Value of Long-Term Debt	\$9,169	\$9,169	\$6,202	\$2,313	\$5,439	\$4,897	#N/A	[r] = See Sources and Notes.
Market Value of Long-Term Debt	\$59,772	\$59,772	\$56,647	\$52,476	\$52,307	\$48,220	N/A	[s] = [q] + [r].
Market Value of Debt	\$59,772	\$59,772	\$56,647	\$52,476	\$52,307	\$48,220	N/A	[t] = [s].
MARKET VALUE OF FIRM								
	\$125,446	\$125,446	\$116,237	\$117,282	\$107,118	\$106,854	N/A	[u] = [f] + [i] + [t].
DEBT AND EQUITY TO MARKET VALUE RATIOS								
Common Equity - Market Value Ratio	49.57%	49.57%	47.84%	51.86%	47.45%	51.15%	N/A	[v] = [f] / [u].
Preferred Equity - Market Value Ratio	2.78%	2.78%	3.42%	3.39%	3.72%	3.72%	N/A	[w] = [i] / [u].
Debt - Market Value Ratio	47.65%	47.65%	48.73%	44.74%	48.83%	45.13%	N/A	[x] = [t] / [u].

Sources and Notes:

Bloomberg as of 06/30/2021

Capital structure from 2nd Quarter, 2021 calculated using respective balance sheet information and 15-day average prices ending at period end.

The DCF Capital structure is calculated using 2nd Quarter, 2021 balance sheet information and a 15-trading day average closing price ending on 6/30/2021.

Prices are reported in Workpaper #1 to Schedule No. BV-4.6.

[e] = Market Value of GP equity is not estimated here.

[o] =

(1): 0 if [m] > 0.

(2): The absolute value of [m] if [m] < 0 and |[m]| < [n].

(3): [n] if [m] < 0 and |[m]| > [n].

[r]: Difference between fair value of Long-Term debt and carrying amount of Long-Term debt per company 10-K. Data for adjustment is from 2016 to 2020 10-Ks.

The historic capital structure information on Panel H is used to calculate the market value capital structure for the CAPM and ECAPM methodologies. As a result of making this correction, Dr. Villadsen's CAPM and ECAPM increased by 0.20% to 0.52%. Below is a corrected version of Figure 25 in Dr. Villadsen's Direct Testimony (Exhibit EGI-1, B-0015), which summarizes the CAPM and ECAPM results for the Canadian Utility Sample at 40% and 46% equity capital structures.

This change does not impact Dr. Villadsen's recommended ROE or capital structure recommendations for Énergir, Intragaz, or Gazifère. The corrected CAPM and ECAPM results from the Canadian sample are in line with the CAPM and ECAPM results from the natural gas and water utilities, providing further support to Dr. Villadsen's recommendations.

To avoid confusion, Dr. Villadsen has also adjusted the naming convention for each CAPM and ECAPM methodologies (*e.g.*, "Hamada Adjustment Without Taxes") to conform to that displayed in the natural gas and water proxy summary tables (Figure 26 and Figure 27 in Dr. Villadsen's Direct Testimony). This is simply a typographical change in the summary table and does not change the underlying calculations as both the US and Canadian models use the same methodologies for the CAPM and ECAPM.

Corrected Figure 25 Canadian Utility Sample CAPM Results at 40% and 46% Villadsen Direct Testimony (Exhibit EGI-1, B-0015).

Estimated Return on Equity	Deemed Common Equity Percentage			
	40.0%		46.0%	
	Scenario 1 [1]	Scenario 2 [2]	Scenario 1 [1]	Scenario 2 [2]
Canadian Sample				
<i>Financial Risk Adjusted Method</i>				
CAPM	8.9%	11.2%	8.0%	10.1%
ECAPM ($\alpha = 1.5\%$)	9.1%	11.4%	8.2%	10.2%
<i>Hamada Adjustment Without Taxes</i>				
CAPM	8.8%	11.3%	8.0%	10.1%
ECAPM ($\alpha = 1.5\%$)	8.6%	11.1%	8.0%	10.2%
<i>Hamada Adjustment With Taxes</i>				
CAPM	8.5%	10.8%	7.8%	9.9%
ECAPM ($\alpha = 1.5\%$)	8.4%	10.7%	7.9%	10.0%

Sources and Notes:

Scenario 1: Long-Term Risk Free Rate of 2.47%, Long-Term Market Risk Premium of 5.68%.

Scenario 2: Long-Term Risk Free Rate of 2.30%, Long-Term Market Risk Premium of 8.05%.

- 6.6 Veuillez préciser si la réduction de 10,9 points de pourcentage (pdp) de la proportion de capitaux propres des distributeurs gaziers américains calculée selon les valeurs au marché entre juin 2019 et juin 2021, représente une hausse significative du risque financier de ces derniers. Si non, veuillez expliquer.

Réponse:

Confirmed that the reduction in equity for U.S. gas distributors substantially increased the

U.S. gas distributors' leverage and hence financial risk. Of note, the reduction in share price did not take place in a vacuum but occurred during the COVID-19 pandemic and other initiatives regarding natural gas utilities as discussed in R-4156-2021-B-0015, pp. and R-4156-2021-B-0016, pp. 17-20.

6.6.1. Veuillez élaborer sur les raisons pouvant expliquer cette réduction de 10,9 pdp de la proportion de capitaux propres des distributeurs gaziers américains sur à peine deux années, et notamment les réductions de 27,2 pdp de ONE Gas, de 18,0 pdp de New Jersey Resources, de 16,3 pdp de Northwest Natural et de 16,1 pdp d'Atmos Energy.

Réponse:

As noted in the response to 6.6. above, the reduction in the U.S. gas distribution companies share price took place during the COVID-19 pandemic, which impacted both financial markets and the utilities operations. Dr. Villadsen has not studied the movement in the stock price of individual U.S. gas distribution companies.

6.6.2. Veuillez préciser si les réductions de 27,2 pdp de ONE Gas, de 18,0 pdp de New Jersey Resources, de 16,3 pdp de Northwest Natural ou la réduction de 23,4 pdp du service d'eau SJW Group risquent d'entraîner une réduction de la cote de crédit A de New Jersey Resources et SJW Group, ou la cote BBB de ONE Gas et de Northwest Natural. Veuillez expliquer de quelle manière.

Réponse:

Three of the four entities listed have been downgraded in the last two-three years.

ONE Gas was downgraded by both Standard & Poor's and Moody's in February 2021.

New Jersey Resources was downgraded by Moody's in March 2020. ([New Jersey Natural Gas Company | Reports | Moody's \(moody.com\)](#))

Northwest Natural was downgraded in 2019.

SJW Group: No change in rating to date. According to Standard & Poor's, November 23, 2021 report (submitted in response to the Regie's request IR 61)

We expect SJW Group (SJWG) to effectively manage regulatory risk through the use of various regulatory mechanisms across multiple jurisdictions. The company's regulatory risk management reflects credit-supportive mechanisms

across multiple jurisdictions, including use of forward-test years, decoupling, and various balancing accounts that track and recover various costs, all of which promote generally stable revenue and cash flow.

- 6.6.3. Veuillez commenter si la variation plus grande des structures de capital des distributeurs gaziers et d'eau américaine par rapport à celle des distributeurs canadiens, telles qu'observées à la dernière colonne des deux premiers tableaux de la référence (v), pourrait dénoter une plus grande volatilité des titres des distributeurs américains, par rapport aux titres des distributeurs canadiens.

Réponse:

Dr. Villadsen does not know what explains the larger change in stock price for the Natural Gas sample than for the Canadian sample, but notes that the Canadian sample on average has at least as large a revenue and asset base in the U.S. as in Canada (See R-4156-2021-B-0015, Exhibit BV-12_Confidential for details). Dr. Villadsen also notes that the average percentage of regulated assets is 92.2% with the percentage of regulated assets ranging from 78.6% to 100%, while the Canadian sample on average have 87.1% regulated assets and the level ranging from 63.5% to 99.5% (See R-4156-2021-B-0015, Exhibit BV-6_Confidential for details). Additionally, Dr. Villadsen notes that several of the companies included in the Canadian sample trade on US stock exchanges (Algonquin Power & Utilities, Enbridge Inc., Fortis Inc., TC Energy). For those reasons, she cannot conclude that U.S. distributor securities have greater volatility than those in Canada.

- 6.7 Veuillez confirmer que la valeur aux livres de la dette à long terme, des actions privilégiées et des capitaux propres d'une entreprise telle qu'affichée aux états financiers, plutôt qu'à la valeur au marché, reflète le plus fidèlement le total des montants reçus des investisseurs lors des émissions de dettes et d'actions, ainsi que les bénéfices réinvestis au fil des années afin de financer les activités de cette entreprise. Si non, veuillez expliquer.

Réponse:

Not confirmed. The amounts listed in the financial statements reflect accounting measures of equity and debt as promulgated by accounting standards in Canada or the U.S. It is Dr. Villadsen's understanding that the measurement of debt and equity includes amounts originally transferred from investors plus or minus any discount/premia, any impairments, or other required accounting changes.

- 6.8 La Régie constate que l'écart entre la proportion des capitaux propres de l'échantillon

canadien par rapport aux distributeurs gaziers américains diminue significativement lorsque les structures de capital sont calculées à partir des valeurs aux livres (référence (iv)) plutôt qu'à partir des valeurs au marché (références (ii) et (iii)), passant de 6,0 points de pourcentage (pdp) (49 % vs. 55 % références (ii) et (iii)) à 3,8 pdp (38,4 % vs. 42,2 % référence (v)). La Régie constate que cet écart diminue encore davantage, soit de 21 pdp à 5 pdp, par rapport aux distributeurs d'eau. Veuillez expliquer quelle importance et quelle considération doivent être accordées aux comparaisons des structures de capital calculées selon les valeurs aux livres.

Réponse:

The capital structure as measured on a book value basis informs how the company keep its accounting books and is of relevance for determining most credit metrics and hence informs Dr. Villadsen's analysis of credit metrics. It is the market value capital structure that is relevant for the purpose of estimating the cost of capital as made clear in the well-known textbook of professors Brealey, Myers and Allen, 'Principles of Corporate Finance. ' 10th Edition, 2017 p. 232 :

Suppose the project has the same market risk as the company's existing assets. In this case, the project cash flows can be discounted at the *company cost of capital*. The company cost of capital is the rate of return that investors require on a portfolio of all of the company's outstanding debt and equity. It is usually calculated as an after-tax *weighted-average cost of capital* (after-tax WACC), that is, as the weighted average of the after-tax cost of debt and the cost of equity. The weights are the relative market values of debt and equity. The cost of debt is calculated after tax because interest is a tax-deductible expense.

Similarly, the text makes clear that when considering the cost of equity from a sample as it applies to a target entity, then the beta needs to be unlevered and relevered using market value capital structures. Brealey, Myers and Allen (2017) p. 485 again use the market-value balance sheet to determine the cost of equity at a different capital structure:

¹⁵ Here's why the formulas work with continuous rebalancing. Think of a market-value balance sheet with assets and interest tax shields on the left and debt and equity on the right, with $D + E = PV(\text{assets}) + PV(\text{tax shield})$. The total risk (beta) of the firm's debt and equity equals the blended risk of $PV(\text{assets})$ and $PV(\text{tax shield})$

$$\beta_D \frac{D}{V} + \beta_E \frac{E}{V} = \alpha \beta_A + (1 - \alpha) \beta_{\text{tax shield}} \quad (1)$$

where α is the proportion of the total firm value from its assets and $1 - \alpha$ is the proportion from interest tax shields. If the firm readjusts its capital structure to keep D/V constant, then the beta of the tax shield must be the same as the beta of the assets. With rebalancing, an $x\%$ change in firm value V changes debt D by $x\%$. So the interest tax shield $T_c r_D D$ will change by $x\%$ as well. Thus the risk of the tax shield must be the same as the risk of the firm as a whole:

$$\beta_{\text{tax shield}} = \beta_A = \beta_D \frac{D}{V} + \beta_E \frac{E}{V} \quad (2)$$

This is our unlevering formula expressed in terms of beta. Since expected returns depend on beta:

$$r_A = r_D \frac{D}{V} + r_E \frac{E}{V} \quad (3)$$

Rearrange formulas (2) and (3) to get the relevering formulas for β_E and r_E .

$$\beta_E = \beta_A + (\beta_A - \beta_D) D/E$$

Dr. Villadsen concurs with the application in the text of Brealey, Myers and Allen, which consistently refers to market values when estimating the cost of capital.

6.8.1. Veuillez commenter l'importance des écarts observés, de 3,8 pdp et de 5 pdp, entre les proportions des capitaux propres à l'intérieur des structures de capital de l'échantillon d'entreprises comparables canadiennes et celles des échantillons américains, lorsque calculées selon les valeurs aux livres.

Réponse:

Dr. Villadsen cannot speculate about the reasons for the differences in capital structure or the difference in market vs. book value. However, Dr. Villadsen refers to her response in 6.6.3, which notes that the Canadian sample is much more diverse than is the U.S. Natural Gas sample.

6.9 La Régie constate qu'aux états financiers vérifiés par les firmes d'experts comptables Ernst & Young (pour Emera, référence (vi)) et PricewaterhouseCoopers pour Canadian Utilities, référence (vii), entre autres, les actions privilégiées sont incluses dans le total des capitaux propres des entreprises. Veuillez expliquer pourquoi les actions privilégiées se trouvent ainsi regroupées à l'avoir propre des actionnaires ordinaires aux états financiers des distributeurs canadiens.

Réponse:

Dr. Villadsen is not an expert in Canadian financial (SEDAR) reporting, but notes that both companies have a separate line item for preferred shares. The preferred shares are summed to obtain total equity (as is ‘cumulative other comprehensive loss’). According to KPMG ([IFRS vs. US GAAP: Liability/equity classification \(kpmg.us\)](#)) :

Preference shares

The proper classification of preference shares depends on their respective terms and conditions. For example, preference shares that provide for redemption at the option of the holder give rise to a contractual obligation and therefore are classified as financial liability.

If dividend rights attached to the preference share are discretionary, the preference share is classified as equity. If they are not, then the preference share or a portion of it is classified as a financial liability. A preference dividend in which the contractual dividend payment is contingent on the availability of future distributable profits differs from a discretionary dividend. With a discretionary dividend, the issuer is able to avoid the payment of dividends indefinitely. However, the payment of a contingent dividend cannot be avoided indefinitely. Consequently, contingent dividends are classified as a financial liability.

Dr. Villadsen takes the presentation in the companies’ financial statement to mean that the characteristics of the preferred shares are such that they for accounting purposes are classified as equity. That does not mean that credit rating agencies or financial analysts consider preferred shares as equivalent to common equity. It is common to consider such instruments as having characteristics of both debt and equity for financial analysis purposes.

- 6.10 Veuillez expliquer quel type de considération les investisseurs pourraient accorder à la présence d’actions privilégiées au bilan des distributeurs canadiens, par opposition à la présence de dette ou de l’avoir propre des actionnaires ordinaires, dans l’appréciation du risque financier des entreprises.

Réponse:

In Dr. Villadsen opinion and consistent with the treatment by some analysts such as Zack’s ([Reason to Treat Preferred Stock As Debt Rather Than Equity \(zacks.com\)](#)), preferred shares are a hybrid security that is partly debt and partly equity. However, Dr. Villadsen treats the preferred equity of the sample companies as debt, when applying the financial risk adjustment or the Hamada method to be conservative. This leads to a lower ROE than would a treatment as equity.

6.10.1. Veuillez indiquer si le fait que la proportion des actions privilégiées dans la structure de capital est plus élevée pour les entreprises de l'échantillon canadien que celle de la moyenne des deux échantillons américains proposés, tel qu'observé à la référence (v), a été ou devrait être pris en considération dans l'appréciation du risque financier des entreprises aux fins du présent dossier. Si oui, veuillez expliquer de quelle façon. Si non, veuillez expliquer pourquoi.

Réponse:

Dr. Villadsen did consider the presence of preferred shares and made the decision to conservatively treat the shares as debt in her market value consideration of the sample's leverage, which is thereby increased and thus leads to a lower cost of equity than a treatment of part or full equity would. However, Dr. Villadsen observes that if the amount was treated as equity, then the Canadian sample's equity percentage increases by at 3 or 4 percentage points for the DCF- and CAPM-based models, respectively. The result would be an increase in the estimated cost of equity for the Utilities based on the Canadian sample.

7. **Références :**
- (i) Pièce BCUC Generic Cost of Capital, [Exhibit A2-3, Regulated Utility Cost of Capital : Theory and Canadian Practice](#), Continental Economics Inc., p. 24 et 25;
 - (ii) Pièce [B-0015](#), p. 180;
 - (iii) Site SEC. gov, Edgar data, [Rapport Form 10-Q au 30 juin 2021 de Northwest Natural Holding Company](#), p. 6 et 7;
 - (iv) Pièces [B-0089](#), [B-0090](#), [B-0091](#), [B-0092](#), [B-0093](#), [B-0094](#), [B-0095](#), [B-0096](#), [B-0097](#), [B-0098](#), [B-0099](#), [B-0100](#), [B-0101](#), [B-0102](#), [B-0103](#), [B-0104](#), [B-0105](#), rapports Form 10-K de la dernière année fiscale de chacune des entreprises américaines;
Site SEDAR, [États financiers annuels vérifiés – français, au 31 décembre 2020, Algonquin Power & Utilities Corp.](#), p. 11 et 12;
Site SEDAR, [États financiers annuels vérifiés – français, au 31 décembre 2020, AltaGas Ltd.](#), p. 8 et 9;
Site SEDAR, [États financiers annuels vérifiés – français, au 31 décembre 2020, Canadian Utilities Ltd.](#), p. 10;
Site SEDAR, [États financiers annuels vérifiés – français, au 31 décembre 2020, Emera Inc.](#), p. 15 et 16;
Site SEDAR, [États financiers annuels vérifiés – français, au 31 décembre 2020, Enbridge Inc.](#), p. 11;
Site SEDAR, [États financiers annuels vérifiés – français, au 31 décembre 2020, Fortis Inc.](#), p. 8;

- Site SEDAR, [États financiers annuels vérifiés – français, au 31 décembre 2020, Hydro One Ltd.](#), p. 5;
Site web [TCEnergy.com, Rapport annuel 2020](#), p. 136;
(v) Site Web [Investopedia, Liability Definition](#), consulté le 23 décembre 2021;
(vi) Site Web [AnalystPrep.com, cfa level 1 exam, Calculate and Interpret Leverage and Coverage Ratios](#), consulté le 23 décembre 2021;
(vii) Pièce [B-0015](#), p. 11;
(viii) Pièce [B-0015](#), p. 14;
(ix) Pièce [B-0015](#), p. 15.

Préambule :

(i) « *There are several approaches to address the issue of using international data. If the regulatory framework of a foreign country is similar to the local framework, then there is generally no reason to exclude comparable companies located in the foreign country from the proxy group. For example, FERC generally allows Canadian natural gas pipeline companies to be included in proxy groups when setting allowed ROE values for U.S. natural gas pipelines, because the National Energy Board follows a similar approach as FERC in setting allowed ROE. Similarly, FERC has allowed Canadian electric utilities to be included for purposes of establishing allowed ROE values for electric transmission companies.*

This does not mean regulators should not weigh the results of external data carefully. For example, Canadian and U.S. electric utilities have different accounting standards, which can affect comparisons of historical and expected cash flows. Different treatment of certain costs, such as the use of deferral accounts, can affect a regulated utility's business and financial risk. Moreover, differences in overall corporate structure, including the presence of regulated and unregulated subsidiaries, vertical integration, and so forth can affect business and financial risk.

In making decisions about which extra-jurisdictional companies can be allowed in a proxy group, regulators should keep these factors in mind ». [nous soulignons]

(ii)

**Demande conjointe relative à la fixation de taux de rendement
et de structures de capital, R-4156-2021**

Schedule No. BV-5.3

Market Value of the US Sample Gas and Water

Panel L: Northwest Natural

(\$MM)

	DCF Capital Structure	2nd Quarter, 2021	2nd Quarter, 2020	2nd Quarter, 2019	2nd Quarter, 2018	2nd Quarter, 2017	2nd Quarter, 2016	Notes
MARKET VALUE OF COMMON EQUITY								
Book Value, Common Shareholder's Equity	\$923	\$923	\$884	\$877	\$760	\$865	\$800	[a]
Shares Outstanding (in millions) - Common	31	31	31	30	29	29	28	[b]
Price per Share - Common	\$54	\$54	\$56	\$69	\$61	\$62	\$61	[c]
Market Value of Common Equity	\$1,643	\$1,643	\$1,724	\$2,094	\$1,770	\$1,766	\$1,684	[d] = [b] x [c]
Market Value of GP Equity	\$0	\$0	\$0	\$0	\$0	\$0	\$0	[e] = See Sources and Notes
Total Market Value of Equity	\$1,643	\$1,643	\$1,724	\$2,094	\$1,770	\$1,766	\$1,684	[f] = [d] + [e]
Market to Book Value of Common Equity	1.78	1.78	1.95	2.39	2.33	2.04	2.10	[g] = [f] / [a]
MARKET VALUE OF PREFERRED EQUITY								
Book Value of Preferred Equity	\$0	\$0	\$0	\$0	\$0	\$0	\$0	[h]
Market Value of Preferred Equity	\$0	\$0	\$0	\$0	\$0	\$0	\$0	[i] = [h]
MARKET VALUE OF DEBT								
Current Assets	\$274	\$274	\$316	\$239	\$181	\$192	\$202	[j]
Current Liabilities	\$572	\$572	\$487	\$307	\$298	\$235	\$314	[k]
Current Portion of Long-Term Debt	\$62	\$62	\$36	\$109	\$75	\$62	\$25	[l]
Net Working Capital	(\$237)	(\$237)	(\$134)	\$41	(\$42)	\$19	(\$87)	[m] = [j] - ([k] - [l])
Notes Payable (Short-Term Debt)	\$240	\$240	\$233	\$20	\$47	\$0	\$153	[n]
Adjusted Short-Term Debt	\$237	\$237	\$134	\$0	\$42	\$0	\$87	[o] = See Sources and Notes
Long-Term Debt	\$996	\$996	\$999	\$807	\$684	\$658	\$570	[p]
Book Value of Long-Term Debt	\$1,294	\$1,294	\$1,170	\$915	\$801	\$720	\$682	[q] = [l] + [o] + [p]
Adjustment to Book Value of Long-Term Debt	\$181	\$181	\$76	\$26	\$73	\$74	\$0	[r] = See Sources and Notes
Market Value of Long-Term Debt	\$1,475	\$1,475	\$1,246	\$941	\$874	\$794	\$682	[s] = [q] + [r]
Market Value of Debt	\$1,475	\$1,475	\$1,246	\$941	\$874	\$794	\$682	[t] = [s]
MARKET VALUE OF FIRM								
	\$3,119	\$3,119	\$2,970	\$3,035	\$2,644	\$2,560	\$2,366	[u] = [f] + [i] + [t]
DEBT AND EQUITY TO MARKET VALUE RATIOS								
Common Equity - Market Value Ratio	52.70%	52.70%	58.05%	68.98%	66.93%	68.98%	71.19%	[v] = [f] / [u]
Preferred Equity - Market Value Ratio	-	-	-	-	-	-	-	[w] = [i] / [u]
Debt - Market Value Ratio	47.30%	47.30%	41.95%	31.02%	33.07%	31.02%	28.81%	[x] = [t] / [u]

(iii)

**Demande conjointe relative à la fixation de taux de rendement
et de structures de capital, R-4156-2021**

NORTHWEST NATURAL HOLDING COMPANY
CONSOLIDATED BALANCE SHEETS (UNAUDITED)

<i>In thousands</i>	June 30, 2021	June 30, 2020	December 31, 2020
Assets:			
Current assets:			
Cash and cash equivalents	\$ 20,084	\$ 137,057	\$ 30,168
Accounts receivable	60,713	35,196	88,083
Accrued unbilled revenue	13,592	15,393	57,949
Allowance for uncollectible accounts	(3,283)	(1,592)	(3,219)
Regulatory assets	60,672	30,021	31,745
Derivative instruments	46,168	5,996	13,678
Inventories	39,024	44,009	42,691
Gas reserves	8,444	13,646	11,409
Income taxes receivable	6,000	—	6,000
Other current assets	22,427	20,318	44,741
Discontinued operations - current assets (Note 17)	—	16,392	—
Total current assets	273,841	316,436	323,245
Non-current assets:			
Property, plant, and equipment	3,849,792	3,608,902	3,734,039
Less: Accumulated depreciation	1,093,863	1,062,299	1,079,269
Total property, plant, and equipment, net	2,755,929	2,546,603	2,654,770
Gas reserves	29,852	41,459	34,484
Regulatory assets	330,710	324,358	348,927
Derivative instruments	7,912	3,958	6,135
Other investments	47,725	62,130	49,259
Operating lease right of use asset, net	76,294	78,566	77,446
Assets under sales-type leases	141,408	146,208	143,759
Goodwill	69,313	70,183	69,225
Other non-current assets	50,516	51,446	49,129
Total non-current assets	3,509,659	3,324,911	3,433,134
Total assets	\$ 3,783,500	\$ 3,641,347	\$ 3,756,379

NORTHWEST NATURAL HOLDING COMPANY
CONSOLIDATED BALANCE SHEETS (UNAUDITED)

<i>In thousands, including share information</i>	June 30, 2021	June 30, 2020	December 31, 2020
Liabilities and equity:			
Current liabilities:			
Short-term debt	\$ 240,000	\$ 233,000	\$ 304,525
Current maturities of long-term debt	60,274	35,209	95,344
Accounts payable	97,854	79,903	97,996
Taxes accrued	15,143	18,535	13,812
Interest accrued	7,425	7,234	7,441
Regulatory liabilities	103,210	41,126	50,362
Derivative instruments	3,393	3,067	4,198
Operating lease liabilities	1,228	931	1,105
Other current liabilities	43,946	54,323	52,330
Discontinued operations - current liabilities (Note 17)	—	13,574	—
Total current liabilities	572,473	486,902	627,083
Long-term debt	915,501	918,887	860,081
Deferred credits and other non-current liabilities:			
Deferred tax liabilities	325,600	297,995	319,292
Regulatory liabilities	645,046	632,400	639,663
Pension and other postretirement benefit liabilities	203,854	218,493	217,287
Derivative instruments	453	1,658	2,852
Operating lease liabilities	80,088	80,159	80,621
Other non-current liabilities	117,659	120,852	120,767
Total deferred credits and other non-current liabilities	1,372,700	1,351,557	1,380,482
Commitments and contingencies (Note 16)			
Equity:			
Common stock - no par value; authorized 100,000 shares, issued and outstanding 30,672, 30,546, and 30,589 at June 30, 2021 and 2020, and December 31, 2020, respectively	569,785	562,766	565,112
Retained earnings	365,501	331,648	336,523
Accumulated other comprehensive loss	(12,460)	(10,413)	(12,902)
Total equity	922,826	884,001	888,733
Total liabilities and equity	\$ 3,783,500	\$ 3,641,347	\$ 3,756,379

See Notes to Unaudited Consolidated Financial Statements

La Régie constate que selon les états financiers consolidés de Northwest Natural Holding Company au 30 juin 2021 (référence (iii)), la dette à long terme et les capitaux propres totalisaient 1 838 M\$ (capitaux propres 923 M\$ + dette à long terme 915 M\$). Si on y ajoute la dette à court terme

(240 000 k\$ + 60 274 k\$) et les contrats de location à long terme (80 088 k\$), la structure de capital élargie s'élèverait à 2 219 M\$.

Selon l'annexe BV-5.3 (référence (ii)), la capitalisation totale s'élevait à 1 919 M\$ en considérant les capitaux propres (923 M\$) et la dette à long terme (996 M\$), ou 2 217 M\$ après ajustements (923 M\$ + 1 294 M\$).

Par ailleurs, la Régie constate que les sources de financement à long terme ne couvrent que 69,6 % des immobilisations corporelles nettes (*Property, plant and equipment, net*), soit 1 918 M\$ / 2 756 M\$, ou 80,5 % en incluant la dette à court terme (2 219 M\$ / 2 756 M\$) et seulement une portion de 50,7 % de l'ensemble des actifs de l'entreprise totalisant 3 783 M\$, ou 58,7 % en incluant la dette à court terme. Bien que la proportion de capitaux propres au 30 juin 2021 représentait 41,6 % de la structure de capital élargie (923 M\$ / 2 219 M\$), elle ne représentait que 24,4 % de l'actif total (923M\$ / 3 783 M\$).

La Régie constate également que les passifs réglementaires (645,0 M\$), les impôts différés (325,6 M\$) et les autres passifs à long terme, excluant les contrats de location à long terme, totalisent 1 293 M\$ (1 372,7 M\$ - 80,1 M\$), et représentent 34,2 % de l'actif total de l'entreprise.

(iv) À partir des états financiers annuels au 31 décembre 2020 de chacune des entreprises de l'échantillon canadien proposé et des rapports Form 10-K de la dernière année fiscale disponible pour chacune des entreprises faisant partie des échantillons américains proposés, la Régie a produit le tableau suivant présentant notamment la structure de capital élargie (Capitalisation totale incluant la dette à court terme) exprimée en pourcentage de l'actif :

Comparaison de la structure des bilans (en% de l'actif)	Moyenne des 9 comparables US- Gaz	Moyenne des 8 comparables US- Eau	Moyenne des 17 comparables US	Moyenne des 9 comparables CDA
Capitalisation totale (dette à court et long terme ⁽¹⁾ + actions priv. + actions ordinaires)	70,9%	65,6%	68,2%	79,7% [1]
- dont Total Actions ordinaires (Total shareholder's common equity)	30,4%	28,3%	29,3%	32,2%
Passifs réglementaires et autres à long terme (Regulatory and Other Noncurrent Liabilities)	21,5%	30,0%	25,8%	14,5%
- dont Impôts différés (Deferred Income taxes)	7,2%	6,9%	7,0%	5,0%
- dont Contributions nettes aide à la construction (Net contributions in aid of construction)		9,8%		
Capitalisation totale / Immobilisations corporelles nettes (Net Property, Plant and Equipment)	99,1%	83,1%	91,1%	122,7%

La Régie constate que, si la proportion de capitaux propres à l'intérieur de la structure de capital est un peu plus faible pour l'échantillon des entreprises canadiennes par rapport à celle des entreprises américaines, lorsque calculée à partir des valeurs aux livres, la structure de capital élargie des entreprises canadiennes représente une portion

significativement plus importante de l'actif total des entreprises, soit 79,7 % contre 68,2 % pour les entreprises américaines (*ligne 1 du tableau*). De plus, la proportion des capitaux propres des entreprises canadiennes par dollar d'actifs, soit 32,2 %, est plus importante que celle de la moyenne des deux échantillons américains proposés, soit 29,3 % (*ligne 2 du tableau*).

La structure de capital élargie des entreprises canadiennes représente également une portion significativement plus importante des immobilisations corporelles nettes des entreprises, soit 122,7 % contre 91,1 % pour les entreprises américaines (*ligne 6 du tableau*).

(v) « *What Is a Liability?*

A liability is something a person or company owes, usually a sum of money. Liabilities are settled over time through the transfer of economic benefits including money, goods, or services. Recorded on the right side of the balance sheet, liabilities include loans, accounts payable, mortgages, deferred revenues, bonds, warranties, and accrued expenses.

KEY TAKEAWAYS

- *A liability (generally speaking) is something that is owed to somebody else.*
- *Liability can also mean a legal or regulatory risk or obligation.*
- *In accounting, companies book liabilities in opposition to assets. [...]*

Liabilities are a vital aspect of a company because they are used to finance operations and pay for large expansions ». [nous soulignons]

(vi) « *Calculation and Interpretation of Leverage and Coverage Ratios*

The two primary types of solvency ratios are :

4. Leverage ratios : measure the extent to which a company uses liabilities, instead of equity, to finance its assets.

- *Coverage ratios : measure a company's ability to cover its debt-related payments.*

Leverage Ratios	
Debt-to-asset ratio	$\frac{\text{Total debt}^A}{\text{Total assets}}$
Debt-to-capital ratio	$\frac{\text{Total debt}^A}{\text{Total debt} + \text{Total equity}}$
Debt-to-equity ratio	$\frac{\text{Total debt}^A}{\text{Total equity}}$
Financial leverage ratio	$\frac{\text{Average total assets}}{\text{Average equity}}$

^A Debt is defined as the sum of interest-bearing short-term and long-term debt.

The first three leverage ratios use total debt in the numerator.

- The debt-to-assets ratio expresses the percentage of total assets financed with debt. Generally, the higher the ratio, the higher the financial risk and thus the weaker the solvency;
- The debt-to-capital ratio measures the percentage of a company's total capital (debt plus equity) financed through debt;
- The debt-to-equity ratio measures the amount of debt financing relative to equity financing. A debt-to-equity ratio of 1.0 indicates equal amounts of debt and equity, which is the same as a debt-to-capital ratio of 50 percent. Interpretations of these ratios are similar. Higher debt-to-capital or debt-to-equity ratios imply weaker solvency;
- The financial leverage ratio (also called the leverage ratio or equity multiplier) measures the amount of total assets supported by one money unit of equity». [nous soulignons]

(vii) « Even if an allowed return and deemed equity thickness allow a utility to maintain a high quality credit profile and raise debt capital on reasonable terms, it does not necessarily ensure that the return on equity—when appropriately accounting for the risk-impact of financial leverage inherent in the regulatory capital structure—is competitive with that available for alternative investments of comparable risk ». [nous soulignons], [note de bas de page omise]

(viii) « The deemed equity thickness applied to the Utilities imposes significantly greater financial leverage—and thus greater financial risk—compared to the less levered capital structures of the benchmark sample companies. (Indeed the difference is between 15 and 40 percentage points in terms of debt ratio depending on the sample) ». [nous soulignons]

(ix) « [...] the proportion of debt in the capital structure—also known as financial leverage— influences the risk borne by equity investors. For a given degree of business risk, a higher proportion of debt financing (i.e., lower equity thickness) increases the expected variability of equity returns. Thus, an ROE that is fair at a given capital structure will not be comparable on a risk-adjusted basis if applied to an otherwise identical firm with a more debt-laden capital structure ». [nous soulignons]

Demandes :

7.1 Veuillez commenter les propos tirés du rapport de Continental Economic inc., mandaté par la BCUC et soulignés à la référence (i), à l'effet que le traitement différent de certains coûts au Canada par rapport aux États-Unis, tels que certains comptes différés par exemple, peuvent influencer le risque financier, en précisant si vous êtes généralement en accord ou en désaccord avec ces affirmations.

Réponse:

Dr. Brown considers financial risk to be a measure of the extent to which the capital structure of the utility influences the risk borne by its equity investors. As such, Dr. Brown would not expect there to be any relationship between the use (or the extent of the use) of deferral accounts and financial risk, because deferral accounts do not influence capital structure. In contrast, Dr. Brown would expect the use of deferral accounts to influence business risk. Dr. Brown is not aware of any general principle which would cause one to expect a greater (or lesser) use of deferral accounts as between a US and a Canadian jurisdiction. In practice Dr. Brown does not consider there to be a significant difference as between the Utilities and the utilities in Dr. Villadsen's gas LDC sample (see Q/A 4 in Dr. Brown's Direct Testimony, EGI-1, B-0027).

- 7.2 Veuillez expliquer les écarts et concilier les valeurs au 30 juin 2021 indiquées aux lignes *Long-Term Debt* et *Book Value of Long-Term Debt* présentées à la référence (ii) avec la valeur de la dette à long terme de 915,5 M\$ présentée aux états financiers au 30 juin 2021 (référence (iii)).

Réponse:

Dr. Villadsen takes all her data from Bloomberg and has confirmed that Bloomberg reports \$995.6 rounded to \$996 as of Q2, 2021 (Bloomberg). Dr. Villadsen cannot explain the difference.

Please see confidential attachment:

- EGI-18.3.2.

- 7.2.1 Veuillez confirmer si les montants présentés à la référence (ii) sous la rubrique *Book Value of Long-Term Debt* incluent les dettes à court terme et, le cas échéant, veuillez expliquer pourquoi.

Réponse:

The only part of short-term debt that is listed as long-term debt is (a) the current maturities of long-term borrowings; e.g., long-term borrowings that are now due in less than one year and (b) any amount of short-term debt used to finance long-term assets (line [o] in the table in (ii)).

- 7.3 Veuillez confirmer la compréhension de la Régie à l'effet que selon la preuve des demandeurs, (références (vii), (viii) et (ix)), les investisseurs mesureraient le risque lié au

levier financier en considérant essentiellement la proportion de capitaux propres à l'intérieur de la structure de capital ou de la capitalisation totale. Si non, veuillez expliquer.

Réponse:

Confirmed.

- 7.4 Veuillez élaborer sur l'existence de différentes approches ou définitions pouvant être utilisées par les investisseurs afin de mesurer le levier financier, notamment la définition plus large présentée à la référence (vi), soit la proportion de capitaux propres finançant les actifs, en commentant la validité de telles approches différentes.

Réponse:

Dr. Villadsen notes up front that coverage ratios are commonly used by credit rating agencies to assess default risk (or credit rating). For that purpose, Dr. Villadsen agrees that short-term debt needs to be included as a company has an obligation to service all debt.

As explicitly noted in the first definition, these ratios aim at determining the *solvency* or the company's ability to cover its debt obligations. Thus, they are concerned with debt holders' ability to receive interest payments and repayment of their debt. They are only aimed at equity investors to the degree that equity investors are considering solvency or default risk. The measures are different in that they may focus on the ability of assets to cover debt or the ability of equity to cover debt, but coverage ratios are aimed at debt investors.

For the purpose of determining the risk of equity investors or the return required by equity investors, it is necessary to look at the amount of money equity investors have tied up in the company – that is the market value of that equity (and market value of debt).

- 7.4.1 Veuillez confirmer si le levier financier mesuré par le ratio de la proportion de capitaux propres par dollar d'actif peut constituer un indicateur utile afin de déterminer le risque financier d'une entreprise. Si non, veuillez expliquer pourquoi.

Réponse:

Not confirmed. The amount of book equity per dollar assets is a useful indicator to determine the risk of default (assuming the company in question has taken needed impairments). It would not be a measure of financial leverage from an equity investor perspective.

- 7.5 Veuillez définir ce que constituent les passifs réglementaires à long terme, quels en sont les constituants les plus courants et expliquer pourquoi ils se retrouvent au passif dans les états financiers.

Réponse:

A long-term regulatory liability exists when a regulated entity has an obligation to deduct an amount in determining the regulated rate charged to customers in the future. Since these are outstanding obligations that the regulated entity must eventually fulfill, they are treated as a liability on financial statements.

The most common component included in regulated liabilities for U.S. regulated entities is currently the deferred income tax liability that was void for tax purposes by the Tax Cut and Jobs Act of 2017, pension plan funding in excess of requirements, over estimating and collecting fuel cost in excess of realized fuel costs. This list is not complete.

- 7.5.1 Veuillez expliquer quel type de considération les investisseurs potentiels dans Northwest Natural pourraient accorder aux 645 M\$, présenté en référence (iii), inscrits comme passifs réglementaires à long terme, en précisant s'il apparaîtrait prudent de tout simplement les ignorer dans l'évaluation du levier et du risque financier.

Réponse:

Broadly speaking, investors in Northwest Natural would take into account all items on the company's balance sheet and thus would be aware of the amount and take it into consideration when investing. Debt investors would consider the adjustments credit rating agencies make to balance sheet items, which may include a consideration of the listed item. Equity investors would consider broadly the company's financial statements as well as its market performance. For the purpose of calculating leverage in financial markets, it is not common to include items other than the market value of debt, equity, preferred shares.

To the degree that a company has unusual balance sheet items, it would generally be reflected in the stock price of the company.

- 7.6 Veuillez définir ce que constituent les impôts différés, quelles en sont les origines les plus courantes et expliquer pourquoi ils se retrouvent au passif dans les états financiers.

Réponse:

Deferred income taxes is the difference between the income tax calculated for financial

reporting (GAAP) / U.S. regulatory purposes and the tax calculated for income tax purposes. An example may be in order:

Suppose an asset is acquired for \$1,000. It is depreciated over 10 years for financial reporting and regulatory purposes, but the tax law allows accelerated depreciation over 4 years. Hence in year one:

GAAP / Regulatory Depreciation : $\$1,000 / 10 = \100

Impact of taxes at 21% : \$21

Tax Depreciation : $\$1,000 / 4 = \250

Impact of taxes at 21% : \$52.5

Deferred Income Tax = $\$52.5 - \$21 = \$31.5$

For most U.S. utilities, the largest component of deferred income taxes is difference in depreciation of long-lived assets as illustrated above.

Deferred income taxes are known obligations to the tax authorities; e.g., the difference in tax depreciation from a financial reporting / regulatory perspective and from the tax law causes tax payments to be postponed. Thus, deferred taxes are obligations to the tax authorities that need to be paid in the future – hence a liability.

For clarity, a consequence of the Tax Cut and Jobs Act passed into law effective 1/1/2018 in the U.S. was the reduction of the corporate income tax rate in the U.S. from 35% to 21%. Because U.S. tax law allows for accelerated depreciation of assets, but U.S. GAAP and regulatory treatment commonly use straight-line depreciation, many companies (including utilities) had deferred income taxes on their balance sheet. A portion of the deferred income taxes were no longer owed to the tax authorities and thus could no longer be considered a deferred income tax liability. However, U.S. regulators commonly use normalized taxes so customers pay taxes comparable to those reported for financial reporting purposes. I.e., a portion of the deferred income taxes had previously been collected from customers, but was no longer due to tax authorities. Therefore, many U.S. jurisdictions moved the amount from deferred income tax to regulatory liability, which is an amount owed to customers – it is then flown back to customers over time through amortization (a reduction to the revenue requirement). In addition, the amount is commonly deducted from rate base to account for the fact that it finances part of the utility's assets.

7.6.1 Veuillez expliquer quel type de considération les investisseurs potentiels dans

Northwest Natural pourraient accorder aux 326 M\$, présenté en référence (iii), inscrits comme impôts différés apparaissant au passif, en précisant s'il apparaîtrait prudent de tout simplement les ignorer dans l'évaluation du levier et du risque financier.

Réponse:

Please see the response to 7.5.1 above.

- 7.7 Veuillez expliquer, de façon générale, quel type de considération les investisseurs potentiels dans Northwest Natural pourraient accorder aux 1 373 M\$ inscrits au passif à la ligne *Total deferred credits and other non-current liabilities*, représentant 36,3 % de l'actif total de l'entreprise (référence (iii)), en précisant s'il apparaîtrait prudent de tout simplement les ignorer dans l'évaluation du levier et du risque financier.

Réponse:

Dr. Villadsen notes that the amount includes liabilities such as 'pension and other postretirement benefit liabilities,' which are in part offset by regulatory assets. Dr. Villadsen does not see a break-down of the regulatory assets in the Q2, 2021 10-Q (reference iii) but attaches the 2021 10-K, which on PDF p. 91 shows \$7.131 in current 'pension balancing' assets and \$116.440 in 'pension and other post-retirement benefit liabilities'. I.e., the regulatory assets and liabilities are in part offsetting. Similarly, unrealized gain on derivatives is in part offset by unrealized loss on derivatives. Thus, it would not be an accurate measurement to consider only the liabilities and not the offsetting assets. For clarity, Dr. Villadsen is using the Form 10-K due to its more extensive information about the composition of the assets and liabilities in question.

Debt and equity investors have access to all published information and will consider it when determining whether to invest in Northwest Natural, and credit rating agencies will, as discussed in the response to 5.1 above, make adjustments to the financial statements. From an equity investor perspective, these balance sheet items should be reflected in the company's stock price (and cost of debt).

Attachment:

- EGI-18.3.3.

- 7.8 Veuillez confirmer si vous êtes généralement d'accord avec les deux éléments suivants, soulignés à la référence (v), à l'effet que : « *Liabilities are settled over time through the transfer of economic benefits including money, goods, or services* », ainsi que « *Liabilities*

are a vital aspect of a company because they are used to finance operations and pay for large expansions ». Si non, veuillez expliquer.

Réponse:

Confirmed.

- 7.9 Veuillez confirmer la validité des données compilées aux lignes 1, 2 et 6 du tableau de la référence (iv) *Comparaison de la structure des bilans (en % de l'actif)* ou, le cas échéant, présenter un tableau corrigé, en précisant les corrections requises.

Réponse:

Dr. Villadsen has not independently confirmed the calculations of the Régie because she does not have access to the Régie's work papers. However, for purposes of being responsive to this DR series, Dr. Villadsen assumes that the Régie has pulled the information correctly from each company's 10-Ks and made any necessary adjustments to arrive at the numbers presented in reference (iv).

- 7.10 Veuillez expliquer si l'importance de la structure de capital des entreprises canadiennes, laquelle représenterait 122,7 % des actifs à long terme que constituent les immobilisations corporelles nettes (*Property, plant and equipment, net*) par rapport à 91,1 % en moyenne pour les deux échantillons d'entreprises américaines, tel que constaté la ligne 6 du tableau de la référence (iv), a été ou devrait être pris en considération dans l'appréciation du risque financier des entreprises. Veuillez expliquer pourquoi.

Réponse:

To Dr. Villadsen's knowledge, the major credit rating agencies do not consider the proportion of total capitalization to net tangible long-term assets (net PPE) when determining the financial risk profile a company. For purposes of establishing a regulated utility's authorized capital structure, Dr. Villadsen finds it more relevant to look at the metrics used by credit rating agencies in their methodology (e.g., FFO to debt, FFO coverage, EBIT coverage), which are primarily cash flow or financial leverage based metrics.

- 7.11 Veuillez indiquer si le fait que la proportion des capitaux propres des entreprises de l'échantillon canadien par rapport à l'actif total des entreprises, soit de 32,2 % (référence (iv)), est plus importante que celle de la moyenne des deux échantillons américains proposés (29,3 %), a été ou devrait être prise en considération dans l'appréciation du risque

financier des entreprises aux fins du présent dossier. Veuillez expliquer pourquoi.

Réponse:

To Dr. Villadsen’s knowledge, the major credit rating agencies do not consider the proportion of equity to total business assets when determining the financial risk profile a company. For purposes of establishing a regulated utility’s authorized capital structure, Dr. Villadsen finds it more relevant to look at the metrics used by credit rating agencies in their methodology (e.g., FFO to debt, FFO coverage, EBIT coverage), which are primarily cash flow or financial leverage based metrics.

- 8. Références :** (i) Pièce [B-0015](#), p. 196;
(ii) Dossier R-3690-2009, décision [D-2009-156](#), p. 54 et 55;
(iii) Pièce [B-0015](#), Annexe BV-4.3 (*Panel A à Panel H*);
(iv) Pièce [B-0015](#), Annexe BV-5.3 (*Panel A à Panel Q*).

Préambule :

(i)

Schedule No. BV-5.11

Overall After-Tax Risk Positioning Cost of Capital of the US Sample Gas and Water (Using Bloomberg Betas)

Panel A: CAPM Cost of Equity Scenario 1 - Long-Term Risk Free Rate of 2.47%, Long-Term Market Risk Premium of 5.68%

Company	CAPM Cost of Equity [1]	ECAPM (1.5%) Cost of Equity [2]	3-Year Average Common Equity to Market Value Ratio [3]	Weighted - Average Cost of Preferred Equity [4]	3-Year Average Preferred Equity to Market Value Ratio [5]	Weighted-Average Cost of Debt [6]	3-Year Average Debt to Market Value Ratio [7]	The Utilities's Representative Income Tax Rate [8]	Overall After-Tax Cost of Capital (CAPM) [9]	Overall After-Tax Cost of Capital (ECAPM 1.5%) [10]
Amer States Water	5.8%	6.4%	0.82	-	0.00	3.0%	0.18	26.5%	5.2%	5.7%
Amer Water Works	8.1%	8.1%	0.67	-	0.00	3.0%	0.33	26.5%	6.2%	6.2%
Artesian Res Corp	6.4%	6.8%	0.68	-	0.00	3.0%	0.32	26.5%	5.1%	5.4%
Atmos Energy	7.4%	7.6%	0.71	-	0.00	3.0%	0.29	26.5%	5.9%	6.0%
California Water	6.1%	6.6%	0.69	-	0.00	3.0%	0.31	26.5%	4.9%	5.2%
Chesapeake Utilities	6.9%	7.2%	0.69	-	0.00	3.0%	0.31	26.5%	5.4%	5.7%
Essential Utilities	8.5%	8.4%	0.69	-	0.00	3.0%	0.31	26.5%	6.5%	6.5%
Global Water Resources Inc	7.7%	7.8%	0.67	-	0.00	3.0%	0.33	26.5%	5.9%	6.0%
Middlesex Water	7.4%	7.6%	0.80	3.0%	0.00	3.0%	0.20	26.5%	6.4%	6.5%
New Jersey Resources	8.0%	8.0%	0.67	-	0.00	3.0%	0.33	26.5%	6.1%	6.1%
NiSource Inc	8.1%	8.1%	0.47	3.3%	0.04	3.3%	0.48	26.5%	5.2%	5.2%
Northwest Natural	7.4%	7.6%	0.62	-	0.00	3.3%	0.38	26.5%	5.5%	5.7%
ONE Gas Inc	7.9%	8.0%	0.68	-	0.00	3.1%	0.32	26.5%	6.1%	6.1%
SJW Group	7.9%	7.9%	0.63	-	0.00	3.0%	0.37	26.5%	5.8%	5.8%
South Jersey Inds	8.3%	8.3%	0.48	-	0.00	3.3%	0.52	26.5%	5.3%	5.2%
Southwest Gas	8.5%	8.4%	0.62	-	0.00	3.3%	0.38	26.5%	6.2%	6.2%
Spiré Inc	8.1%	8.1%	0.55	3.0%	0.03	3.0%	0.43	26.5%	5.4%	5.4%
Water Sample Average	7.2%	7.5%	70.8%	3.0%	0.0%	3.0%	29.2%	26.5%	5.7%	5.9%
Gas Sample Average	7.8%	7.9%	61.1%	3.1%	0.8%	3.1%	38.1%	26.5%	5.7%	5.7%

(ii) « [212] Gaz Métro demande à la Régie d'utiliser une nouvelle méthodologie afin de fixer son taux de rendement, soit le coût moyen pondéré du capital après impôt (CMPCAI ou ATWACC en anglais, pour After-Tax Weighted Average Cost of Capital). Selon Gaz Métro, « la démarche ATWACC permet de comparer sur un pied d'égalité les rendements des sociétés exposées à un risque comparable puisqu'elle neutralise les écarts de risques financiers lorsqu'on compare les occasions d'investissement ».

[213] Une distinction importante entre le CMPCAI et l'approche habituelle utilisée par les

organismes de réglementation canadiens est que la première utilise les structures de capital calculées avec les valeurs marchandes plutôt que les valeurs aux livres. Selon le Dr Kolbe, expert de Gaz Métro, le risque financier dépend de la valeur au marché de la structure de capital et non de la valeur aux livres de cette structure de capital, ce qui, selon lui, plaide en faveur de l'utilisation de la méthode CMPCAI. Dans le cadre de cette méthode, tout comme dans l'approche traditionnelle, il utilise le modèle de la prime de risque afin d'estimer le rendement sur l'avoir propre ». [notes de bas de page omises]

Demandes :

- 8.1 Veuillez confirmer si la méthodologie utilisée au tableau de la référence (i) afin de déterminer le coût moyen pondéré du capital après impôt s'apparente à la méthodologie CMPCAI (ou ATWACC) proposée lors du dossier R-3690-2009, tel que présentée à la référence (ii). Si non, veuillez en expliquer les différences.

Réponse:

Dr. Villadsen cannot be certain whether the approach taken in R-3690-2009 is the same as that employed in B-0015, p. 196 (e.g., Schedule BV-5.11) as she does not have the underlying analysis. However, Dr. Villadsen notes that B-0015, pp. 18-19, the key approach she takes to leverage is based on the unlevering and relevering of beta as shown in B-0015, pp. 199-201. As shown on p. 201 for the Natural Gas sample and in the response to 6.5.1 above for the Canadian sample, the Hamada approach is fully supportive of Dr. Villadsen's recommendation.

- 8.2 Veuillez identifier les régulateurs canadiens qui se sont prononcés sur la méthodologie CMPCAI (ou ATWACC) et qui l'ont retenue aux fins de la fixation du taux de rendement des capitaux propres, ainsi que les régulateurs canadiens qui n'ont pas retenu la méthodologie CMPCAI lorsqu'elle leur a été proposée. Veuillez fournir les hyperliens menant aux décisions des régulateurs portant sur ces dossiers.

Réponse:

Dr. Villadsen is aware the the National Energy Board in RH-1-2008, pp. 18-19 used the ATWACC (RH-1-2008 attached). She is not aware of other Canadian regulators that have adopted the ATWACC. Dr. Villadsen is aware the Régie in D-2009-156, para 229 did not adopt the ATWACC.

Attachment:

- EGI-18.3.4.

- 8.3 Veuillez identifier les régulateurs américains qui se sont prononcés sur la méthodologie CMPCAI (ou ATWACC) et qui l'ont retenue aux fins de la fixation du taux de rendement des capitaux propres, ainsi que les régulateurs américains qui n'ont pas retenu la méthodologie CMPCAI lorsqu'elle leur a été proposée. Veuillez fournir les hyperliens menant aux décisions des régulateurs portant sur ces dossiers.

Réponse:

Dr. Villadsen is aware that the Surface Transportation Board relies on the ATWACC to determine the cost of capital for freight railroads (STB Decision in EP 558 (Sub-No. 24) attached); see p. 12. Dr. Villadsen is also aware that the Florida Public Service Commission relies on a comparable formula to determine the ROE for water utilities (FPSC Order No. PSC-2012-0339_PAA-WS, p. 6 attached). The Federal Energy Regulatory Commission relied on the ATWACC in "Order Accepting Tariff Revisions Subject to Compliance Filing in Docket ER14-2940-000 and ER19-105-022 (attached). Dr. Villadsen is aware that the Michigan Public Service Commission has been critical of the ATWACC as has the Illinois Commerce Commission.

Attachments:

- EGI-18.3.5.
- EGI-18.3.6.
- EGI-18.3.7.
- EGI-18.3.8.

RATIOS FINANCIERS

9. Références :
- (i) Pièce [B-0015](#), p. 81, lignes 17 à 23;
 - (ii) Pièce [B-0015](#), p. 117 et 118 du fichier pdf;
 - (iii) Pièce [B-0015](#), p. 53, tableau 18 et p. 59, tableaux 20 et 21;
 - (iv) [Canadian Utilities Ltd.](#), États financiers annuels vérifiés, au 31 décembre 2020, p. 10 ;
 - (v) [Fortis Inc.](#), États financiers annuels vérifiés, au 31 décembre 2020, p. 8;
 - (vi) [Hydro One Limited](#), États financiers annuels vérifiés, au 31 décembre 2020, p. 5;
 - (vii) Pièces [B-0089](#), [B-0090](#), [B-0091](#), [B-0092](#), [B-0093](#), [B-0094](#), [B-0095](#), [B-0096](#), [B-0097](#), [B-0098](#), [B-0099](#), [B-0100](#), [B-0101](#), [B-0102](#), [B-0103](#), [B-0104](#), [B-0105](#).

Préambule :

(i) « *I recommend that the Régie at a minimum seek to obtain credit ratios towards the middle of the range DBRS recommends and well above the low end of Moody's / Standard & Poor's range such as :*

- *EBIT Coverage of at least 2.5 times;*
- *FFO Interest Coverage of 3.5 to 4.0 times with the higher end being preferable;*
- *FFO to Debt of at least 15 % ».* [note de bas de page omise]

(ii) « *I present results and calculate the EBIT Interest Coverage, the FFO Interest Coverage, and the FFO to Debt ratios. The fact that I look only at those three ratios does not imply that other ratios are irrelevant :*

- *EBIT Coverage = EBIT / Interest;*
- *FFO-to-Debt = FFO / Total Debt;*
- *FFO Coverage = (FFO + Interest) / Interest.*

where FFO is calculated as net income plus depreciation and EBIT is calculated as Net Income divided by (1- tax rate) plus interest.

[...]

Using the parameters above, I calculate the following :

$$\underline{EBIT = Net Income before Tax + Interest}$$

[...]

Further,

FFO = Net Income + Depreciation ». [nous soulignons], [note de bas de page omise]

(iii) Les tableaux 18, 20 et 21 présentent des renseignements sur les entreprises des échantillons « *Canadian Sample* », « *Gas Sample* » et « *Water Sample* » dont notamment leur notation de crédit selon S&P Rating.

(iv) Les états financiers consolidés de Canadian Utilities Ltd au 31 décembre 2020 rapportent notamment les valeurs suivantes :

Bénéfice avant impôt sur le résultat : 586 M\$
Charges financières, montant net : 386 M\$
Bénéfice de l'exercice : 434 M\$
Dotation aux amortissements et pertes de valeur : 610 M\$
Passifs non courants / Dette à long terme : 8 887 M\$

(v) États financiers consolidés de Fortis Inc. au 31 décembre 2020.

(vi) États financiers consolidés d'Hydro One Limited au 31 décembre 2020.

(vii) Les pièces B-0089 à B-0105 contiennent les notices annuelles « *Form 10-K* » des entreprises des échantillons « *Gas Sample* » et « *Water Sample* ».

Demandes :

9.1 À l'aide des renseignements de la références (iv), la Régie calcule les ratios « *EBIT Coverage* », « *FFO to Long-Term Debt* » et « *FFO Interest Coverage* » de Canadian Utilities Ltd (A-) selon la méthode décrite à la référence (ii) :

- $EBIT\ Coverage = \underline{1,52}$
= Bénéfice avant impôt sur le résultat ÷ Charges financières, montant net
= $586 \div 386$
- $FFO\ to\ Long-Term\ Debt = \underline{11,7\ \%}$
= (Bénéfice net + Amortissement) ÷ Dette à long terme
= $(434 + 610) \div 8\ 887$;
- $FFO\ Interest\ Coverage = \underline{2,7}$
= (Bénéfice net + Amortissement) ÷ Charges financières, montant net
= $(434 + 610) \div 386$.

Veillez valider que la méthode de calcul de la Régie correspond à celle de la référence (ii).
Veillez également valider les calculs et veuillez au besoin apporter les corrections requises.

Réponse:

Dr. Villadsen confirms the mathematical calculations presented above. However, Dr. Villadsen has not verified that the Régie pulled the correct numbers from the referenced materials and/or made any necessary adjustments to conform to the credit rating methodologies. For purposes of Request Series 9, Dr. Villadsen assumes the Régie has performed the calculation correctly.

- 9.2 À l'aide des renseignements des références (iv), (v), (vi) et (vii), la Régie, pour chacune des entreprises des échantillons « *Canadian Sample* », « *Gas Sample* » et « *Water Sample* » ayant une notation de crédit supérieure ou égale à A-, calcule les ratios « *EBIT Coverage* », « *FFO to Long-Term Debt* » et « *FFO Interest Coverage* ».

Dans ce tableau, les notations de crédit sont celles qui se trouvent à la référence (iii). Les ratios sont calculés selon la méthode décrite à la référence (ii). Les cases rehaussées en gris indiquent les entreprises dont au moins deux des trois ratios ne respectent pas les recommandations mentionnées en (i).

Tri selon « <i>FFO Coverage</i> »		<i>Ebit Coverage</i>	<i>FFO to LT Debt</i>	<i>FFO Coverage</i>
Global Water Res. Inc	A	0,36	9,0%	1,9
Fortis Inc.	A-	1,55	12,2%	2,7
Canadian Utilities Ltd	A-	1,52	11,7%	2,7
STW Group	A-	1,29	11,7%	2,8
New Jersey Resources	A-	2,98	10,6%	2,9
Essential Utilities	A	1,45	9,8%	3,0
Amer. Water Works	A	2,34	14,1%	3,3
Artesian Res Corp	A	3,67	19,6%	3,7
Spire Inc.	A-	3,19	16,5%	4,5
California Water	A+	3,54	25,0%	4,7
Hydro One Limited	A-	2,15	21,8%	5,7
Amer. States Water	A+	5,53	28,0%	5,9
Chesapeake Utilities	A-	4,33	25,5%	6,0
Middlesex Water	A	4,58	20,8%	7,6
Atmos Energy	A-	9,81	23,2%	13,7

Veillez valider les données de ce tableau et au besoin veuillez y apporter les corrections nécessaires.

Réponse:

Please see response to Request 9.1

9.3 En vous référant au tableau de la question précédente, pour chacune des entreprises dont au moins deux des trois ratios ne respectent pas les recommandations mentionnées en (i), veuillez concilier la notation de crédit avec les ratios « *EBIT Coverage* », « *FFO to Long-Term Debt* » et « *FFO Interest Coverage* ».

Réponse:

Dr. Villadsen notes:

- **Global Water Resources** See response to Request 2.5 above.
- According to Exhibit EGI-7.6, page 5, **Fortis** has an FFO/debt ratio of 9.2%, an FFO interest cash coverage ratio of 3.8x, and an EBIT interest coverage ratio of 3.5x as reported by S&P. With the exception of FFO/debt, Fortis' ratings fall within the ranges referenced in (i).
- According to Exhibit EGI-7.3, page 6, **Canadian Utilities** has an FFO/debt ratio of 11.8% and an FFO cash interest coverage ratio of 3.6x. EBIT interest coverage ratio is not given, however Dr. Villadsen estimates it to be 2.2x based on the values reported on page 7 ($991.0 / 447.5 = 2.2x$). S&P awarded Canadian Utilities an "Excellent" business risk profile but a "significant" financial risk profile. As a result, Canadian Utilities' anchor rating was an A- and no other modifiers subsequently applied. S&P identifies a key risk as "minimal cushion in credit metrics; large capital spending and share purchase will continue to stress credit metrics" (page 2).
- According to Exhibit EGI-7.22, page 5, **SJW Group** has an FFO/debt ratio of 8.4% and an FFO cash interest coverage of 3.1%. The EBIT interest coverage ratio is not given, however Dr. Villadsen estimates it to be 2.1x based on the values reported on page 6 ($123.6 / 58.3 = 2.1x$). S&P awarded an "Excellent" business risk profile but a "significant" financial risk profile. As a result, SJW Group's anchor rating was A- and no other modifiers were subsequently applied. Notably, S&P Global Ratings assessed SJW Group's financial risk profile using its "low volatility table," which provides additional headroom for the above referenced metrics. "We assess SJWG's financial risk profile using our low volatility table, which reflects our view of the

company's mostly low-risk and regulated water distribution service and effective management of regulatory risk" (page 4).

- **NJR** is not rated by any credit rating agency (see EGI-13.11, page 61). New Jersey Natural Gas (NJNG), the utility subsidiary, is a rated entity and has an A- corporate rating from Fitch, which is equivalent to an A- on S&P's rating scale.

See: <https://www.fitchratings.com/research/corporate-finance/fitch-affirms-new-jersey-natural-gas-idr-at-a-outlook-stable-15-03-2021>

- According to Exhibit EGI-7.20, **Essential Utilities** has an FFO/debt ratio of 31.1% and an FFO cash interest coverage of 4.8x (page 5). The EBIT interest coverage ratio is not given, however Dr. Villadsen estimates it to be 2.9x based on the values reported on page 8 ($368.4 / 125.9 = 2.9x$). S&P awarded an "Excellent" business risk profile but a "significant" financial risk profile. As a result, Essential Utilities' anchor rating was A- and no other modifiers were subsequently applied. S&P notes that "Essential's financial risk profile is stronger within the significant category compared with peers" (page 6).
- According to Exhibit EGI-7.18, **American Water Works** has an FFO/debt ratio of 14.4% and an FFO cash interest coverage of 4.5x (page 5). The EBIT interest coverage ratio is not given, however Dr. Villadsen estimates it to be 3.1x based on the values reported on page 7 ($1,224.9 / 402.4 = 3.1x$). S&P awarded an "Excellent" business risk profile and an "intermediate" financial risk profile. As a result, American Water Works' anchor rating was A+. S&P applied a one notch downgrade for comparable rating analysis, which resulted in a stand-alone credit rating of A.

10. Références :
- (i) Pièce [B-0015](#), p. 80 et 81, A77;
 - (ii) Pièce [B-0074](#), p. 3;
 - (iii) Pièce [B-0074](#), p. 5;
 - (iv) Pièce [B-0073](#), p. 2;
 - (v) Pièce [B-0073](#), p. 7;
 - (vi) Dossier R-3987-2016, pièce [B-0112](#), p. 3;
 - (vii) Pièce [B-0015](#), Annexe BV-4.3 (Panel A à Panel H).

Préambule :

(i) « Currently, Énergir is the only Utility that is covered by the credit rating agencies. In S&P Global Ratings, most recent rating report, S&P discusses Énergir's weakening FFO to Debt credit metrics over their forecast period. This is related to a refund to ratepayers of overearnings and weather normalization variations in addition to elevated forecasted capital spend. S&P forecasts that this will lower Énergir's FFO to Debt to 14 % - 16 %, which is near the bottom end of S&P's range for A-rated utilities. This is important because the fact that credit rating agencies have not downgraded Énergir is not sufficient to ensure that the combined equity ratio and allowed ROE is comparable to the return available to comparable equity investments S&P, as well as other credit rating agencies, look forward and assess their ratings continually. It is therefore important not to target historical or low-end benchmark credit ratios ». [nous soulignons] [note de bas de page omise]

(ii) « Although unlikely, we could lower the rating over the next 12-24 months if :

- The company's credit metrics deteriorate, with adjusted FFO to debt falling to and staying below 14 % with no prospect for improvement. This could happen because of an adverse regulatory decision, a material debt-financed acquisition, or if the company encounters significant operating challenges;
- Alternatively, we could lower the rating if Energir's business risk weakens substantially. This could happen if the company materially increases its unregulated or generation operations ». [nous soulignons]

(iii) « [...] We expect continued weakened credit metrics in 2021 because of refunds to rate payers as a result of over earnings from the distribution, transportation, and load-balancing operations and weather normalization variances due to cold winters in 2019. We expect credit metrics to recover in 2022.

We assess Energir's financial risk profile using the low-volatility financial benchmark table, reflecting the company's lower-risk regulated electric and gas distribution operation and effective management of regulatory risk. This reflects our view of Energir's steady cash flow and rate-regulated utility operations with highly supportive cost recovery ». [nous soulignons]

(iv) « Rating Considerations

Strengths

1. Supportive regulation in Québec

The regulatory framework in Québec is viewed as supportive, reflecting the following factors: (A) full recovery of gas supply costs through an automatic monthly adjustment mechanism, (B) rate stabilization accounts to mitigate revenue fluctuations due to the weather, (C) reasonable authorized ROE and capital structure ratio, and (D) a revenue decoupling mechanism ».

(v) « Key credit metrics for the Partnership weakened modestly in F2019 because of the lower earnings and cash flow along with a higher debt load. However, the metrics remain supportive of the "A" rating :

- *The Partnership's nonconsolidated debt-to-capital ratio of 54.7 % was in line with the regulatory capital structure of 46 % equity (including 7.50 % of preferred shares) ».*[nous soulignons]

(vi) « In Quebec, which accounts for 65 %-70 % of the cash flow, the company can recover revenue shortfall from weather-related impacts in subsequent years, which reduces its volume risk exposure. Furthermore, key rate base parameters including return on equity (ROE) and equity thickness approved by the Regie de l'énergie, regulator for Quebec, is supportive and in line with those of other regulated utilities across other jurisdictions. For 2017, approved ROEs are 8.90 % for the Regie, 8.50 % for the Alberta Utilities Commission (AUC), and 8.78 % for the Ontario Energy Board (OEB). For the equity thickness in the deemed capital structure for 2017, the Regie approved 38.5 %, the AUC 37%-41 %, and the OEB 36 %-40 % for gas distribution companies ».

[nous soulignons]

(vii) Les tableaux (Panel) A à H de l'annexe BV-4.3 contiennent les renseignements relatifs à l'évaluation des structures de capital de chacune des entreprises de l'échantillon « Canadian Sample » en date du deuxième trimestre des années 2016 à 2021.

Demandes :

10.1 Veuillez concilier les affirmations en (i), (ii) et (iii).

Réponse:

Dr. Villadsen is not able to comment on how S&P arrived at the statements made in its credit reports. However, Dr. Villadsen notes that the underline portions of (vi) are also made by S&P on page 4 of the source document for (ii). On page 2 of the source document for (ii), S&P notes that there is limited cushion in Énergir's credit metrics during the outlook period – they forecast FFO to debt to reach 14-16%, which is near their downgrade

trigger of 14%. They attribute the weaker financials to a refund and weather normalization variations from prior years (as discussed in [i]). They also expect capital spending to put additional pressure on credit metrics in 2021 and 2022. This is part of the reasons cited by S&P to support its statements in (ii).

10.2 En vous référant à (iii), (iv) et (v), veuillez expliquer si les agences de notation peuvent compenser la faiblesse de l’atteinte d’un critère par le dépassement d’un autre comme celui de l’environnement règlementaire.

Réponse:

Under S&P’s methodology, the anchor rating is determined based on the combination of a utility’s “Business Risk” profile and its “Financial Risk” profile. The business risk profile is determined based on a company’s country risk, industry risk, and competitive position (for regulated entities, regulatory environment is considered a business risk). The financial risk profile is determined based on a company’s cash flow and leverage metrics. Each of these sub-categories are given varying weights by S&P in its methodology.

The anchor credit rating is determined using the matrix shown below (in source document for [ii] on page 8). If a company received an “excellent” business risk profile, it could have a financial risk profile of “significant” and still maintain an A-range rating. However, this can leave the utility with little head room to absorb changes in cash flow, debt levels, or changing business environment. If the company’s business risk profile deteriorates to “strong” or its financial risk profile changes to “aggressive” its anchor credit rating would become BBB. If both occurred simultaneously, the company would become sub-investment grade with a BB+ anchor rating.

Business And Financial Risk Matrix						
Business Risk Profile	Financial Risk Profile					
	Minimal	Modest	Intermediate	Significant	Aggressive	Highly leveraged
Excellent	aaa/aa+	aa	a+ / a	a-	bbb	bbb-/bb+
Strong	aa/aa-	a+ / a	a-/bbb+	bbb	bb+	bb
Satisfactory	a/a-	bbb+	bbb/bbb-	bbb-/bb+	bb	b+
Fair	bbb/bbb-	bbb-	bb+	bb	bb-	b
Weak	bb+	bb+	bb	bb-	b+	b/b-
Vulnerable	bb-	bb-	bb-/b+	b+	b	b-

After the anchor credit rating is determined, S&P assesses whether additional modifiers apply (see page 7 of source document to [ii]). These include diversification/portfolio effect, capital structure, financial policy, liquidity, management and governance, or comparability rating analysis. Based on S&P’s assessment, it can notch the anchor credit rating down depending on the severity of its findings (a notch is equivalent to one step on S&P ratings

scale). For example, if a company received an excellent business risk profile and significant financial risk profile determination, this would result in an A- anchor rating. If the company then received a notch for capital structure, its standalone credit rating would then become BBB+.

Similarly, Moody's evaluates various criteria to arrive at its credit rating determination. See the table below, which is from Exhibit EGI-6.4 page 4. Moody's evaluates four factors and assigns each a factor weight: regulatory framework (25%), ability to recover costs and earn returns (25%), diversification (10%), and financial strategy, key financial metrics (40%). Each of these broad factors have sub-factors with their own sub-factor weighting. Similar to S&P, Moody's can also notch a company's base credit rating depending on factors such as regulatory or other barriers to cash movements from OpCos to HoldCos, higher leverage at OpCo level, ring fencing provisions, etc. (see Exhibit EGI-6.4, page 23).

Factor / Sub-Factor Weighting - Regulated Utilities			
Broad Scorecard Factors	Factor Weighting	Sub-Factor	Sub-Factor Weighting
Regulatory Framework	25%	Legislative and Judicial Underpinnings of the Regulatory Framework	12.5%
		Consistency and Predictability of Regulation	12.5%
Ability to Recover Costs and Earn Returns	25%	Timeliness of Recovery of Operating and Capital Costs	12.5%
		Sufficiency of Rates and Returns	12.5%
Diversification	10%	Market Position	5%*
		Generation and Fuel Diversity	5%**
Financial Strength, Key Financial Metrics	40%	CFO pre-WC + Interest / Interest	7.5%
		CFO pre-WC / Debt	15.0%
		CFO pre-WC – Dividends / Debt	10.0%
		Debt/Capitalization	7.5%
Total	100%		100%
Notching Adjustment			
Holding Company Structural Subordination			0 to -3
*10% weight for issuers that lack generation; **0% weight for issuers that lack generation			

Simply put, the credit rating determination is based on a tradeoff of strengths and weakness amongst numerous different criteria within the methodology. It is Dr. Villadsen's view that the allowed return on equity and deemed capital structure be set so that the utility can achieve an A-range credit rating. That way, if any factors within the credit rating determination deteriorate (e.g., variances in cash flow) then the utility has headroom to maintain an investment grade rating.

10.3 En vous référant à (i), (iv) et (vi), veuillez expliquer si le mécanisme de normalisation de la température d'Énergir est perçu positivement par les agences de notation lorsqu'elles évaluent sa notation de crédit.

Réponse:

Dr. Villadsen is not able to speak on behalf of the credit rating agencies. Their statements speak for the agencies.

10.4 En vous référant à (vi), veuillez commenter l'affirmation : « *Furthermore, key rate base parameters including return on equity (ROE) and equity thickness approved by the Régie de l'énergie, regulator for Quebec, is supportive and in line with those of other regulated utilities across other jurisdictions* ».

Réponse:

Please see Q/A 17, 18, and 19 in Dr. Villadsen's Direct Testimony (Exhibit EGI-1, B-0015).

10.5 À l'aide des renseignements de la référence (vii), la Régie rapporte la structure de capital selon la valeur au livre au deuxième trimestre de 2021 des entreprises de l'échantillon « *Canadian Sample* ».

Dans ce tableau, la valeur au livre est calculée à l'aide des rubriques « *Book Value, Common Shareholder's Equity* », « *Book Value of Preferred Equity* » et « *Book Value of Long-Term Debt* » de la référence (vii).

**Demande conjointe relative à la fixation de taux de rendement
et de structures de capital, R-4156-2021**

Selon valeurs au livre, au 30 juin 2021		Capitaux propres (%)	Actions privilégiées (%)	Dette (%)
Algonquin Power & Utilities C	BBB	42,2%	1,6%	56,2%
AltaGas Ltd.	BBB-	39,8%	7,2%	53,0%
Canadian Utilities Limited	A-	32,3%	9,5%	58,2%
Emera Incorporated	BBB	33,6%	4,9%	61,5%
Enbridge Inc.	BBB+	41,7%	5,9%	52,4%
Fortis Inc.	A-	39,4%	3,7%	56,9%
Hydro One Limited	A-	43,5%	0,0%	56,5%
TC Energy Corporation	BBB+	34,5%	4,2%	61,3%
Moyenne		38,4%	4,6%	57,0%

Veillez valider les données de ce tableau et au besoin veuillez y apporter les corrections nécessaires.

Réponse:

Confirmed.

- 10.6 En vous référant au tableau de la question précédente, veuillez commenter la similitude de la structure de capital présumée d'Énergir avec celles des entreprises de l'échantillon « *Canadian Sample* ».

Dans votre réponse, veuillez notamment vous prononcer sur la présence d'actions privilégiées dans ces structures de capital comme celles d'Énergir à la référence (v). Veuillez également indiquer si la présence d'actions privilégiées dans ces structures de capital est perçue négativement par les agences de notation.

Réponse:

As discussed in Q/A 48 of Dr. Villadsen's Direct Testimony (Exhibit EGI-1, B-0015), the majority of the Canadian Utility sample companies are quite diversified and have some business segments engaged in unregulated operations (such as merchant power generation or the gathering and process of natural gas) or regulated activities other than gas and electric distribution and transmission (such as natural gas storage facilities or common carrier oil pipelines). As such, the allowed regulatory capital structure of Énergir is not comparable to the book value capital structure of the Canadian Utility sample companies.

Dr. Villadsen is not able to speak on behalf of the credit rating agencies about the perception of preferred shares.

10.7 Pour chacune des entreprises du tableau de la question 10.5, veuillez identifier chacune de leurs entités règlementées de distribution de gaz naturel au Canada. Pour chacune de celles-ci, veuillez indiquer la structure de capital autorisée (avoir propre, actions privilégiées et dette) de même que le taux de rendement autorisé sur l'avoir propre en vigueur.

Réponse:

Exhibit EGI-1, B-0024 contains the authorized ROE and equity capital structures of Canadian natural gas utilities that Dr. Villadsen is aware of.

10.8 En vous référant aux renseignements fournis à la question précédente, veuillez commenter la similitude de la structure de capital présumée d'Énergir et son taux de rendement autorisé avec ceux des autres entités règlementées des entreprises de l'échantillon « *Canadian Sample* ».

Réponse:

Please see response to Request 10.4

CRITÈRES DU RENDEMENT RAISONNABLE

- 11. Références :**
- (i) Pièce [B-0015](#), p. 10, lignes 19 à 23 et p. 11, lignes 1 et 2;
 - (ii) Dossier R-4151-2021, pièce [B-0075](#);
 - (iii) Dossier R-4151-2021, pièce [B-0169](#).

Préambule :

(i) « *The impact of risk on investors' required returns is central to the financial concept of the opportunity cost of capital, and to the "comparable investments" and "capital attraction" components of the fair return standard. Put simply, a fair return must be sufficiently attractive to compensate investors for forgoing the opportunity to earn a return from an alternative investment of comparable risk. The return that investors require to compensate for this opportunity cost is the cost of capital. Therefore, a fair allowed return must be at least as high as that available on comparable investments (i.e., it must meet the comparability criteria)* ».

**Demande conjointe relative à la fixation de taux de rendement
et de structures de capital, R-4156-2021**

(ii) «

PROVISION POUR IMPÔTS SUR LE REVENU PRÉSUMÉS		
EXERCICE TERMINÉ LE 30 SEPTEMBRE 2022		
(\$)		
No de ligne		
1	Impôt à payer selon les calculs	
2	Fédéral	22 087 000
3	Québec	16 778 000
4	Total des impôts exigibles pour l'année	<u>38 865 000</u>
5		
6	Provision totale présentée à l'état des résultats	<u>38 865 000</u>

»

(iii) «

	Établissement du revenu requis Cause tarifaire 2021-2022 (000 \$)						Total (7)	Référence (8)
	Distribution (1)	Fourniture (2)	SPEDE (3)	Transport (4)	Équilibrage Pointe (5)	Équilibrage Espace (6)		
1 Frais de transport, d'équilibrage, du SPEDE et de la distribution	10 340			174 492	69 945	62 571	317 348	Énerg-N, Doc. 6, p. 1, 2 et 3
2 Compte d'aide à la substitution d'énergies plus polluantes (CASEP)	1 000						1 000	Énerg-J, Doc. 1
3 Autres revenus d'exploitation	(3 268)						(3 268)	Énerg-N, Doc. 8
4 Dépenses d'exploitation	244 989						244 989	Énerg-N, Doc. 9, p. 1
5 Autres composantes du coût des avantages sociaux futurs	2 949						2 949	Énerg-L, Doc. 4, p. 2, 1, 5 & 8
6 Plan global en efficacité énergétique (PGÉE)	4 264						4 264	Énerg-J, Doc. 2, p. 8, 1 & 8
7 Amortissements immobilisations	133 615				2 018		135 633	Énerg-N, Doc. 10, 1, 105
8 Amortissements frais reportés et actifs intangibles	54 415			12 649		3 437	70 501	Énerg-N, Doc. 12, p. 1, col. 8, 1, 24
9 Impôts fonciers et autres	46 871						46 871	Énerg-N, Doc. 13
10 Impôts sur le revenu	34 605	178	1 817	940	934	392	38 865	Énerg-J, Doc. 1, p. 11, col. 7
11 Rendement sur la base de tarification	135 181	1 809	720	2 736	4 101	1 433	145 979	Énerg-L, Doc. 1, p. 11, col. 8
12 Revenu requis avant recharge au client GM GNL pour utilisation de l'usine LSR	664 960	1 987	2 536	190 817	76 998	67 832	1 005 130	
13 Coût d'utilisation de l'usine LSR remboursé par le client GM GNL					(5 158)		(5 158)	Énerg-N, Doc. 15, Annexe 1
14 Revenu requis de la clientèle réglementée	664 960	1 987	2 536	190 817	71 840	67 832	999 972	

».

Demandes :

11.1 En vous référant (i), veuillez expliquer dans quelle mesure les investisseurs, lorsqu'ils comparent des investissements alternatifs, prennent en compte l'impact des règles fiscales qui prévalent dans les différentes juridictions sur les risques et rendements de ceux-ci.

Réponse:

Investors will consider tax rates and tax treatments when determining where to invest and such considerations (along many other factors) impacts the stock price of a company and therefore the return available to investors. However, as discussed in B-0015, pp. 44-45,

cross-border (Canada vs. U.S.) investments are common, so investors are clearly willing to invest in both countries regardless of the tax rules.

- 11.2 En vous référant à l'impôt présumé inclus dans le revenu requis d'Énergir (références (ii) et (iii)), veuillez commenter sur les avantages qui en découlent pour les investisseurs dans la mesure où ceux-ci sont exemptés de payer de l'impôt sur les distributions reçues par Énergir et commenter également si cela modifie l'évaluation de la relation rendement risque du titre d'Énergir par ces investisseurs.

Réponse:

Please see response to Request 11.1 above. The ROE authorized for Énergir in this proceeding is done on a standalone basis and is not intended to reflect the tax circumstances of its all investors. In D-90-75, Énergir was allowed to reflect a deemed tax rate in its revenue requirement. Dr. Villadsen's cost of equity analysis reflects a deemed tax rate for Énergir of 26.5% (Exhibit EGI-1, B-0015, p. 83). It is Dr. Villadsen's understanding that Énergir's taxable income flows to its parent companies, which then pay a corporate income tax, depending on their taxpayer status.

PRIME DE RISQUE DE MARCHÉ ET VOLATILITÉ

12. **Références :**
- (i) Pièce [B-0015](#), p. 42, lignes 4 à 9;
 - (ii) Pièce [B-0015](#), p. 62, lignes 4 à 8;
 - (iii) Pièce [B-0039](#), p. 4 du fichier pdf;
 - (iv) Pièce [B-0038](#), p. 4 du fichier pdf;
 - (v) Pièce [B-0015](#), p. 10 et 11, A11.

Préambule :

(i) « *Further, as shown in both academic and industry analysis, the allowed risk premium over the risk-free rate is inversely related to the risk-free rate. For example, Villadsen et al. (2017) found that the allowed risk premium increases by approximately 0.44 % for each 1% decline in the risk-free rate using data for the period 1990 through 2015. Morin finds that the risk premium increases by 0.52 % for each 1% decline in the risk-free rate. Thus, the risk premium is likely to increase as the risk-free rate declines* ». [nous soulignons] [notes de bas de page omises]

(ii) « *Like the cost of capital itself, the market equity risk premium is a forward-looking concept. It is by definition the premium above the risk-free interest rate that investors can expect to earn by investing in a value-weighted portfolio of all risky investments in the market. The premium is not*

directly observable, and must be inferred or forecasted based on known market information ». [nous soulignons]

(iii) La pièce B-0039 contient l'approche théorique du Dr. Morin citée en (i). Dans cette pièce, le Dr. Morin mentionne notamment ce qui suit :

« Another risk premium technique to estimate the cost of common equity consists of examining the risk premiums implied in the returns on equity allowed by the regulatory commissions for utilities over some past period relative to the contemporaneous level to the long-term Treasury bond yield. Allowed equity returns are reported on a quarterly basis by Regulatory Research Associates. To illustrate, the graph of Figure 4-3 shows the year-by-year allowed risk premium over long-term Treasury yields for the 1987-2005 time period for the electric industry ». [nous soulignons]

(iv) La pièce B-0038 contient l'approche théorique de Villadsen et al. (2017) citée en (i). Dans cette pièce, les auteurs mentionnent notamment ce qui suit :

« This method calculates the statistical relationship between some measure of the risk premium in the cost of equity for the regulated entities in question and an interest rate, to assess the risk premium that should be used at the current interest rate.

[...]

If the parameters are statistically significant, the equation can be used to assess what regulators in the relevant industry traditionally have allowed in terms of a risk premium over long-term bonds, A_0 , and to assess how the equity risk premium changes with the Treasury bond yield. Returning to Eq. (6.1), the estimated risk premium would then be added to the current or forecasted Treasury bond yield to result in the estimated ROE ». [nous soulignons]

(v) Brattle explique les trois critères du taux de rendement raisonnable (investissement comparable, attraction des capitaux et intégrité financière) et leurs relations avec le coût du capital. À cet égard, elle mentionne notamment ce qui suit :

« Put simply, a fair return must be sufficiently attractive to compensate investors for forgoing the opportunity to earn a return from an alternative investment of comparable risk. The return that investors require to compensate for this opportunity cost is the cost of capital ».

Demandes :

12.1 En vous référant à (i) et (iii), veuillez expliquer le concept de « *allowed risk premium* ».

Réponse:

In this type of analysis, sometimes called the “risk premium model,” the cost of equity

capital for utilities is estimated based on the historical relationship between allowed ROEs in utility rate cases and the risk-free rate of interest at the time the ROEs were granted. These estimates add a “risk premium” implied by this relationship to the relevant (prevailing or forecast) risk-free interest rate:

$$\text{Cost of Equity} = r_f + \text{Risk Premium}$$

The allowed utility “risk premium” in each historic period can be calculated as the difference between allowed returns and the prevailing Treasury bond yield, since this represents the compensation for risk allowed by regulators. The statistical technique of ordinary least squares (“OLS”) regression can be used to estimate the parameters of the linear equation:

$$\text{Risk Premium} = A_0 + A_1 \times (\text{Treasury Bond Yield})$$

For clarity, Dr. Villadsen did not use the Implied Risk Premium Model in her estimation of the cost of equity in this proceeding.

- 12.2 En vous référant à (ii), veuillez expliquer comment la prime de risque de marché utilisée dans l’étude du Dr. Morin (références (i) et (iii)) a été inférée ou déterminée.

Réponse:

The market risk premiums described in (ii) are different than the implied risk premium studied by Dr. Morin. The market risk premium described in (ii) is based on the difference between the expected return of the stock market and the risk-free rate. That is, it is the premium that investors would expect to earn for holding a market-value weighted portfolio of the securities in market. This is the “MRP” that is used in the CAPM and ECAPM.

The implied risk premium described in Dr. Morin’s study (and in references (i) and (iii)) is described in response to Request 12.1 above. The Implied Risk Premium Model described by Dr. Morin relates the ROEs awarded by regulatory commissions to that of the prevailing government bond yields at the time of the decision. That is, the implied risk premium is the risk premium that regulators have awarded regulated entities above the prevailing risk-free rate. The Implied Risk Premium Model, when properly designed, executed, and placed in the proper context, can be a useful benchmark for a utility’s cost of equity for a regulated entity.

- 12.3 En vous référant à (ii), veuillez expliquer comment la prime de risque de marché utilisée dans l’étude de Villadsen et al. (2017) (références (i) et (iv)) a été inférée ou déterminée.

Réponse:

See response to Request 12.2 above. To clarify, the reference to Villadsen et al. in (i) and (iv) is the implied risk premium, using similar analytical techniques as described by Dr. Morin.

12.4 En vous référant à (iii) et (iv), veuillez confirmer que la relation suivante citée en (i) :

« *allowed risk premium over the risk-free rate is inversely related to the risk-free rate* »
repose sur les décisions passées des régulateurs.

- Dans la négative, veuillez expliquer.
- Dans l'affirmative, veuillez expliquer si le recours à cette relation n'induirait pas une forme de circularité dans l'approbation du taux de rendement des Demanderesses.

Réponse:

Confirmed. The Implies Risk Premium is not based on a formal model of the cost of capital and has not been explored in the academic literature to the extent that other models, such as the CAPM and DCF have. When properly designed, executed, and placed in the proper context, the Implied Risk Premium model provides a useful benchmark for the cost of equity estimates.

Dr. Villadsen did not use the Implied Risk Premium Model in her estimation of the cost of equity in this proceeding.

12.5 En vous référant à (iii) et (iv), veuillez confirmer que l'existence d'une relation inverse (selon une équation de régression linéaire) entre les taux de rendement approuvés par les régulateurs et les taux d'intérêt sans risque est nécessaire pour que l'affirmation suivante en (i) soit vérifiée :

« *allowed risk premium over the risk-free rate is inversely related to the risk-free rate* ».

Veuillez élaborer.

Réponse:

The question is not clear to Dr. Villadsen. To be responsive, the quote at reference (i) in the request is describing the inverse relationship between regulators' approved ROEs and the prevailing risk-free rate, which results from the linear regression analysis.

12.6 En vous référant aux réponses aux questions 12.1 à 12.5, veuillez expliquer comment la relation « *allowed risk premium over the risk-free rate is inversely related to the risk-free rate* » s'applique dans un contexte prospectif de détermination du coût en capital comme celui décrit en (ii).

Dans votre réponse, veuillez également expliquer comment le recours à cette relation peut s'inscrire dans les critères mentionnés en (v).

Réponse:

Please see response to Request 12.2 above.

13. Références :
- (i) Pièce [B-0015](#), p. 36 à 40;
 - (ii) FRED, Federal Reserve Bank of St. Louis, <https://fred.stlouisfed.org/series/VIXCLS/>, January 19, 2022;
 - (iii) FRED, Federal Reserve Bank of St. Louis, <https://fred.stlouisfed.org/series/BAMLH0A0HYM2>, January 19, 2022;
 - (iv) Site Web Yahoo Finance.com, [Graphique S&P500](#) et [graphique CBOE SKEW Index](#), consulté le 19 janvier 2021;
 - (v) CBOE, [Dawn of a New Era Brings on the Existence of Skew](#), Kevin Davitt, 19 octobre, 2021;

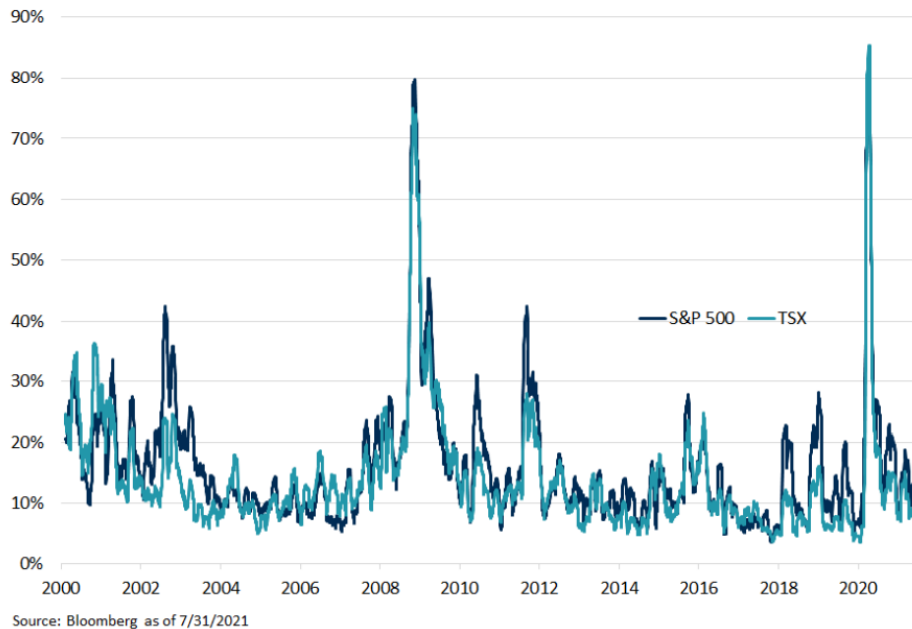
Préambule :

(i) « *Risk premiums provide an indication of the compensation investors expect to hold securities that are not risk free. If an investor demands a larger risk premium then the cost of equity will be larger. There are several indicators of risk premium magnitudes in addition to the yield spreads discussed above. For example, indicators such as stock market volatility (e.g. VIX in the U.S.) provide insights into the risk premium required by investors. SKEW provides a useful indicator of volatility over the next 12 months whereas, the MRP measures the compensation required to hold a security over a long investment horizon (e.g. more than one year), such as when rates are expected to be in effect. For this reason, the forecasted MRP is the most informative for determining the cost of equity in this proceeding.*

Q36. *What is the current evidence regarding market volatility?*

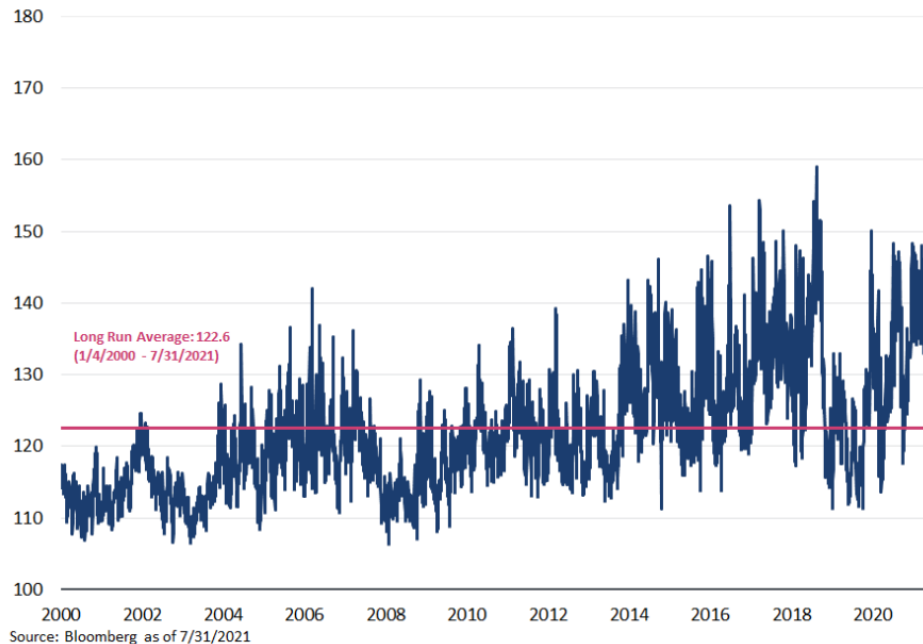
A36 : *Recently, financial markets have become extremely volatile as a result of the economic and financial impacts from the COVID-19 pandemic. Figure 13 below displays the 30-day trailing average volatility of the TSX and S&P 500. Volatility in both the Canadian and U.S. markets peaked in early 2020 at the height of the COVID-19 pandemic, surpassing the peak during the financial crisis of 2008. In fact, the U.S. based VIX, which is frequently referred to as the market's fear index, reached an all-time high of 82.69 on March 16, 2020. Volatility in both Canada and U.S. remained elevated for some time but has recently returned to pre-COVID-19 levels.*

FIGURE 13: VOLATILITY



Similarly, the SKEW index, which measures the market's willingness to pay for protection against negative "black swan" stock market events (i.e., sudden substantial downturns), shows that investors are cautious. A SKEW value of 100 indicates outlier returns are unlikely, but as the SKEW increases, the probability of outlier returns becomes more significant. Figure 14 below shows the development in the SKEW since 2000 and that the index has recently increased following a period of declining SKEW. The index spiked over 170.6 on June 25, 2021, which is 48 points above its long run average of 122.6. This indicates that despite current volatility levels returning to pre-pandemic levels, investors are willing to pay for increasingly expensive hedges to protect against downturns in the market. If the returns that investors received for this level of risk were appropriate, then they would be less willing to pay for expensive hedges.

FIGURE 14: SKEW



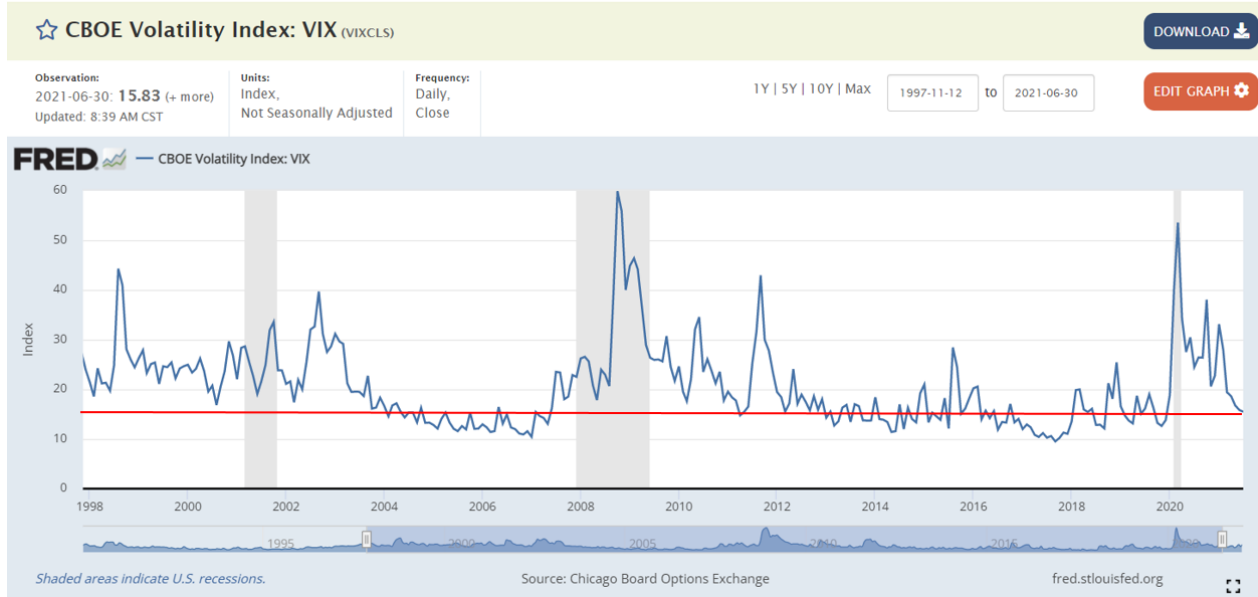
Q37 : What is the Market Risk Premium?

A37 : In general, a risk premium is the amount of “excess” return—above the risk-free rate of return—that investors require to compensate them for taking on risk. As illustrated in Figure 4 above, the riskier the investment, the larger the risk premium investors will require.

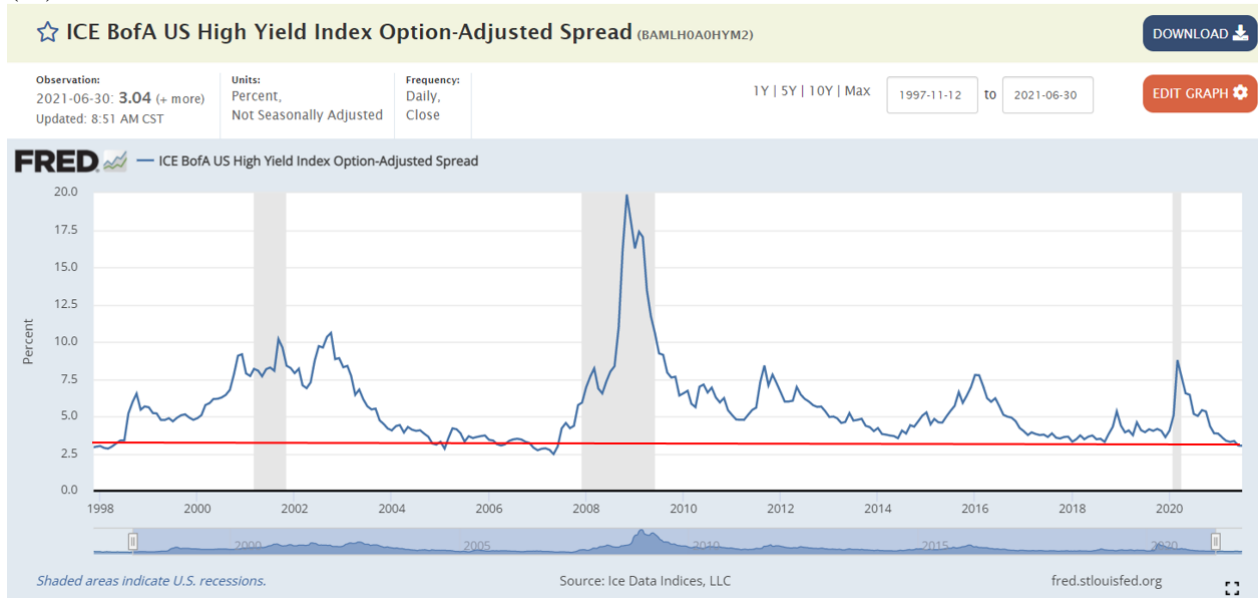
[...]

The heightened volatility has increased the premium that investors require to hold risky assets, especially when measured utilizing forward-looking methodologies that estimate expected market returns with reference to current dividend yields. Since the beginning of the pandemic, Bloomberg’s forward looking estimate of the MRP reached 10.10 % in Canada and 9.05 % in the U.S (see Figure 15 below). Currently, the forecasted MRP is 8.45 % in Canada and 8.68 % in the U.S. Clearly, the heightened financial and economic uncertainty resulting from the COVID-19 pandemic has increased the premium that investors require to hold risky assets such as the equity in the Utilities ». [nous soulignons], [notes de bas de page omises]

(ii)



(iii)

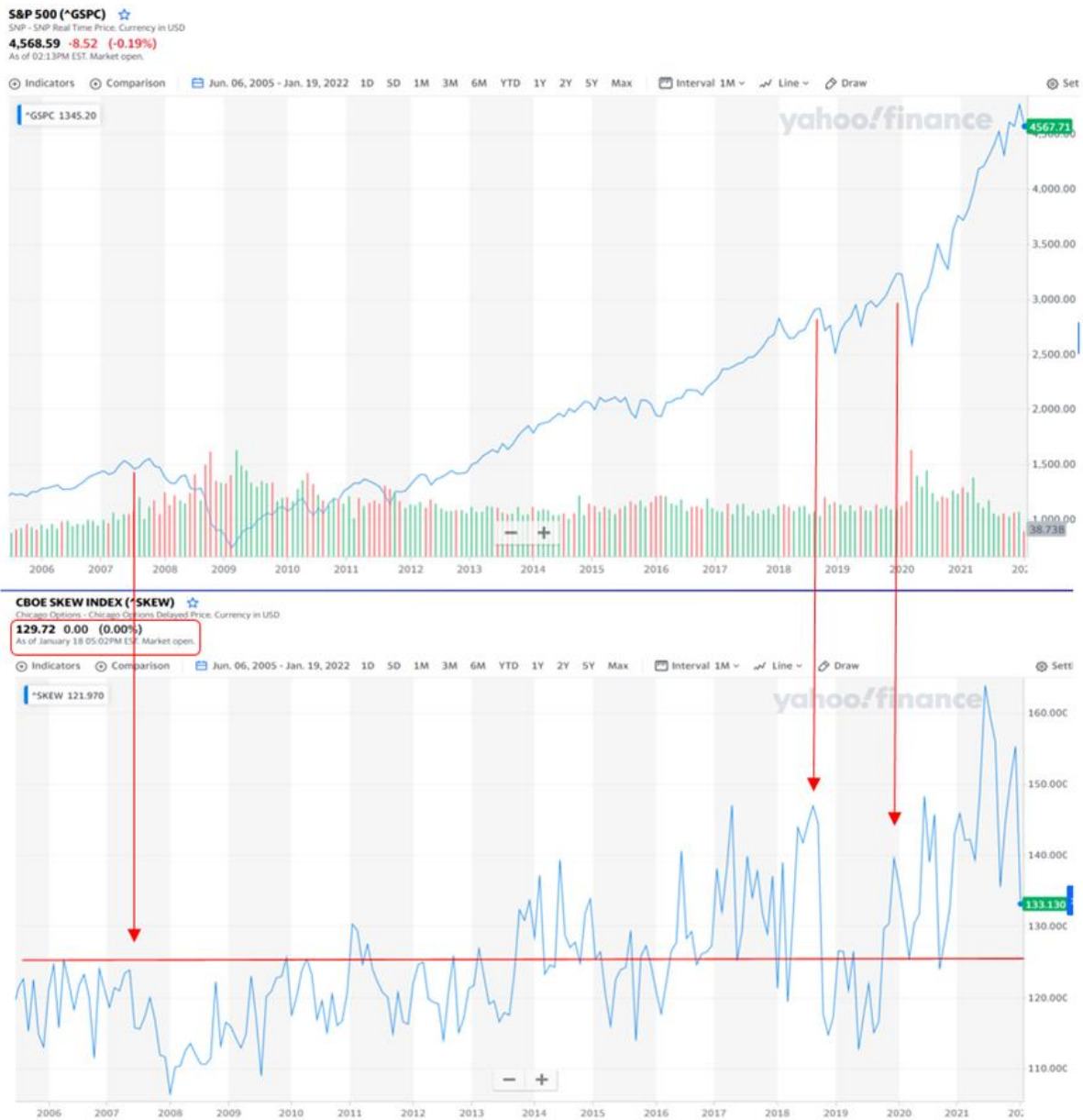


« *The ICE BofA Option-Adjusted Spreads (OASs) are the calculated spreads between a computed OAS index of all bonds in a given rating category and a spot Treasury curve. An OAS index is constructed using each constituent bond’s OAS, weighted by market capitalization. The ICE BofA High Yield Master II OAS uses an index of bonds that are below investment grade (those rated BB or below).*

This data represents the ICE BofA US High Yield Index value, which tracks the performance of US dollar denominated below investment grade rated corporate debt publicly issued in the US domestic market. To qualify for inclusion in the index, securities must have a below investment grade rating (based on an average of Moody's, S&P, and Fitch) and an investment grade rated country of risk (based on an average of Moody's, S&P, and Fitch foreign currency long term sovereign debt ratings) ». [nous soulignons]

En comparant l'évolution de ces deux indices, la Régie constate qu'il semble y avoir une assez grande corrélation entre ces deux indices, particulièrement lors des périodes de plus forte volatilité.

(iv)



(v) « Broad-based index options (OEX options and SPX options) were introduced by Cboe in 1983. For the first four years of index option trading there was almost no observable skew embedded in the market.

[...]

Markets and prices are driven by supply and demand and the index options marketplace is no different. Let's consider the prevailing supply/demand dynamic for S&P 500 options. The demand

side of the ledger is broad and varied. Buyers of index options come in all forms from individual to institutional traders. Most are motivated by the desire to limit their portfolio risk for a defined time frame.

[...]

Demand

With that in mind, a huge pool of natural buyers of S&P 500 downside protection (puts) exists. These people and institutions benefit from markets moving higher and look to insulate their assets in the event of declines. Furthermore, market participants are often willing to finance the cost – **premium** – of that protection – **put** – by giving up some potential upside, like selling calls.

Supply

Who supplies the market? More specifically, who is willing to sell OTM S&P 500 puts and purchase OTM calls? The supply side is sizeable, but narrower. The primary suppliers are well capitalized trading firms that act as market makers. Dealers like large banks are also a significant player in the listed index options market.

Market makers and dealers are especially cognizant of the fact that markets tend to move down with greater velocity than when they move higher. They also know that there is unequal, or skewed, demand for OTM puts and supply of OTM calls.

The supply side of the market altered their models or probability assumptions following October 19, 1987. The updated perceptions of unequal tail risk are now omnipresent.

[...]

Volatility Skew, simply put...

Volatility Skew describes the observation that options with different strike prices, but the same underlying asset and expiration date can have different implied volatilities. Prior to 1987, traders often assumed that implied volatilities between in-the-money, at-the-money, and out-the-money options were constant. In reality, traders notices people were willing to pay more for downside protection than upside speculation, causing an imbalance in supply and demand, or skew.

[...]

Referencing the SKEW White Paper, there's a historical relationship between the Cboe Volatility Index® (VIX® Index) and the SKEW Index. Namely, there's a tendency for higher SKEW Index measures in a lower VIX Index environment. The SKEW Index tends to fall when the VIX Index rises. That likelihood follows logically from the previous example of the SKEW Index often declining when the S&P 500 Index falls. The VIX Index typically rises when the broad market sells off». [nous soulignons]

Demandes :

- 13.1 Veuillez confirmer que les plus fortes hausses de l'indice VIX observées particulièrement en 2008 et 2020, mais également en 2011, 2015 et 2018 (référence (i)), coïncidaient avec les plus fortes baisses du marché boursier enregistrées par l'indice S&P 500 (référence (iv)), et si le niveau récent de l'indice VIX pourrait être qualifié de modéré ou normal, tel qu'observé à la référence (ii). Si non, veuillez expliquer.

Réponse:

Dr. Villadsen confirms that significant increases in the VIX Index historically have coincided with significant declines in the stock market, such as the S&P 500.

As discussed in Dr. Villadsen's Direct Testimony (Q/A 36, EGI-1, B-0015), the VIX reached an all-time high of 82.69 on March 16, 2020 and have since returned to pre-COVID-19 levels. Dr. Villadsen would describe the 2020 VIX spike as extraordinary but levels have since moderated to near-"normal" levels. By "normal" levels Dr. Villadsen means levels similar to that observed as a long-term average.

- 13.1.1. Veuillez confirmer que la durée de la récession et la durée de la forte volatilité des marchés boursiers, définie par un indice VIX de plus de 30, ont été plus longues lors de la crise financière de 2007-2008 que lors de la crise COVID-19, comme on peut le constater à la référence (ii). Veuillez commenter l'impact que ces deux facteurs peuvent avoir sur la confiance des investisseurs.

Réponse:

Dr. Villadsen confirms that the VIX Index remained elevated longer during the 2007-2008 financial crisis than during the COVID-19 crisis. Dr. Villadsen confirms that duration of the recession was longer during the financial crisis, based on the determinations of National Bureau of Economic Research (NBER)'s Business Cycle Dating Committee. However, Dr. Villadsen notes that NBER determined "that a trough occurred in April 2020, the committee did not conclude that the economy has returned to operating at normal capacity." NBER goes on to note

"The NBER's traditional definition of a recession involves a decline in economic activity that lasts more than a few months. For example, the previous shortest recession occurred in the first half of 1980 and lasted six months. However, in deciding whether to identify a recession, the committee weighs the depth of the contraction, its duration, and whether economic activity declined broadly across the economy (the diffusion of the downturn). The recent downturn had different characteristics and dynamics than prior recessions. Nonetheless, the committee concluded that the unprecedented magnitude of the decline in employment and

production, and its broad reach across the entire economy, warranted the designation of this episode as a recession, even though the downturn was briefer than earlier contractions.” <https://www.nber.org/news/business-cycle-dating-committee-announcement-july-19-2021>

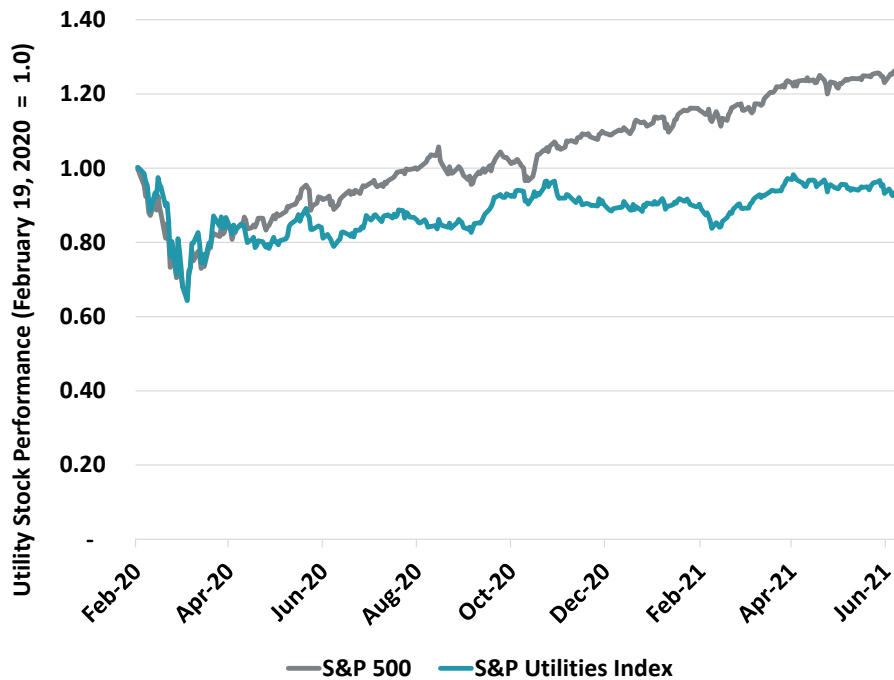
Dr. Villadsen agrees that while the recession lasted for a shorter duration, the economy is still contending with lingering impacts of the COVID-19 pandemic. Dr. Villadsen discusses many of these lingering impacts and the effects they have on investor confidence in Section V of her Direct Testimony (Exhibit EGI-1, B-0015).

- 13.1.2. Veuillez confirmer que le temps requis pour que le niveau de l'indice S&P 500 récupère complètement le niveau du sommet boursier d'avant-crise a été 9 fois plus rapide, soit environ 7 mois lors de la crise COVID-19 (de février 2020 à août 2020), que lors de la crise financière de 2007-2008, soit environ 65 mois (d'octobre 2007 à mars 2013). Veuillez commenter l'impact que cela a pu avoir et comment cela peut influencer la confiance des investisseurs.

Réponse:

Not confirmed. Pre-COVID-19 peak occurred on February 19, 2020 when the S&P 500 reached 3,386.15. The S&P 500 reached this level again 6 months later on August 18, 2020 (S&P 500 hit 3,389.78 on this day).

Even though the S&P 500 recovered in relative short period of time following the COVID-19 pandemic, utilities (as measured by the S&P Utility Index) continued to underperform for a longer period of time. As shown below, the utility industry underperformed the S&P 500 and has not yet fully recover as of June 30, 2021. As discussed in response to Request 13.1.1 above and Section V of Dr. Villadsen's Direct Testimony (Exhibit EGI-1, B-0015), lingering impacts of the COVID-19 pandemic continue to have impacts on investor confidence.



Please see confidential attachment:

- EGI-18.3.9.

13.2 Veuillez confirmer si l'évolution des écarts de crédit des obligations corporatives de faible qualité (*below investment grade*), présentée à la référence (iii), laquelle semble être assez bien corrélée avec l'indice VIX particulièrement lors des périodes de plus forte volatilité, peut également être un bon indicateur du niveau de prime au risque de marché exigée par les investisseurs, soit l'écart de rendement – au-delà du taux sans risque – que ces derniers exigent pour les compenser pour le risque, tel que souligné à la référence (i). Si non, veuillez expliquer.

Réponse:

Dr. Villadsen has not reviewed credit spreads for sub-investment grade bonds as part of her evidence.

13.2.1. Veuillez confirmer si le fait que les investisseurs semblent prêts à investir dans des obligations corporatives de faible qualité en exigeant un écart de rendement parmi les plus faibles depuis 1997, soit 3,04 % (référence (iii)), pourrait constituer une

démonstration que la prime au risque de marché actuellement exigée demeure relativement faible. Si non, veuillez expliquer.

Réponse:

See response to Request 13.2.

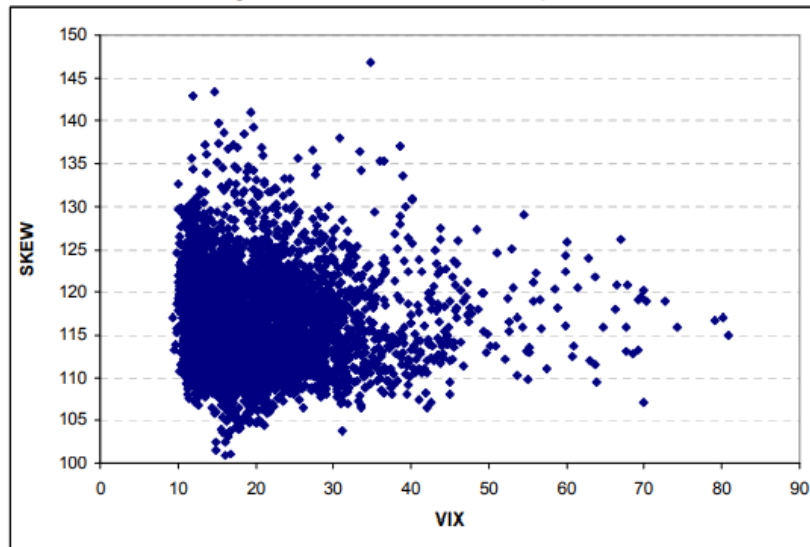
- 13.3 Veuillez confirmer ou corriger la compréhension de la Régie, tirée notamment de l'article du CBOE (référence (v)), à l'effet que l'indice SKEW a tendance à diminuer lorsque le marché boursier, représenté par l'indice S&P 500 (référence (iv)), se met à baisser de façon marquée et a tendance à augmenter lorsque le marché boursier augmente nettement et devient plus dispendieux.

Réponse:

Confirmed. The SKEW index measures the market's concerns regarding negative "black swan" stock market events, such a sudden downturn in the market. A SKEW value of 100 indicates a normal distribution of expected market returns. As SKEW increase, the probability of outlier returns become more likely. In its SKEW whitepaper, the CBOE created a scatter plot of VIX and SKEW from 1990 to 2010. This shows that higher SKEW levels can occur both at low VIX values (when the market is likely rising) and at high VIX values (when the market is likely declining). The CBOE concludes:

"Note that the upper bound of SKEW values decreases as VIX rises to extreme values above 40. The probable reason is that VIX surges during periods of crashing stock prices, when a repeat crash may be not be viewed as that likely."

Chart 6. Scatter plot of SKEW and VIX, 1990 – 2010



Source: CBOE

Source: <https://cdn.cboe.com/resources/indices/documents/SKEWwhitepaperjan2011.pdf>

- 13.4 Veuillez confirmer ou corriger la compréhension de la Régie, tirée notamment de l'article du CBOE (référence (v)), à l'effet que lorsque le marché boursier monte et devient dispendieux, le risque de correction du marché boursier augmente, ce qui créerait une hausse de la demande de protection (options de vente ou *put*) et une hausse de la valeur de cette protection pour les investisseurs, prêts à payer une plus forte prime.

Réponse:

Confirmed. Please also see response to Request 13.3

- 13.5 Veuillez confirmer ou corriger la compréhension de la Régie, tirée notamment de l'article du CBOE (référence (v)), à l'effet que lorsque le marché boursier monte et devient dispendieux, le potentiel du marché boursier pourrait être perçu comme étant plus limité, ce qui créerait une possible réduction de la demande pour les options d'achat à la monnaie (*at the money*) ou hors de la monnaie (*out of the money*) et une réduction de la valeur de ces options d'achat pour les investisseurs, moins enclin à payer une forte prime.

Réponse:

Confirmed. Please also see response to Request 13.3

13.6 Veuillez confirmer ou corriger la compréhension de la Régie, tirée notamment de l'article du CBOE (référence (v)), à l'effet que la tendance haussière de l'indice SKEW au cours des dernières années pourrait s'expliquer en partie par le phénomène de l'offre (plus restreinte selon l'article du CBOE) et de la demande (en forte croissance) d'instruments de protection (put) par les investisseurs particuliers et institutionnels cherchant à protéger leurs gains découlant de la forte hausse des marchés boursiers ces dernières années et ce, en absence d'alternatives attrayantes du côté des titres à revenus fixes, considérant la très forte baisse des taux d'intérêt au cours des dernières années.

Réponse:

Neither confirmed or denied. Dr. Villadsen has not studied or analyzed recent supply and demand imbalances of options and the impact on the SKEW Index.

13.7 Dans la mesure où la hausse de l'indice SKEW reflète la propension des investisseurs à payer davantage pour la protection contre des baisses de marché que pour spéculer sur la poursuite de la hausse du marché boursier, tel que souligné à la référence (v) (« *willing to pay more for downside protection than upside speculation, causing an imbalance in supply and demand, or skew* »), veuillez confirmer s'il serait raisonnable de croire que la hausse de l'indice SKEW pourrait constituer une indication que le marché boursier devient plus dispendieux selon la perception d'une majorité d'investisseurs. Si non, veuillez expliquer.

Réponse:

Confirmed. It is reasonable to expect that the SKEW Index rise is indication that the market is becoming more expensive based on the perception of a majority of investors and that they are looking for protection of a negative downside event in the stock market. That is, investors' risk perceptions remain elevated and willing to pay for expensive hedges.

CAPM / ECAPM

- 14. Références :**
- (i) Pièce [B-0015](#), p. 68, note de bas de page # 146;
 - (ii) Pièce [B-0015](#), p. 45, lignes 5 à 12;
 - (iii) Pièce [B-0015](#), p. 72, lignes 20 et 21 et p. 73, lignes 1 à 3;
 - (iv) Pièce [B-0015](#), Annexe BV-4.11 (*Panel A et B*);
 - (v) Pièce [B-0015](#), Annexe BV-5.11 (*Panel A et B*);
 - (vi) Pièce [B-0015](#), p. 113 à 115 du fichier pdf.

Préambule :

(i) « *The U.S. based CAPM and ECAPM estimates were implemented using Canadian benchmarks* ».

(ii) « *The North American capital markets are integrated and investors have options to seek alternative investments in markets with the highest expected returns that are available to them. This integrated market relationship is fundamental to the fair return standard and provides insight to the “comparable investments” and “capital attraction” criteria of the standard. Furthermore, I also consider this fact when assessing, for example, what MRP to employ in my CAPM analysis. Put simply, if U.S. and Canadian markets are highly integrated, I need to rely on comparable set of companies from both countries, rather than from just Canada* ». [note de bas de page omise]

(iii) « *For the long-term growth rate for the final, constant-growth stage of the multi-stage DCF estimates, I use the long-term nominal Canadian GDP growth forecast of 3.7 % from TD Economics. I use the most recent long-run U.S. GDP growth forecast of 4.0 % from TD Economics for the U.S. samples. Thus, the long-run (or terminal) growth rate in the multi-stage model is nominal GDP growth* ». [nous soulignons] [notes de bas de page omises]

(iv) Les tableaux (*Panel*) A et B de l'annexe BV-4.11 détaillent les calculs du coût total en capital après taxes (*Overall After-Tax Cost of Capital*) pour chacune des entreprises de l'échantillon « Canadian Sample », et ce, pour les résultats du CAPM et du ECAPM respectivement. Le tableau A se rapporte au scénario 1 des paramètres du CAPM/ECAPM et le tableau B à celui du scénario 2.

Dans ces tableaux, la colonne 8 est le taux d'imposition. À cet égard, Brattle utilise un taux d'imposition représentatif aux Demanderesses (*The Utilities's Representative Income Tax Rate*).

(v) Les tableaux (*Panel*) A et B de l'annexe BV-5.11 détaillent les calculs du coût total en capital après taxes (*Overall After-Tax Cost of Capital*) pour chacune des entreprises des échantillons « Gas Sample » et « Water Sample », et ce, pour les résultats du CAPM et du ECAPM respectivement. Le tableau A se rapporte au scénario 1 des paramètres du CAPM/ECAPM et le tableau B à celui du scénario 2.

Dans ces tableaux, la colonne 8 est le taux d'imposition. À cet égard, Brattle utilise un taux

d'imposition représentatif aux Demanderesses (*The Utilities's Representative Income Tax Rate*).

(vi) La section intitulée « *Cost of Equity Implied by the Overall Cost of Capital* » présente les notions et les éléments de la théorie financière sous-jacents au calcul du coût total en capital après taxes.

Demandes :

14.1 En vous référant à (i) et (ii), veuillez expliquer les raisons qui motivent le choix de recourir au taux sans risque et à la prime de risque du marché canadien afin d'évaluer le taux de rendement des entreprises américaines à l'aide du CAPM et du ECAPM.

Réponse:

The cost of equity set forth in this proceeding is for utilities whose business is domiciled in Canada and whose cash flows are in Canadian dollars. On the other hand, the US companies are domiciled in the US and their cash flows are in US dollars. Financial practitioners and academics have developed several approaches for valuing a company in one country using a proxy group of companies in another country. One such approach is to use a risk-free rate in the same currency as the company's cash flows and a market equity risk premium that is based on a bond issued by the same country. Dr. Villadsen has chosen this approach to estimate the cost of equity for this proceeding.

14.2 En vous référant à (ii) et (iii), veuillez expliquer les raisons qui motivent le choix de recourir au PIB américain pour les entreprises américaines et non pas au PIB canadien.

Réponse:

The US GDP is used as the perpetual growth rate in the multi-stage DCF model for her natural gas and water utility proxy groups. The DCF model is based on an infinite stream of cash flows that will grow over time at a given growth rate. The companies in the natural gas and water utility proxy companies are domiciled in the U.S. Therefore, it is the economic conditions in the U.S. that will determine the pace at which the companies' cash flows will grow in the future. See also, B-0015, p. 76.

14.3 En vous référant à (iv) et (v), veuillez motiver le choix de recourir au taux d'imposition des Demanderesses au lieu d'utiliser le taux d'imposition spécifique à chaque entreprise.

Dans votre réponse, veuillez expliquer si le recours au taux d'imposition des Demanderesses au lieu d'utiliser le taux d'imposition spécifique à chaque entreprise est conforme aux notions et à la théorie financière présentés à la référence (vi).

Réponse:

Financial theory states that the cost of capital is based on the risk of assets that are being financed. Therefore, it is consistent with finance theory to use the tax rate applicable to the cash flows generated by the financed assets (*i.e.*, the Plaintiff's tax rate in this proceeding).

- 14.4 En vous référant à (iii), (iv) et (v), veuillez préciser si les analystes utilisent les taux d'imposition génériques par secteur d'activité, par juridiction ou les taux d'imposition effectifs de chacune des entreprises lorsqu'ils évaluent des scénarios d'investissement. Veuillez élaborer.

Réponse:

Please see response to Request 14.3.

**MODÈLE EMPIRIQUE D'ÉVALUATION DES ACTIFS FINANCIERS (MEÉAF) –
EN ANGLAIS EMPIRICAL ASSET PRICING MODEL (ECAPM)**

15. Références : (i) Pièce [B-0015](#), p. 67 et 68, A62;
(ii) Pièce [B-0015](#), p. 106 du fichier pdf, Annexe BV-1, tableau A-3;

Préambule :

(i) « *Academic research finds that the CAPM has not generally performed well as an empirical model. One of its shortcomings is directly addressed by the ECAPM, which recognizes the consistent empirical observation that the CAPM underestimates the cost of capital for low beta stocks. In other words, the ECAPM is based on recognizing that the actual observed risk-return line is flatter and has a higher intercept than that predicted by the CAPM. The alpha parameter (α) in the ECAPM adjusts for this fact, which has been established by repeated empirical tests of the CAPM. In summary, these studies estimate alpha parameters that range between 1 % and 7.32 %. I apply an alpha parameter of 1.5 % in my application of the ECAPM. Exhibit BV-1 provides further discussion of the empirical findings that have tested the CAPM and also provides documentation for the magnitude of the adjustment, α . I use the lower end of the adjustment to be conservative* ». [nous soulignons], [notes de bas de page omises]

(ii) «

FIGURE A-3

EMPIRICAL EVIDENCE ON THE ALPHA FACTOR IN ECAPM*

AUTHOR	RANGE OF ALPHA	PERIOD RELIED UPON
Black (1993) ¹	1% for betas 0 to 0.80	1931-1991
Black, Jensen and Scholes (1972) ²	4.31%	1931-1965
Fama and McBeth (1972)	5.76%	1935-1968
Fama and French (1992) ³	7.32%	1941-1990
Fama and French (2004) ⁴	N/A	
Litzenberger and Ramaswamy (1979) ⁵	5.32%	1936-1977
Litzenberger, Ramaswamy and Sosin (1980)	1.63% to 3.91%	1926-1978
Pettengill, Sundaram and Mathur (1995) ⁶	4.6%	1936-1990

* The figures reported in this table are for the longest estimation period available and, when applicable, use the authors' recommended estimation technique. Many of the articles cited also estimate alpha for sub-periods and those alphas may vary.

¹ Black estimates alpha in a one step procedure rather than in an un-biased two-step procedure.

² Estimate a negative alpha for the subperiod 1931-39 which contain the depression years 1931-33 and 1937-39.

³ Calculated using Ibbotson's data for the 30-day treasury yield.

⁴ The article does not provide a specific estimate of alpha; however, it supports the general finding that the CAPM underestimates returns for low-beta stocks and overestimates returns for high-beta stocks.

⁵ Relies on Lizenberger and Ramaswamy's before-tax estimation results. Comparable after-tax alpha estimate is 4.4%.

⁶ Pettengill, Sundaram and Mathur rely on total returns for the period 1936 through 1990 and use 90-day treasuries. The 4.6% figure is calculated using auction averages 90-day treasuries back to 1941 as no other series were found this far back.

Sources:

Black, Fischer. 1993. Beta and Return. *The Journal of Portfolio Management* 20 (Fall): 8-18.

Black, F., Michael C. Jensen, and Myron Scholes. 1972. The Capital Asset Pricing Model: Some Empirical Tests, from *Studies in the theory of Capital Markets*. In *Studies in the Theory of Capital Markets*, edited by Michael C. Jensen, 79-121. New York: Praeger.

Fama, Eugene F. and James D. MacBeth. 1972. Risk, Returns and Equilibrium: Empirical Tests. *Journal of Political Economy* 81 (3): 607-636.

Fama, Eugene F. and Kenneth R. French. 1992. The Cross-Section of Expected Stock Returns. *Journal of Finance* 47 (June): 427-465.

Fama, Eugene F. and Kenneth R. French. 2004. The Capital Asset Pricing Model: Theory and Evidence. *Journal of Economic Perspectives* 18 (3): 25-46.

Litzenberger, Robert H. and Krishna Ramaswamy. 1979. The Effect of Personal Taxes and Dividends on Capital Asset Prices, Theory and Empirical Evidence. *Journal of Financial Economics* XX (June): 163-195.

Litzenberger, Robert H. and Krishna Ramaswamy and Howard Sosin. 1980. On the CAPM Approach to Estimation of a Public Utility's Cost of Equity Capital. *The Journal of Finance* 35 (2): 369-387.

».

Demandes :

15.1 En vous référant à (i), veuillez, pour chacune des sources citées en (ii) préciser si le taux sans risque est basé sur les bons du trésor ou sur les taux des obligations à long-terme du gouvernement. Au besoin, veuillez élaborer.

Réponse:

The academic papers listed in (ii) used short-term Treasury bill yields in their analysis.

Dr. Villadsen elaborates that short-term government yields are not appropriate estimates for estimating the cost of equity for regulated utilities, particularly in the current economic

environment. Short-term interest rates are more volatile than long-term interest rates. Short-term yields are also impacted by the monetary policy rate set by the Bank of Canada, which have been held near zero since the COVID-19 pandemic to stimulate the economy. The impacts of monetary policy would downwardly bias the CAPM estimates. In addition, it is most appropriate to use a risk-free rate that closely matches the economic life of the assets being financed. The utilities in this proceeding are investing in long-lived natural gas distribution and storage assets that are expected to have useful lives over multiple-decades. Therefore, a risk-free rate based on long-term government bonds is more appropriate.

- 15.2 Sous l'hypothèse que le taux sans risque dans le modèle MÉAF (CAPM) est basé sur les taux des obligations à long-terme du gouvernement du Canada, veuillez expliquer et justifier le recours à un paramètre alpha de 1,5 % aux fins corriger le phénomène d'aplatissement de la droite rendement-risque que vise justement le modèle MEÉAF (ECAPM).

Réponse:

Dr. Villadsen provides a detailed explanation and citations to academic reports to support her determination that a 1.5% alpha adjustment should be used in the ECAPM analysis. Dr. Villadsen notes that setting alpha equal to 1.5% is a conservative estimate below that needed according to the academic research listed in the technical appendix (Exhibit EGI-1, B-0015). The reduction in the alpha parameter reflects the use of a long-term risk-free rate.

AJUSTEMENTS D'HAMADA

16. **Références :**
- (i) Pièce [B-0015](#), p. 65, lignes 14 à 17 et p. 66, lignes 1 et 2;
 - (ii) Pièce [B-0015](#), p. 68 et 69, tableaux 25, 26 et 27;
 - (iii) Pièce [B-0015](#), tableau BV-4.4;
 - (iv) Pièce [B-0015](#), tableau BV-5.4;
 - (v) Pièce [B-0015](#), Annexe BV-4.3 (*Panel A à Panel H*);
 - (vi) Pièce [B-0015](#), Annexe BV-5.3 (*Panel A à Panel Q*);
 - (vii) Pièce [B-0015](#), p. 117.

Préambule :

(i) « *The levered equity betas for the sample companies and the simple average betas for each sample are reported above in Figure 18, Figure 20, and Figure 21. Importantly, however, the financial leverage inherent in the sample company capital structures varies both within and across the samples. Consequently, I apply two formulations of the Hamada equation to unlever the individual sample company betas and relever each sample's average asset beta at the Utilities' current regulatory capital structure* ».

(ii) Les tableaux 25, 26 et 27 présentent les résultats des modèles CAPM et ECAPM pour les échantillons « *Canadian Sample* », « *Gas Sample* » et « *Water Sample* » respectivement. Pour chaque modèle, des taux de rendement sont présentés, à savoir selon les méthodes « *Financial Risk Unlevered Method* », « *Hamada Unlevered Without Taxes* » et « *Hamada Unlevered With Taxes* ».

(iii) Le tableau BV-4.4 rapporte la structure de capital moyenne sur trois ans (*3-Year Average Capital Structure*) de chacune des entreprises des échantillons « *Canadian Sample* ».

(iv) Le tableau BV-5.4 rapporte la structure de capital moyenne sur trois ans (*3-Year Average Capital Structure*) de chacune des entreprises des échantillons « *Gas Sample* » et « *Water Sample* ».

(v) Les tableaux (*Panel*) A à H de l'annexe BV-4.3 contiennent les renseignements relatifs à l'évaluation des structures de capital selon la valeur au livre de chacune des entreprises de l'échantillon « *Canadian Sample* » en date du deuxième trimestre des années 2016 à 2021.

(vi) Les tableaux (*Panel*) A à Q de l'annexe BV-5.3 contiennent les renseignements relatifs à l'évaluation des structures de capital selon la valeur au livre de chacune des entreprises des échantillons « *Gas Sample* » et « *Water Sample* » au deuxième trimestre des années 2016 à 2021.

(vii) « *Hamada adjustment procedures-so-named for Professor Robert S. Hamada who contributed to their development-are ubiquitous among finance practitioners when using the CAPM to estimate discount rates. They are also utilized by many regulatory bodies. The U.K.*

Competition Commission as well as other U.K regulators and the Western Australia Economic Regulation Authority rely on an unlevering / relevering technique to determine the cost of equity capital for the entities they regulate ». [note de bas de page omise]

Demandes :

16.1 À l'aide des renseignements contenus aux tableaux 25, 26 et 27 (référence (ii)), la Régie, pour chacun des modèles CAPM et ECAPM et pour chacune des échantillons « *Canadian Sample* », « *Gas Sample* » et « *Water Sample* », établit l'écart entre les taux de rendement selon la moyenne des deux méthodes « *Hamada Unlevered Without Taxes* » et « *Hamada Unlevered With Taxes* » et selon la méthode « *Financial Risk Unlevered Method* » :

Taux de rendement selon méthode		CAPM				ECAPM ($\alpha = 1.5\%$)			
		40 %		46 %		40 %		46 %	
		Scénario 1	Scénario 2	Scénario 1	Scénario 2	Scénario 1	Scénario 2	Scénario 1	Scénario 2
Canadian Sample									
<i>Financial Risk Unlevered Method</i>	[1]	8,5%	10,7%	7,7%	9,6%	8,7%	10,9%	7,9%	9,8%
<i>Hamada Unlevered Without Taxes</i>	[2]	8,5%	10,8%	7,7%	9,7%	8,4%	10,7%	7,8%	9,8%
<i>Hamada Unlevered With Taxes</i>	[3]	8,2%	10,4%	7,6%	9,5%	8,2%	10,4%	7,7%	9,7%
= moyenne([2] + [3]) - [1]		-0,15%	-0,10%	-0,05%	0,00%	-0,40%	-0,35%	-0,15%	-0,05%
Gas Sample									
<i>Financial Risk Unlevered Method</i>	[1]	10,6%	13,7%	9,5%	12,3%	10,7%	13,9%	9,6%	12,4%
<i>Hamada Unlevered Without Taxes</i>	[2]	10,2%	13,3%	9,3%	11,9%	9,7%	12,7%	9,0%	11,6%
<i>Hamada Unlevered With Taxes</i>	[3]	9,8%	12,6%	9,0%	11,6%	9,3%	12,2%	8,8%	11,3%
= moyenne([2] + [3]) - [1]		-0,60%	-0,75%	-0,35%	-0,55%	-1,20%	-1,45%	-0,70%	-0,95%
Water Sample									
<i>Financial Risk Unlevered Method</i>	[1]	10,7%	13,9%	9,6%	12,4%	11,2%	14,3%	10,0%	12,8%
<i>Hamada Unlevered Without Taxes</i>	[2]	10,2%	13,2%	9,2%	11,9%	9,6%	12,7%	9,0%	11,6%
<i>Hamada Unlevered With Taxes</i>	[3]	9,6%	12,4%	8,9%	11,3%	9,2%	12,0%	8,7%	11,2%
= moyenne([2] + [3]) - [1]		-0,80%	-1,10%	-0,55%	-0,80%	-1,80%	-1,95%	-1,15%	-1,40%

Veillez valider les données de ce tableau et au besoin veuillez y apporter les corrections nécessaires.

Réponse:

Please see corrected table below. The Canadian Sample CAPM and ECAPM have been adjusted as described in request Series 6.5 above. Dr. Villadsen identified an inconsistency in her Canadian Cost of Capital Model, which impacted the CAPM and ECAPM results for the Canadian sample. Dr. Villadsen also found that the average (“moyenne”) calculations in the table above were not correct.

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		CAPM				ECAPM			
		40%		46%		40%		46%	
		Scenario 1	Scenario 2	Scenario 1	Scenario 2	Scenario 1	Scenario 2	Scenario 1	Scenario 2
Canadian Sample									
Financial Risk Adjusted Method	[1]	8.9%	11.2%	8.0%	10.1%	9.1%	11.4%	8.2%	10.2%
Hamada Adjustment Without Taxes	[2]	8.8%	11.3%	8.0%	10.1%	8.6%	11.1%	8.0%	10.2%
Hamada Adjustment With Taxes	[3]	8.5%	10.8%	7.8%	9.9%	8.4%	10.7%	7.9%	10.0%
= Average([2] + [3]) - [1]		-0.24%	-0.19%	-0.11%	-0.06%	-0.55%	-0.51%	-0.21%	-0.16%
Gas Sample									
Financial Risk Adjusted Method	[4]	10.6%	13.7%	9.5%	12.3%	10.7%	13.9%	9.6%	12.4%
Hamada Adjustment Without Taxes	[5]	10.2%	13.3%	9.3%	11.9%	9.7%	12.7%	9.0%	11.6%
Hamada Adjustment With Taxes	[6]	9.8%	12.6%	9.0%	11.6%	9.3%	12.2%	8.8%	11.3%
= Average([5] + [6]) - [4]		-0.60%	-0.78%	-0.39%	-0.51%	-1.22%	-1.40%	-0.76%	-0.89%
Water Sample									
Financial Risk Adjusted Method	[7]	10.7%	13.9%	9.6%	12.4%	11.2%	14.3%	10.0%	12.8%
Hamada Adjustment Without Taxes	[8]	10.2%	13.2%	9.2%	11.9%	9.6%	12.7%	9.0%	11.6%
Hamada Adjustment With Taxes	[9]	9.6%	12.4%	8.9%	11.3%	9.2%	12.0%	8.7%	11.2%
= Average([8] + [9]) - [7]		-0.82%	-1.08%	-0.58%	-0.78%	-1.73%	-1.99%	-1.21%	-1.40%

Sources and Notes:

[1] - [3]: From ERRATA BV-4 Canadian CoC Model - Confidential.

[4] - [9]: From BV-5 U.S CoC Model - Confidential.

16.2 En vous référant aux données du tableau de la question précédente, veuillez décrire les principaux facteurs permettant d'expliquer que les ajustements d'Hamada ont un impact plus important sur les taux de rendement des entreprises américaines (*Gas Sample* et *Water Sample*) que sur ceux des entreprises canadiennes (*Canadian Sample*). Veuillez étayer votre réponse à l'aide d'exemples.

Réponse:

Dr. Villadsen's Hamada take the proxy company's market value capital structure and adjust for differences in financial leverage relative to a 40% or 46% book (allowed) capital structure. The natural gas and water utility proxy samples have three-year average market equity structures of 61% and 71%, respectively. Whereas, the Canadian utility proxy sample has a three-year average market equity structure of 48%. (All based on the average of the proxy companies' market equity capital structure). The Hamada adjustment will have a larger impact on the ROE estimates from the natural gas and water utility samples given the relatively larger difference between the market equity capital structure and the 40% or 46% allowed capital structure.

16.3 À l'aide des renseignements contenus aux références (iii) et (v), la Régie présente la valeur moyenne de l'endettement sur trois ans (*3-Year Average Capital Structure*) des entreprises de l'échantillon « *Canadian Sample* » selon la valeur au marché et selon la valeur au livre. Dans ce tableau, la valeur au livre est calculée à l'aide des rubriques « *Book Value, Common*

Shareholder's Equity », « Book Value of Preferred Equity » et « Book Value of Long-Term Debt » de la référence (v).

% endettement <i>3-Year Average Capital Structure</i>	Valeur au marché	Valeur au livre
<i>Canadian Sample</i>		
Algonquin Power & Utilities Corp.	34%	53%
AltaGas Ltd.	51%	48%
Canadian Utilities Limited	49%	59%
Emera Incorporated	55%	63%
Enbridge Inc.	43%	51%
Fortis Inc.	52%	57%
Hydro One Limited	49%	55%
TC Energy Corporation	67%	62%
Moyenne	50,0%	56,1%
Écart-type	9,5%	5,4%

Veillez confirmer l'exactitude des données du tableau ci-dessus. Au besoin, veuillez y apporter les corrections nécessaires.

Réponse:

Please see corrected Canadian cost of capital model provided in response to Request 6.5 above.

16.4 À l'aide des renseignements contenus aux références (iv) et (vi), la Régie présente la valeur moyenne de l'endettement sur trois ans (*3-Year Average Capital Structure*) des entreprises de l'échantillon « *Gas Sample* » selon la valeur au marché et selon la valeur au livre.

Dans ce tableau, la valeur au livre est calculée à l'aide des rubriques « *Book Value, Common Shareholder's Equity* », « *Book Value of Preferred Equity* » et « *Book Value of Long-Term Debt* » de la référence (vi).

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% endettement <i>3-Year Average Capital Structure</i>	Valeur au marché	Valeur au livre
<i>Gas Sample</i>		
Atmos Energy	29%	43%
Chesapeake Utilities	31%	52%
New Jersey Resources	33%	51%
NiSource Inc.	48%	60%
Northwest Natural	38%	54%
ONE Gas Inc.	32%	47%
South Jersey Inds.	52%	66%
Southwest Gas	38%	51%
Spire Inc.	43%	52%
	Moyenne	38,2%
	Écart-type	8,0%
		53,0%
		6,7%

Veillez confirmer l'exactitude des données du tableau ci-dessus. Au besoin, veuillez y apporter les corrections nécessaires.

Réponse:

Dr. Villadsen confirms the market value debt capital structure numbers. Not confirmed for some of the book value debt capital structure numbers. Based on the tabs "Cap_Structure_" in Exhibit EGI 1, B-0017 (row 70), the three-year average book debt capital structures should be: Atmos Energy (44%), Chesapeake Utilities (53%), New Jersey Resources (53%), Northwest Natural (55%), ONE Gas Inc. (50%), South Jersey Inds. (65%), Spire Inc. (53%).

16.5 À l'aide des renseignements contenus aux références (iv) et (vi), la Régie présente la valeur moyenne de l'endettement sur trois ans (*3-Year Average Capital Structure*) des entreprises de l'échantillon « *Water Sample* » selon la valeur au marché et selon la valeur au livre.

Dans ce tableau, la valeur au livre est calculée à l'aide des rubriques « *Book Value, Common Shareholder's Equity* », « *Book Value of Preferred Equity* » et « *Book Value of Long-Term Debt* » de la référence (vi).

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% endettement <i>3-Year Average Capital Structure</i>	Valeur au marché	Valeur au livre
<i>Water Sample</i>		
Amer. States Water	18%	45%
Amer. Water Works	33%	60%
Artesian Res Corp	32%	48%
California Water	31%	56%
Essential Utilities	31%	51%
Global Water Resources Inc	33%	81%
Middlesex Water	20%	46%
SJW Group	37%	52%
	Moyenne	29,4%
	Écart-type	6,7%
Excluant Global Water Resources		
	Moyenne	28,9%
	Écart-type	7,1%

Veillez confirmer l'exactitude des données du tableau ci-dessus. Au besoin, veuillez y apporter les corrections nécessaires.

Réponse:

Dr. Villadsen confirms the market value debt capital structure numbers. Not confirmed for some of the book value debt capital structure numbers. Based on the tabs "Cap_Structure_" in Exhibit EGI 1, B-0017 (row 70), the three-year average book debt capital structures should be: Amer. States Water (46%), Amer. Water Works (61%), Artesian Res Corp (49%), Global Water Resources Inc. (79%), Middlesex Water (47%), SJW Group (53%).

16.6 En vous référant au niveau d'endettement selon la valeur au livre de Global Water Resources présenté dans le tableau de la question précédente, veuillez commenter sur la comparabilité de cette entreprise aux fins de la fixation de la structure de capital et du taux de rendement des Demanderesses.

Réponse:

As discussed in Q/A 50 of Dr. Villadsen's Direct Testimony (Exhibit EGI-1, B-0015), similar to the Plaintiffs, Global Water Resources is a regulated utility that delivers a commodity through a network of distribution assets to serve end use customers. As such, global water resources (and the other water utility proxy companies) have similar business risk characteristics and can be used to estimate the cost of equity of the Plaintiffs. However, it is Global Water Resources' market value capital structure that is used to estimate the cost of equity in the DCF and CAPM/ECAPM methodologies. This cost of equity derived from

Global Water's market value capital structure is then adjusted and applied to the Plaintiffs' expected book value capital structure using standard financial techniques (ATWACC and Hamada). Global Water's market value capital structure is similar to that of the other water utility proxy companies. Dr. Villadsen also does not rely on the cost of equity estimates from the water utility proxy sample to arrive at her ROE recommendation, but instead uses the proxy sample to compare the reasonableness of the estimates from the Canadian and U.S. natural gas utility proxy samples.

- 16.7 En vous référant à (i), aux tableaux des questions 16.3, 16.4 et 16.5, ainsi qu'à la réponse à la question précédente, veuillez commenter la disparité des niveaux d'endettement des entreprises des échantillons canadiens et américains selon la valeur au livre par rapport à celui selon la valeur au marché.

Dans votre réponse, veuillez valider que l'écart type de l'endettement de toutes les entreprises (excluant Global Water Resources), calculé selon la valeur au marché et selon la valeur au livre, se chiffre à 11,7 % et 6 % respectivement. Veuillez commenter ces deux écarts types.

Réponse:

Not confirmed. Please see corrections discussed in response to Request series 6.5, which impacted the market value capital structure of TC Energy in the Canadian sample. Dr. Villadsen estimates a standard deviation of 10.5% of the market value debt capital structure for all proxy companies (excluding Global Water Resources). She also estimates a standard deviation of 5.2% for the market value debt capital structure.

The market value of the capital structure of a company is likely different than the book value capital structure because the market value reflects investors expectation of future growth opportunities. On the other hand, the book value capital structure simply reflects the accounting value of a company.

- 16.8 En vous référant à la disparité des niveaux d'endettement selon la valeur au livre et sous l'hypothèse que la méthode « *Financial Risk Unlevered Method* » et les deux ajustements d'Hamada faisaient appel aux structures de capital selon la valeur au livre, veuillez expliquer les avantages de recourir aux ajustements d'Hamada par rapport à la méthode « *Financial Risk Unlevered Method* ».

Réponse:

The Hamada and ATWACC methodologies adjust for differences in financial leverage between the proxy companies' market value capital structure and the Plaintiffs' assumed

book (authorized) capital structure. Dr. Villadsen relies primarily on the ROE estimates derived from the Hamada adjustments because the Regie in the past has been critical of the ATWACC methodology.

16.9 En vous référant à (vii), veuillez fournir les références aux décisions les plus récentes des organismes de réglementation en Amérique du Nord en lien avec le recours aux ajustements d'Hamada aux fins de la détermination du taux de rendement sur l'avoir propre.

Réponse:

While Dr. Villadsen has not studied all jurisdictions, she is aware of the following applications :

- The California Public Utilities Commission, Decision D.12-12-034 relied on Hamada adjusted betas (p. 38).
- The Oregon Public Utilities Commission's staff relies on the Hamada method. See, for example, testimony of Matt Muldoon in UE-319.
- Mexico's Comisión Reguladora de Energía relies on the Hamada adjustment; see, for example, Appendix 3 to RES/338/2013.

17. **Références :**
- (i) Pièce [B-0015](#), p. 30 et 31, A29;
 - (ii) Dossier R-4136-2020, pièce [B-0018](#), p. 1;
 - (iii) Dossier R-4151-2021, pièce [B-0058](#), p. 2.

Préambule :

(i) « It is important to remember that the cost of equity and capital structure established for the Utilities in this proceeding are expected to be in effect beyond the current extraordinary impacts of the COVID-19 pandemic. The analysis and recommendations should reflect expected market conditions that will prevail over the relevant rate period and not exclusively current market conditions. As discussed further below, many of the inputs to the cost of equity estimation methodologies are currently at unprecedented levels. Sole reliance on current economic and financial conditions to estimate the Utilities' cost of equity would unfairly lock them and their customers into the current economic and financial environment. Doing so would also not provide a fair return, especially when compared to other utilities that did not undergo a cost of capital proceeding during this period. However, the current conditions create an exorbitant amount of uncertainty about the future and, if the financial crisis can be used as a guide, investors' heightened

perception of risk are likely to linger ». [nous soulignons]

(ii) « L'exercice 2019-2020 se caractérise par le contexte économique difficile liée à la pandémie de la COVID-19, qui a entraîné une baisse de la consommation des clients d'Énergir dans les secteurs commercial et industriel, principalement observée au cours de la période de confinement du printemps 2020. La hausse de consommation constatée au cours du premier semestre de l'exercice 2019-2020 a toutefois permis de compenser cette baisse de consommation, voire de dégager un écart de revenus de distribution favorable qui se traduit par un solde à remettre à la clientèle en vertu du mécanisme de découplage de 1,5 M\$.

[...]

Par ailleurs, Énergir constate que la plus grande proportion des autres écarts constatés par rapport à la Cause tarifaire 2019-2020 n'est pas directement liée à la COVID-19. À titre d'exemple, du côté des investissements, la plus grande proportion de la baisse découle du report dans le calendrier de réalisation de différents projets, notamment les projets d'injection de GNR et le projet visant l'extension de réseau pour la desserte en gaz naturel de Métaux BlackRock Inc. et de la zone industrialo-portuaire de Saguenay. Ces reports ont déjà été intégrés dans la prévision 4/8 2019-2020 ainsi que dans les soldes d'ouvertures de la prochaine Cause tarifaire 2020-2021; ils ne découlent donc pas de la pandémie de la COVID-19 ». [nous soulignons] [notes de bas de page omise]

(iii) « *We expect the impact from the COVID-19 pandemic on Energir Inc. (Energir) will be minimal. Energir benefits from regulatory mechanisms in Quebec and Vermont that help mitigate the risks associated with the pandemic, such as lower volumetric sales. Energir benefits from decoupling mechanisms in both Vermont and Quebec. Additionally, in Quebec, Energir benefits from earnings sharing mechanisms for any under or over earning from previous years* ».

Demande :

17.1 Veuillez concilier les affirmations en (i), (ii) et (iii).

Réponse:

As discussed in Section V of Dr. Villadsen's Direct Testimony (Exhibit EG-1, B-0015), there is still financial and economic uncertainty following the COVID-19 pandemic. Measures of investors risk perceptions, such as the market equity risk premium, remain elevated. In addition, recent rising inflation trends create further uncertainty about the pace and extent of economic recovery. These are systematic risks that impact the overall market and can increase the return required to invest in non-risk free securities. The statements in (ii) and (iii) pertain exclusively to fiscal 2019-21 operations and are not elaborating on general market conditions.

See also the discussion in Dr. Brown's testimony (Exhibit EGI-1, B-0027) for business risk considerations.

INTRAGAZ

18. **Références :**
- (i) Pièce [B-0015](#), p. 88;
 - (ii) Pièce [B-0015](#), p. 89;
 - (iii) Pièce [B-0077](#), p. 6 et 7 du fichier pdf;
 - (iv) Pièce [B-0078](#), p. 2 et 3 du fichier pdf;
 - (v) Pièce [B-0077](#), p. 19 du fichier pdf.

Préambule :

(i) « Regulators in other jurisdictions have allowed for a premium for projects that receive a fixed ROE over a long period. For example, the Iowa Utilities Board rely on the so-called Advanced Ratemaking for renewable energy projects and sets the ROE for the full economic life of the asset. In 2017, the Iowa Utilities Board authorized a ROE of 11.0% for Interstate Power and Light Company's New Wind II Project, which was 125 basis points higher than the average allowed ROE for integrated electric utilities (9.75%). Similarly, in 2014, the Iowa Utilities Board awarded MidAmerican Energy Company an ROE of 11.5% for its 11 MW Wind IX project, which was above the average authorized ROE for integrated electric utilities at the time (9.85%). In the settlement agreement for this project, both MidAmerican and the consumer advocate agreed that the ROE should be higher than current capital costs because the project's ROE was fixed for 30-years. The Iowa Utilities Board did not specify how they arrived at the premium, but the magnitude is consistent with the prevailing yield spread between 20-year and 3-year U.S. government or utility bonds ». [notes de bas de page omise]

(ii) « Should the Régie prefer to not grant Intragaz a maturity premium, I find it is reasonable to link Intragaz's ROE to that of Énergir, so that in case Énergir's ROE changes by a specific number of basis points then Intragaz's ROE changes by the same number of basis points ».

(iii) « Iowa Code § 476.53 (2017) authorizes the Board to issue advance ratemaking principles for certain electric generating and transmission facilities. The Legislature intended this section to enable the development of electric generation and transmission to provide "reliable electric service to Iowa customers" and "economic benefits to the state." The Board may grant advance ratemaking principles through a contested case proceeding; the principles adopted by the Board will apply when the costs of the facility are included in electric rates in a general rate case.

Utilities may request ratemaking principles for baseload generating facilities with a nameplate capacity of at least 300 megawatts (MW), alternate energy production facilities, or to significantly alter an existing generating facility. For the purposes of the statute, an "alternate energy production facility" includes wind turbines, as well as any land or improvements necessary or convenient to the construction or operation of the facility and any transmission or distribution facilities necessary to conduct the energy produced by the alternate energy production facility.

The standards for granting ratemaking principles for electric generating facilities are also set forth in Iowa Code § 476.53. As a condition precedent to granting ratemaking principles for a project, Iowa Code § 476.53(3)(c) requires the Board to find that :

(1) The rate-regulated public utility has in effect a board-approved energy efficiency plan as required under section 476.6, subsection 15 [and]

(2) The rate-regulated public utility has demonstrated to the board that the public utility has considered other sources for long-term electric supply and that the facility or lease is reasonable when compared to other feasible alternative sources of supply. The rate-regulated public utility may satisfy the requirements of this subparagraph through a competitive bidding process, under rules adopted by the board, that demonstrate the facility or lease is a reasonable alternative to meet its electric supply needs ». [nous soulignons] [notes de bas de page omise]

(iv) « Ratemaking principles proceedings are conducted pursuant to Iowa Code § 476.53 (2013). Section 476.53 was enacted during the 2001 Legislative Session as part of House File 577. This section provides that when eligible new electric generation is constructed by a rate-regulated public utility, the Board, upon request, shall specify in advance, by order issued after a contested case proceeding, the ratemaking principles that will apply when the costs of the new facility are included in electric rates. Wind IX as proposed by MidAmerican falls within the purview of § 476.53. Alternate energy production facilities, such as these wind facilities, were added to the list of eligible facilities for ratemaking principles by House File 391, enacted during the 2003 Legislative Session. Section 476.53(1) states that the General Assembly's intent in enacting ratemaking principles legislation is to "attract the development of electric power generating and transmission facilities within the state" » [nous soulignons]

(v) « IPL prepared multiple analyses to estimate the total revenues that New Wind II would generate by selling electricity into the MISO wholesale market over the 40-year life of the project. IPL utilizes two different methodologies to estimate these benefits. The first method used by IPL witness Martin Smith is based on a method offered by OCA in the New Wind I proceeding (OCA method) and the other is based on Mr. Smith's rebuttal testimony in the same docket (IPL method). Both methods assume an annual average capacity factor of 44% over the assumed 40-year life of the project ». [notes de bas de page omise]

Demandes :

18.1 Veuillez confirmer que la décision du Iowa Utilities Board relative au projet éolien New Wind II relatée en (i) découle du cadre juridique mentionné en (iii).

Dans votre réponse,

- veuillez expliquer si l'objectif de ce cadre juridique est de prendre en compte le risque

sur la durée d'un projet ou plutôt de permettre le développement de l'approvisionnement fiable et sécuritaire en électricité dans l'État de l'Iowa en plus d'apporter des bénéfices économiques à cet État.

Réponse:

Dr. Villadsen confirms that the Iowa Code permits the Iowa Utility Board to use advance rating making principles to enable the generation of electric generation and transmission assets.

Dr. Villadsen is not a legal expert and cannot comment on the intent of the legal framework referenced in (iii).

- veuillez confirmer que selon ce cadre juridique, un projet doit respecter les conditions énoncées en (iii) pour se prévaloir du « *Advanced Ratemaking* ». Dans le cas contraire, veuillez expliquer.

Réponse:

Dr. Villadsen confirms that the quoted material in (iii) includes conditions that must be met in order for an electric generation or transmission asset to qualify for “ratemaking principles” under Section 476.53 of the Iowa Code.

18.2 En vous référant à (i) et (iv), veuillez confirmer que la décision du Iowa Utilities Board relative au projet éolien Wind IX relatée en (i) découle du cadre juridique mentionné en (iii).

Dans votre réponse, veuillez confirmer que l'objectif de ce cadre juridique applicable au moment de la décision du Iowa Utilities Board relative au projet éolien Wind IX visait le développement de la production et du transport d'électricité dans l'État de l'Iowa. Dans le cas contraire, veuillez expliquer.

Réponse:

Dr. Villadsen confirms that Iowa Utility Board in (iv) found that the Wind IX project “fell within the purview of § 476.53”

Dr. Villadsen is not a legal expert and cannot comment on the objective of the legal framework referenced in (iii). However, Dr. Villadsen observes that the quote in provided in (iv) states “Section 476.53(1) states that the General Assembly's intent in enacting ratemaking principles legislation is to “attract the development of electric power generating and transmission facilities within the state...”.

18.3 En vous référant aux réponses aux questions 18.1 et 18.2, veuillez commenter sur les ressemblances et les différences de l'application du « *Advanced Ratemaking* » dans les contextes de l'État de l'Iowa et des tarifs d'Intragaz.

Réponse:

As discussed in Section VIII B of Dr. Villadsen's Direct Testimony (Exhibit EGI-1, B-0015), the ROE set forth in this proceeding for Intragaz is expected to be in place for a 10-year rate period, which creates risks that capital markets and business risk conditions may change and the authorized ROE will no longer reflect the return required by investors. The Iowa Utilities Board faced a similar challenge when issuing the ROE for wind energy assets, as referenced in (i). In those proceeding, the Iowa Utility Board set the ROE 125 basis higher than the average allowed ROE for integrated electric utilities. As discussed in the response to 18.1, the Iowa Code permits the Iowa Utility Board to use these advance rating making principles to enable the generation of electric generation and transmission assets. It is Dr. Villadsen's understanding that Régie has authority to issue a similar adjustment to Intragaz' ROE to address the risks associated with a 10-year rate period.

18.4 En vous référant à (i) et (v), veuillez élaborer sur la différence et la ressemblance entre les risques du projet éolien New Wind II et ceux d'Intragaz.

Dans votre réponse, veuillez notamment commenter sur la différence entre des risques de vente d'électricité à prix de marché sur un horizon de 40 ans pour le projet New Wind II comparativement à un tarif d'approvisionnement approuvé par la Régie sur la base des coûts de service sur un horizon de 10 ans pour Intragaz.

Réponse:

As discussed in Section VIII B of Dr. Villadsen's Direct Testimony (Exhibit EGI-1, B-0015), setting an authorized ROE for a longer rate period (*e.g.*, 10 years or 40 years) creates risks that the capital market or business risk conditions may change and no longer reflect the return required by investors. For example, changes in inflation changes in energy policy, can change the risk associated with these assets. These risks are challenging to predict and investors make forecasts and projects based on information that is available to them today. This is evidenced by the time value of money, where a dollar today is worth more than a dollar a year from now - investors are pricing in the risk associated with receiving that dollar in the future. There is more uncertainty associated with predicting risk 40-years versus 10-years from now. This is why Dr. Villadsen's recommendation is based on comparing the yields on 10-year and 2-year bond yields. If a longer rate period were contemplated, Dr. Villadsen would use bonds with longer dated maturities to estimate the required maturity premium. Overall, Dr. Villadsen finds that the risks faced by New Wind II and Intragaz related to a longer rate period to be similar.

18.5 Veuillez expliquer la position d’Intragaz à l’égard de la proposition énoncée en (ii).

Réponse:

It is Dr. Villadsen’s understanding that Intragaz’ preference would be for a maturity premium. However, should the Regie prefer to not grant Intragaz such a maturity premium, it is Dr. Villadsen’ understanding that Intragaz is in agreement with the proposal to link its ROE to that of Énergir over the 2023-2032 period.