

DEMANDE DE RENSEIGNEMENTS N° 1 DU DR. BROWN AU DR. HOPKINS

1. Références : General

Demandes :

- 1.1** Please identify any testimony or other public reports authored by Dr. Hopkins concerning gas utilities in any of the following jurisdictions: Alabama, Arizona, Delaware, Florida, Indiana, Kansas, Louisiana, Mississippi, Missouri, Nevada, New Jersey, Ohio, Oklahoma, Oregon, Pennsylvania, and Texas. Please provide copies of such testimony and reports, or references to websites where copies may be obtained.

Réponse :

In Nevada, Dr. Hopkins contributed to comments filed by the Natural Resources Defense Council in Docket No. 19-12019 (Investigation to Determine if Chapter 704 of the Nevada Administrative Code Needs to be Amended to Allow for a Review of Long-Term Natural Gas Procurement Contracts), available at:

https://pucweb1.state.nv.us/PDF/AxImages/DOCKETS_2015_THRU_PRESENT/2019-12/46131.pdf

In Nevada, Dr. Hopkins contributed to comments filed by the Conservation Advocates in Docket No. 21-05002 (Investigation regarding long-term planning for natural gas utility service in Nevada), available at:

https://pucweb1.state.nv.us/PDF/AxImages/DOCKETS_2020_THRU_PRESENT/2021-5/15122.pdf

https://pucweb1.state.nv.us/PDF/AxImages/DOCKETS_2020_THRU_PRESENT/2021-5/14553.pdf

https://pucweb1.state.nv.us/PDF/AxImages/DOCKETS_2020_THRU_PRESENT/2021-5/14673.pdf

https://pucweb1.state.nv.us/PDF/AxImages/DOCKETS_2020_THRU_PRESENT/2021-5/14009.pdf

https://pucweb1.state.nv.us/PDF/AxImages/DOCKETS_2020_THRU_PRESENT/2021-5/13412.pdf

In Oregon, Dr. Hopkins is an author (along with Synapse colleagues) of a forthcoming report regarding pathways to net zero emissions for Oregon buildings, prepared for the Sierra Club.

2. Références : C-ACIG-0028

Q/A 8 “I then provide an introduction to utility risk and establish that different types of risk appear over different time frames.”.

Demandes :

- 2.1. Please confirm that the phrase “utility risk” in this sentence is synonymous with the term “business risk” as used elsewhere in Dr. Hopkin’s evidence. If not confirmed, please explain in detail the difference between “utility risk” and “business risk”.

Réponse :

Confirmed.

3. Références : C-ACIG-0028

Q/A 9 “...and their demonstrated low volatility of returns compared with the U.S. gas utility sample...”.

Demandes :

- 3.1. Please specify in detail what Dr. Hopkins means by “demonstrated low volatility of returns”.

Réponse :

The standard deviations of the annual earned return on equity of Énergir and Gazifère (as documented in Exhibit EGI-15) are smaller than any of the utilities in the U.S. gas sample over the (period).

The standard deviation in Énergir’s returns from 2010 to 2021 (inclusive) was 0.50 percent.

The standard deviation in Gazifère’s returns from 2010 to 2020 (inclusive) was 0.68 percent. (Gazifère did not provide 2021 data in Exhibit EGI-15.)

The standard deviation in the annual shareholder returns on equity of the U.S. gas sample over the 2010 to 2021 period (as shown in Figure 2, and provided in Response 8.1 to these requests) are:

	Std Dev
Atmos	1.09%
Chesapeake	0.48%
NJR	3.00%
NiSource	3.57%
Northwest	4.46%
ONE	1.11%
SJI	4.73%
Southwest	0.81%
Spire	2.29%

Note: ONE did not become publicly traded in its current form until 2014, and its initial-year returns are an outlier that have been removed from this analysis.

- 3.2.** Please provide references to where in the filed evidence the comparison to which this portion of Q/A9 is referring is to be found.

Réponse :

As Dr. Hopkins cited in Q21, Dr. Brown states that “Other things equal, investors prefer returns that are less volatile” (Exhibit EGI-2, page 8, line 11). As Dr. Hopkins stated in A21, investments that offer lower volatility should have lower costs of capital.

This makes sense because the compound return to an asset is not equal to the arithmetic mean of its annual returns. Instead, the expected value of the compound return is equal to the arithmetic mean minus half of the variance of the returns. (The variance is the square of the standard deviation.) This means that a company with higher variability in returns has to offer a higher annual expected return (from which the volatility drag is subtracted), meaning it has a higher cost of capital.

4. Références : C-ACIG-0028

Q/A 10 “Set the returns on equity and capital structures at the level that corresponds to the business risk faced by a prudently managed utility...”.

Demandes :

- 4.1.** Please explain how a regulator (such as the Régie) can determine whether or not a specific figure for the return on equity and/or capital structure “corresponds” to a particular assessment of business risk.

Réponse :

The regulator can evaluate business risk of other utilities and companies alongside their costs of capital. If the utility in question has less business risk than a comparable company, all else equal, or if the regulator can otherwise adjust for other sources of risk to make a fair comparison, the regulator can evaluate whether a specific figure for return on equity and/or capital structure corresponds to that lower risk (and vice versa for higher risk).

5. Références : C-ACIG-0028

Q/A 10 “Set the returns on equity and capital structures at the level that corresponds to the business risk faced by a prudently managed utility in the same situation as each of the utilities in this proceeding...”.

Demandes :

- 5.1.** Please list the utilities that are in the same situation as each of the Utilities in this proceeding.

Réponse :

By the nature of diversity in economics, climate, policy, regulatory environment, and demographics, every utility is in its own unique circumstance, so in that sense there are no utilities that are in the exact same situation as the Utilities in this proceeding. And yet, if this meant that cross-utility comparison was worthless, then standard approaches to cost of capital analysis, such as those used by Dr. Villadsen (based on assessments of the financial risk assigned by the markets to supposedly comparable gas utilities), would be in question. Dr. Hopkins thinks it is more useful to consider what we can learn from analysis of the risks that would face a prudently managed utility in the Utilities’ situation and use that analysis as input to decisions as to how to adjust generic assessments of the cost of capital (e.g., for regulated utilities, or regulated gas utilities, as a whole) to the specific case of each utility. This “bottom up” approach is what Dr. Hopkins has laid out in his testimony, by breaking down business risks into different types and considering the extent to which the Utilities in this proceeding face them.

- 5.2.** Please specify which of the utilities listed in 5.1 are prudently managed and provide de basis of this opinion.

Réponse :

Please see response to Request 5.1.

- 5.3.** Please identify examples of utilities which, in Dr. Hopkins’ opinion, are not prudently managed. Please also provide the basis of this opinion.

Réponse :

Dr. Hopkins has no specific examples in mind.

6. Références : C-ACIG-0028

Q/A 12 “If circumstances change in the meantime, the investors’ returns may be higher or lower than expected. These business risks are manifested in variations in the rate of return earned by utility shareholders.”.

Demandes :

- 6.1.** Please specify whether “investors’ returns” and “rate of return earned by utility shareholders” refers to an accounting measure of return (such as “achieved return” plotted in Figure 1 of Dr. Hopkins evidence) or to a market measure of return, such as dividends distributed and/or changes in share price over time.

Réponse :

Dr. Hopkins means to refer to the former (an accounting measure of return).

7. Références : C-ACIG-0028

Q/A 17 “In theory, a change in the competitive environment (for example if a competing fuel became much less expensive)...”.

Demandes :

- 7.1.** In Dr. Hopkins’ opinion, is there competition between gas and electricity as a fuel for use in households in the service territories of Énergir and Gazifère?

Réponse :

Yes.

- 7.2.** In Dr. Hopkins’ opinion, is there competition between gas and electricity as a fuel for use in householders in the service territories of the US utilities covered in Figure 2 of Dr. Hopkins’ evidence?

Réponse :

Yes

- 7.3.** Please provide any information available to Dr. Hopkins about the extent to which the competition in a) and b) is similar or different.

Réponse :

Dr. Hopkins did not use any specific information in developing his testimony regarding the differences between competition between gas and electricity in Quebec and in the service territories of the US utilities covered in Figure 2, other than that which is already in the record in this proceeding.

8. Références : C-ACIG-0028

Figure 2 (p.15)

Demandes :

- 8.1. Please provide the numerical data plotted in Figure 2 in spreadsheet format.

Réponse :

Please see attachment.

- 8.2. Please provide a precise definition of “the achieved annual returns on equity for the nine companies in the U.S. gas utility sample”—that is, what data field was downloaded from macro trends, and how does macro trends define that data field?

Réponse :

Macro trends defines ROE on each of the web pages listed below as “Current and historical return on equity (ROE) values for [company name] over the last 10 years. Return on equity can be defined as the amount of net income returned as a percentage of shareholders equity. Return on equity measures a corporation's profitability by revealing how much profit a company generates with the money shareholders have invested.” Each page provides “TTM Net Income” and “Shareholder’s Equity” alongside their ratio, the Return on Equity, on a quarterly basis. (“TTM” stands for “trailing twelve months”).

Links to the pages used:

<https://www.macrotrends.net/stocks/charts/ATO/atmos-energy/roe>

<https://www.macrotrends.net/stocks/charts/CPK/chesapeake-utilities/roe>

<https://www.macrotrends.net/stocks/charts/NJR/newjersey-resources/roe>

<https://www.macrotrends.net/stocks/charts/NI/nisource/roe>

<https://www.macrotrends.net/stocks/charts/NWN/northwest-natural-gas/roe>

<https://www.macrotrends.net/stocks/charts/OGS/one-gas/roe>

<https://www.macrotrends.net/stocks/charts/SJI/south-jersey-industries/roe>

<https://www.macrotrends.net/stocks/charts/SWX/southwest-gas/roe>

<https://www.macrotrends.net/stocks/charts/SR/spire/roe>

8.3. Please provide the authorized equity returns indicated by the shaded area on Figure 2 in table format, specifying the year, utility and jurisdiction to which the authorized return relates. Please also provide a citation to the relevant decision or docket number authorizing the rate of return figure.

Réponse :

This table lists the high and low side of the shaded area and the utility reference for each. Attached are the 10-K forms from which these data were derived.

	High ROE	Reference	Low ROE	Reference
2015	12.0%	Atmos Mississippi-SGR (11/1/14)	9.10%	Atmos Kansas (9/4/14) and Atmos Kansas-GSRS (2/1/15)
2016	12.0%	Atmos Mississippi-SGR (12/3/15)	9.30%	Southwest Gas, northern Nevada (2012-13 rate case)
2017	12.0%	Atmos Mississippi-SGR (1/1/17)	9.30%	Southwest Gas, northern Nevada (2012-13 rate case)
2018	12.0%	Atmos Mississippi-SGR (1/1/18)	9.25%	Southwest Gas, both northern and southern Nevada (12/24/18 order)
2019	11.5%	Atmos Pipeline – Texas (5/7/2019)	9.20%	Atmos Virginia (4/1/19)
2020	11.5%	Atmos Pipeline – Texas (5/20/2020)	9.10%	Atmos Kansas (4/1/20)
2021	11.5%	Atmos Pipeline – Texas (5/11/2021)	9.10%	Atmos Kansas (4/1/20) and Atmos GSRS (2/1/21)

Attachments: Atmos 10-K forms, Southwest Gas 10-K forms

9. Références : C-ACIG-0028

Q/A 31 "...the much greater variability in the U.S. gas sample...".

Demandes :

9.1. Please confirm that the quoted phrase relates to the data plotted in Figure 2.

Réponse :

The quoted phrase refers to the data plotted in Figure 2, compared with the data plotted in Figure 1.

9.2. If not confirmed, please explain to what the quoted phrase relates.

Réponse :

Please see response to Request 9.1.

10. Références : C-ACIG-0028

Q/A 47 “Are the utilities in the U.S. gas sample taking actions of the sort you identified to mitigate the long-term risks they face associated with U.S. federal or state climate policy?”.

Demandes :

10.1. Please list all US natural gas LDCs that have taken planning actions similar to what Dr. Hopkins recommends.

Réponse :

While Dr. Hopkins cannot claim to have a list of “all” natural gas LDCs that have taking actions similar to what he recommends, he can provide some examples of cases he is aware of. These include:

- **Consolidated Edison, which has prepared a long range gas plan¹, and in its current rate case is proposing shorter depreciation lifetimes for its assets, targeting its Main Replacement Program toward areas with longer expected lifetimes, and planning to identify segments of leak-prone pipe that are suitable for retirement or electrification.**
 - **Relevant public policies: New York Climate Leadership and Community Protection Act (CLCPA)**
- **Corning Gas, which proposed depreciating all of its assets by 2050 (although the New York state regulators did not grant its request)**
 - **Relevant public policies: CLCPA**
- **The Massachusetts Local Distribution Companies, which have prepared a report on pathways and policy recommendations to play their part toward achieving net zero emissions in Massachusetts, under regulatory guidance in docket 20-80. See <https://thefutureofgas.com>.**
 - **Relevant policies: Regulatory processes enabled by the Global**

¹ Available at <https://cdnc-dcxprod2-sitecore.azureedge.net/-/media/files/coned/documents/our-energy-future/our-energy-projects/gas-long-range-plan.pdf?rev=f57bdd7f5f9a426791dc86af87a5b46a&hash=ADD3A59C51AA034D9A1458C67A56218E>

Warming Solutions Act, specifically the adoption of a legally binding requirement of net zero emissions by 2050

- **Vermont Gas (part of Énergir), which offers some of its customers the option to lease an electric heat pump water heater (<https://vgsvt.com/savings/heat-pump-water-heaters/>), and also offers a renewable natural gas tariff with gas sourced from “Goodrich Farm in Salisbury, Vermont, a landfill in Quebec, and from a wastewater treatment plant in Iowa” (<https://vgsvt.com/climate/renewable-natural-gas/>)**
 - **Relevant policies: Vermont Global Warming Solutions Act, Vermont Comprehensive Energy Plan**
- **Washington Gas Light (Washington, DC), which developed a Climate Business Plan that lays out pathways designed to reduce emissions in line with the District’s climate and clean energy goals, and has subsequently filed additional plans and proposals in DC Public Service Commission Formal Case 1167.**
 - **Relevant Policies: Clean Energy DC, Carbon Free DC 2050, as well as commitments made in the merger of AltaGas and WGL**
- **NW Natural (Oregon), which has developed models of different pathways to compliance with Oregon’s Climate Protection Plan in Public Utility Commission of Oregon docket UM 2178. See, for example, <https://edocs.puc.state.or.us/efdocs/HAC/um2178hac10454.pdf>.**
 - **Relevant Policies: Climate Protection Plan and Executive Order 20-04**
 - **Regarding Q&A47, Dr. Hopkins wishes to clarify that he was not aware of the Oregon PUC docket UM 2178 and associated utility actions at the time that he wrote his testimony. If he were answering that question today his testimony would say:**

“I am aware of one of the companies in the U.S. gas sample that has begun planning activities for compliance with an ambitious state climate policy. NW Natural, in Oregon, has conducted modeling exercises to examine potential future supply portfolios, rate and bills impacts for customers, and potential regulatory tools, to be consistent with Oregon’s Climate Protection Plan, in Public Utility Commission of Oregon docket UM 2178. I am not aware of other examples from the U.S. gas utility sample, and Dr. Brown’s research and evidence identified no other examples.”

10.2. In each case, please identify any public policies relevant to the design or adoption of the planning actions.

Réponse :

Please see response to Request 10.1.

11. Références : C-ACIG-0028

Q/A 52 "The utility would be examining opportunities to develop new lines of business..."

Demandes :

11.1. Please give examples of specific utilities that have developed specific new lines of business.

Réponse :

Here are a few examples of utilities that have examined, or are in the midst of examining, opportunities to develop new lines of business:

- **National Grid (KEDLI) conducted a pilot of a ground source heat pump system, and concluded that:**
 - **"Traditionally, utility involvement in the GSHP industry has taken the form of incentive programs. Although such programs help minimize the challenge of high upfront costs, National Grid believes more can be done to make this solution more widely available to customers. In particular, more needs to be done to reduce the first cost of these systems, shorten payback periods, increase public awareness, and address supply chain barriers through economies of scale. One promising business model to address the issue of high first costs and long payback period would be for the Company to own and maintain portions of the system, including the underground heat exchanger, the pump house (if required), and any associated equipment. This would be similar to the framework used by utilities for natural gas infrastructure, which allows for the recovery of the underground assets to be spread over the full useful life of those assets, thereby bringing down the upfront cost barrier faced by potential GSHP customers. This approach could complement the work done by the existing GSHP industry by allowing the utility to partner with geothermal drillers and qualified HVAC professionals to install the systems. The Company will continue to explore strategies for eliminating barriers to geothermal adoption, including the business model described above."**
 - <https://documents.dps.ny.gov/public/Common/ViewDoc.aspx?Doc>

[RefId={2511B9E5-F94E-451E-BD27-BB9535BEA596}](#)

- In this case, the costs of the program (budgeted at \$450,000) were recovered as they were incurred, and no assets were placed in rate base.
- Eversource (Eastern Massachusetts) and National Grid (Massachusetts) have received regulatory approval for a pair of networked geothermal demonstration projects.
 - Eversource Geothermal Demonstration Project
 - The cost of the program is estimated at \$10.2 million.
 - The capital portion of the project will be part of the utility's rate base.
 - Order with approval:
<https://fileservice.eea.comacloud.net/FileService.Api/file/FileRoom/12834214>
 - Project website:
<https://www.eversource.com/content/ema-c/business/save-money-energy/clean-energy-options/geothermal-pilot-program>
 - National Grid Geothermal District Energy Demonstration Program
 - The cost of the program is estimated at \$15.6 million over five years. Of this, \$6.4 million is capital, and \$9.2 million are operations and maintenance.
 - The capital portion of the project will be part of the utility's rate base.
 - Order with approval:
<https://fileservice.eea.comacloud.net/FileService.Api/file/FileRoom/14305270>
 - Shifting the gas utility business model to include networked geothermal assets is an explicit option considered by the Massachusetts local distribution companies in the analysis conducted and recommendations they made in MA DPU docket 20-80. The utilities filed a Model Tariff that includes cost recovery for "Networked Geothermal Pilots/Programs." See <https://fileservice.eea.comacloud.net/FileService.Api/file/FileRoom/14633273>.
- Green Mountain Power (GMP, part of Énergir) innovative service pilots and tariffs
 - GMP has had the option to develop and propose innovative

service pilots and tariffs under various alternative regulation plans since at least 2016.

These programs have included utility ownership (and inclusion in rate base) of behind the meter assets and equipment, including heat pumps², heat pump water heaters³, and battery storage systems⁴.

- 11.2. For the examples in part 11.1, please distinguish whether or not the “new line of business” required new assets contributed to the utility’s ratebase; the use of existing assets already in the utility’s ratebase; or did not require either type of asset.

Réponse :

Please see response to Request 11.1.

12. Références : C-ACIG-0028

Q/A 62 “I will now examine how this policy could affect Énergir’s need for storage over the next ten years. (I look over the next ten years because that is the timeframe envisioned for setting Intragaz’s return.)”.

Demandes :

- 12.1. In Dr. Hopkins’ understanding, will Intragaz recover all of its invested capital within the next ten years?

Réponse :

No.

- 12.2. If the answer to 12.1 is no, please explain why capital recovery risks associated with the period after the next ten years are irrelevant for setting the authorized return on equity and the authorized capital structure for the next ten years.

Réponse :

If there were well justified capital risks in other, later, periods, then those could be taken into account even during the immediate period. However, no such risks have been identified and sufficiently justified in this proceeding, in Dr. Hopkins’s opinion.

- 12.3. Please specify what timeframe is relevant, in Dr. Hopkins’ opinion, for the assessment of the business risk (and hence authorized return and capital structure) for Énergir and Gazifère.

² See <https://epuc.vermont.gov/?q=downloadfile/298931/135140>

³ See <https://epuc.vermont.gov/?q=downloadfile/298932/135140>

⁴ See tariff at <https://greenmountainpower.com/wp-content/uploads/2020/06/GMP-Powerwall-Program-Tariff-and-Lease-2020.pdf>

Réponse :

As Dr. Hopkins stated in his testimony, the primary timeframe for the assessment should be the period over which the rate of return is expected to be in effect. (See Q&A18.) If there were well justified capital risks in other, later, periods, then those could be taken into account even during the immediate period. However, no such risks have been sufficiently justified in this proceeding, in his opinion.

- 12.4.** In Dr. Hopkins' understanding, over what period will the Régie's decisions on authorized rate of return and authorized capital structure apply to each of Énergir and Gazifère?

Réponse :

Dr. Hopkins's understanding is that the Régie's decision on authorized rate of return and authorized capital structure will be in effect for the duration that the Régie says they will. In the absence of further statement from the Régie, they could be in effect indefinitely. Based on their response to question 3.1 from the Régie, however, it appears that Énergir and Gazifère favor a period of less than five years, and they cite to Régie precedent for a three-year period. In his testimony, Dr. Hopkins recommended to the Régie that it establish the rates for a limited period (3 to 4 years; see Q&A55) during which time the Utilities would develop plans and return to the Regie with a more comprehensive picture of their business plan and risk over a longer period. At that point, the Régie could determine how to account for any longer-term capital risks when setting the return on equity and capital structure.