



January 24, 2025

**VIA ELECTRONIC FILING**

Brinda Westbrook-Sedgwick  
Commission Secretary  
Public Service Commission  
of the District of Columbia  
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Washington, DC 20005  
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***Re: Formal Case No. 1180, In the Matter of the Application of Washington Gas Light Company for Authority to Increase Existing Rates and Charges for Gas***

Dear Brinda Westbrook-Sedgwick:

Enclosed for filing in the above-referenced proceeding please find the Sierra Club's Exhibit Sierra Club (A), Direct Testimony and Exhibits of Karl R. Rábago.

Should you have any questions, please contact me at [toberleiton@earthjustice.org](mailto:toberleiton@earthjustice.org).

Respectfully submitted,

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Enclosure

cc: Formal Case No. 1180 service list

**BEFORE THE  
PUBLIC SERVICE COMMISSION OF  
THE DISTRICT OF COLUMBIA**

**IN THE MATTER OF THE APPLICATION OF )  
WASHINGTON GAS LIGHT COMPANY FOR )  
AUTHORITY TO INCREASE EXISTING )  
RATES AND CHARGES FOR GAS SERVICE )**

**Formal Case No. 1180**

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**DIRECT TESTIMONY AND EXHIBITS**

**OF**

**KARL R. RÁBAGO**

**Principal, Rábago Energy LLC**

**ON BEHALF OF**

**SIERRA CLUB**

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**Exhibit Sierra Club (A)**

**January 24, 2025**

**Table of Exhibits**

Exhibit Sierra Club (A)-1	Resume of Karl R. Rábago
Exhibit Sierra Club (A)-2	Previous testimony of Karl R. Rábago
Exhibit Sierra Club (A)-3	Rábago Direct Testimony in Maryland PSC Case No. 9704
Exhibit Sierra Club (A)-4	AltaGas Discussion of Climate Related Risks
Exhibit Sierra Club (A)-5	WGL Response to OPC Data Request No. 16-1
Exhibit Sierra Club (A)-6	WGL Response to OPC Data Request Nos. 16-2 & 16-3
Exhibit Sierra Club (A)-7	WGL Response to OPC Data Request No. 16-7
Exhibit Sierra Club (A)-8	WGL Response to OPC Data Request No. 1-2
Exhibit Sierra Club (A)-9	WGL Response to OPC Data Request No. 7-5
Exhibit Sierra Club (A)-10	WGL Response to OPC Data Request No. 1-3
Exhibit Sierra Club (A)-11	WGL Response to OPC Data Request No. 1-4A

**I. INTRODUCTION & WITNESS QUALIFICATIONS**

**Q. Please state your name, business name and address, and role in this matter.**

A. My name is Karl R. Rábago. I am the principal of Rábago Energy LLC, a Colorado limited liability company, located at 1350 Gaylord Street, Denver, Colorado. I appear here in my capacity as an expert witness on behalf of the Sierra Club.

**Q. Please summarize your experience and expertise in the field of utility regulation.**

A. I have worked for more than 34 years in the utility industry and related fields. I am actively involved in a wide range of utility regulatory and ratemaking issues across the United States, following my honorable discharge from the United States Army, where I served as an armored cavalry officer and judge advocate. My previous utility-related employment experience includes Commissioner with the Public Utility Commission of Texas, Deputy Assistant Secretary with the U.S. Department of Energy, Vice President with Austin Energy, Executive Director of the Pace Energy and Climate Center, Managing Director with the Rocky Mountain Institute, and Director with AES Corporation, among others. My resume is attached as Exhibit Sierra Club (A)-1.

**Q. Do you have any specific experience relating to ratemaking and rate design?**

A. Yes. As a public utility commissioner for the Public Utility Commission of Texas (“Texas PUC”), I reviewed and made decisions about hundreds of rate applications by investor-owned, cooperative, and publicly owned utilities. As a utility sector executive, I have led or advised on the design of rates of many types and have proposed and overseen application of rates for a variety of utility services. For example, when serving as the vice president for distributed energy services at Austin Energy, I ensured that our energy efficiency and weatherization programs were closely coordinated with similar programs

1 administered by the local gas and water utilities. As a law professor, I have taught the  
2 principles of utility ratemaking to students. As an expert witness, I have reviewed and  
3 testified in regulatory commission proceedings across the country on the merits of scores  
4 of rate proposals from investor-owned, cooperative, and publicly owned utilities. I have  
5 written and published articles on rate design and utility regulation, as reflected in Exhibit  
6 Sierra Club (A)-1.

7 **Q. Please expand on your experience as it relates to your testimony in this proceeding.**

8 A. While most of my regulatory work relates to electric service utilities, I have participated  
9 as an expert witness in several gas utility cases over the past several years. These  
10 proceedings include gas utility rate cases and other matters in New York, Wisconsin,  
11 Ohio, Illinois, Maryland, and New Orleans. My testimony in Maryland was in 2023, in  
12 Washington Gas Light Company's ("WGL" or "Company") general rate case, styled as  
13 Maryland Public Service Commission Formal Case No. 9704. I have written and  
14 sponsored testimony on utility fixed customer charges, as proposed in this case, in dozens  
15 of proceedings. As executive director of the Pace Energy and Climate Center, I led rate  
16 case interventions in electric and gas utility cases and collaborated with advocates across  
17 the U.S. on rate making issues. I have written, spoken publicly, and worked with groups  
18 focused on energy justice and access to clean energy resources for thirty years, with a  
19 focus on utility sector transformation and, more recently, distributed energy resources,  
20 decarbonization, and electrification. Other relevant aspects of my experience can be  
21 found in Exhibit Sierra Club (A)-1.

1 **Q. Have you ever testified before the Public Service Commission of the District of**  
2 **Columbia (“Commission”) or other regulatory agencies?**

3 A. Yes. I participated in Formal Case Nos. 1103 and 1144 as an expert witness. In the past  
4 twelve years, I have submitted testimony, comments, or presentations in utility  
5 proceedings in Alabama, Arizona, Arkansas, California, Colorado, Connecticut, District  
6 of Columbia, Florida, Georgia, Guam, Hawaii, Illinois, Indiana, Iowa, Kansas, Kentucky,  
7 Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi,  
8 Missouri, Montana, Nebraska, Nevada, New Hampshire, New Mexico, New York, North  
9 Carolina, Ohio, Pennsylvania, Puerto Rico, Rhode Island, Texas, Vermont, Virginia,  
10 Washington, and Wisconsin. I have also testified before the U.S. Congress and have been  
11 a participant in comments and briefs filed at several federal agencies and courts. A listing  
12 of my previous testimony is attached as Exhibit Sierra Club (A)-2.

13 **II. OVERVIEW OF TESTIMONY AND RECOMMENDATIONS**

14 **Q. Please provide an overview of your testimony in this proceeding.**

15 A. My focus in this testimony is on the rates and spending proposed by Washington Gas  
16 Light Company (“WGL” or “Company”) as they relate to affordability and use of fossil  
17 methane gas, and on the resulting impacts on climate change and achievement of the  
18 District of Columbia’s climate and clean energy laws and policies. I also provide  
19 testimony on the climate goals and performance of WGL and its holding company owner,  
20 AltaGas, a Canadian corporation.

21 Although it repeatedly argues that use of a historical test year in this application  
22 constrains the Commission’s consideration of forward-looking issues, WGL does not  
23 simply approach this case as a utility seeking approval of its historical cost of service. My

1 testimony lays out the ways that WGL is pursuing a broad and overlapping effort to grow  
2 its sales and spending and resulting revenues and to increase its certainty of recovery of a  
3 growing revenue requirement. WGL proposes this growth in spending and accompanying  
4 increases in rates rather than confront the systemic reductions in sales and customer  
5 counts that the gas industry is experiencing—all the while largely ignoring very real  
6 climate risks and failing to align its business strategies with climate and clean energy  
7 policies, particularly here in the District. These trends, and their financial and economic  
8 consequences, will become more impactful and significant as the District's leaders and  
9 residents continue the prudent course of transitioning away from using climate-polluting  
10 fossil fuels. Instead of confronting the transition with a productive, just, and proactive  
11 strategy, WGL's proposals in this application seek to: (1) move toward straight fixed  
12 variable rate design, increase the share of its revenues that grow with spending and that  
13 are immune to reductions in gas use, (2) unreasonably inflate its return on equity and the  
14 equity ratio, despite sound financials and limited risk (except to the extent that WGL's  
15 credit ratings are weighed down by the risky midstream gas business activities of its  
16 owner, AltaGas), (3) weaken the economic benefits customers can realize from  
17 electrification, (4) weaken price signals and the customer economics associated with  
18 electrification and reduced use of gas, and (5) increase spending on strandable gas system  
19 infrastructure while assigning the risk of stranded investments to customers, instead of  
20 WGL's shareholders. In the face of all these forward-looking efforts to tilt the financial  
21 tables in its favor, WGL argues that the use of a historical test year requires a piece-meal  
22 rate making approach that insulates WGL from scrutiny over the impacts of its forward-  
23 looking initiatives and from any examination in rate cases of the very real consequences

1 of its existentially fraught business model of burning more fossil fuels, without due  
2 regard for climate or affordability consequences.

3 My testimony explains why the Company's rate design, spending, and other  
4 proposals in this proceeding should be rejected by the Commission. Based on my  
5 informed judgment and reasonable expectations for the future, I conclude that to  
6 demonstrate meaningful compliance with the District's climate and clean energy policies,  
7 WGL must take a more serious and expeditious approach to business planning and asset  
8 management that incorporates managed decapitalization of the fossil gas delivery system,  
9 including ratable decommissioning of strandable assets.

10 **Q. What do you mean by the term "strandable assets?"**

11 A. I use the term "strandable assets" to broadly describe capital investments that could  
12 become no longer used and useful in the provision of utility services at a point in the  
13 future sooner than that when the associated investments would otherwise be fully  
14 returned to investors. In simple terms, assets are strandable if they become, in whole or  
15 part, unused before the accumulated realized depreciation expense equals the investment  
16 cost.

17 **Q. If informed judgment and reasonable expectations lead one to this conclusion,**  
18 **should the Commission allow WGL to address these issues on its own timeline?**

19 A. In my opinion and based on WGL's and AltaGas' own words, WGL has made it clear that  
20 it will not take affirmative action to positively address the challenges it faces, as long as it  
21 can get away with rate design tricks, excessive infrastructure spending, and an insincere  
22 approach to climate responsibility. Because continued inaction, load-building, and  
23 excessive rate base growth create too much risk for WGL's customers and for successful



1 achievement of the District’s climate goals, the Commission cannot wait until financial  
2 and operational distress forces WGL to act. For this reason, I find that WGL needs clear  
3 and express Commission direction to develop—with the support of the Commission,  
4 Staff, and stakeholders—a specific, actionable, and measurable plan for eliminating  
5 greenhouse gas (“GHG”) emissions related to its operations, including the use of fossil  
6 methane gas by its current customers. And even though the Commission has initiated  
7 separate proceedings to address efficiency and GHG reduction issues, it is in rate cases  
8 like this one that the checks are written, and very real burdens are imposed on customers.  
9 WGL’s failure to proactively and positively address, in this case and future rate  
10 proceedings, as well as in related proceedings, the very real economic and financial risks  
11 for itself and its current and potentially stranded future customers—risks that stem from a  
12 climate pollution business model—is economically and financially imprudent.

13 I therefore recommend that the Commission disapprove of rate proposals in this  
14 case that conflict with or frustrate the District’s mandated transition away from reliance  
15 on fossil methane gas, that increase or perpetuate customer use of fossil methane gas, or  
16 that require customers to pay for gas distribution system investments and programs that  
17 unnecessarily continue or increase the potential for strandable costs.

18 **Q. Please describe the organization of your direct testimony.**

19 A. **Section I** provides information about my background, expertise, and qualifications as an  
20 expert witness in this matter.

21 **Section II** provides an overview of my testimony and recommendations.

22 **Section III** provides a summary of relevant authorities and policy relating to this  
23 testimony.

1       **Section IV** reviews WGL's and AltaGas' positions and performance on climate  
2       responsibility.

3       **Section V** reviews WGL's performance in reducing GHG emissions under its climate  
4       business and action plans.

5       **Section VI** reviews how WGL proposals in this rate case would increase gas use and  
6       GHG emissions.

7       **Section VII** addresses WGL's proposal to transfer \$11.7 million in Accelerated Pipe  
8       Replacement spending to base rates.

9       **Section VIII** provides my recommendations for Commission action on the Company's  
10      rate proposals and for direction that the Commission should provide to WGL.

11   **III.   RELEVANT AUTHORITY AND POLICY REVIEWED FOR THIS TESTIMONY**

12   **Q.   What materials did you review in preparing this testimony?**

13   A.   I reviewed relevant portions of the Company's application, testimony, schedules, and  
14       responses to data requests from various parties. I also reviewed relevant statutory and  
15       regulatory authorities and policy statements, plans, and other documents, as well as  
16       previous filings with and orders of the Commission. I have reviewed learned treatises and  
17       other authoritative materials on ratemaking, some of my previous testimony, and  
18       testimony in other cases. Where I rely upon specific sources, I cite them in footnotes and  
19       provide links to web sites and associated documents.

20   **1. The District's Regulatory, Climate, and Clean Energy Laws and Policies**

21   **Q.   Please summarize the Commission's regulatory authority.**

22   A.   The Commission has been granted a wide range of regulatory responsibilities and  
23       powers. Among these, the Commission has the power to set utility rates that are just and

1 reasonable,<sup>1</sup> and has an obligation to keep informed of the business conduct of utilities  
2 that it regulates.<sup>2</sup> In regulating gas utilities, the Commission has been granted general  
3 supervisory powers over the infrastructure that is used to provide service,<sup>3</sup> and to  
4 examine or investigate the methods employed by the utility, and has the authority to order  
5 the utility to engage in activities, as necessary, to promote the public interest, preserve the  
6 public health, and protect utility customers.<sup>4</sup> In supervising and regulating utility  
7 companies, the Commission must “consider the public safety, the economy of the  
8 District, the conservation of natural resources, and the preservation of environmental  
9 quality, including the effects on global climate change and the District’s public climate  
10 commitments.”<sup>5</sup> The Code of the District of Columbia provides that the provisions of the  
11 Public Utility Code<sup>6</sup> shall be interpreted and construed liberally in order to accomplish  
12 the purposes of the Code,<sup>7</sup> and that the Commission enjoys, in addition to enumerated  
13 powers, all additional, implied, and incidental power as proper and necessary to exercise  
14 its enumerated powers.<sup>8</sup> The Code of the District of Columbia also provides that if a  
15 public utility like WGL proposes an action that is likely to have a significant effect on the  
16 quality of the environment, the utility must prepare a detailed environmental impact  
17 statement to the Commission.<sup>9</sup>

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<sup>1</sup> D.C. Code §34-911.

<sup>2</sup> D.C. Code §34-903.

<sup>3</sup> D.C. Code §34-301(1).

<sup>4</sup> D.C. Code §34-301(2).

<sup>5</sup> D.C. Code §34-808.02.

<sup>6</sup> D.C. Code Title 34.

<sup>7</sup> D.C. Code §34-403.

<sup>8</sup> Id.

<sup>9</sup> D.C. Code Ch. 26.

1 **Q. What climate- and clean energy-specific laws are relevant to the Commission's**  
2 **evaluation of WGL's proposed rates and operations?**

3 A. The District's climate and clean energy laws include the following provisions, which the  
4 Commission has recognized as applying to WGL's Climate Solutions and Climate  
5 Business Plans.<sup>10</sup>

- 6 • The Climate Commitment Amendment Act of 2022:<sup>11</sup>
  - 7 ○ Requires a 45% GHG reduction by 2025; 60% GHG reduction by 2030; 70%  
8 GHG reduction by 2035; 85% GHG reduction by 2040; and carbon neutrality by  
9 2045.
  - 10 ○ "Beginning Jan 1, 2025, the District government shall not install, in District-  
11 owned buildings, space- or water-heating appliances that rely on the combustion  
12 of natural gas, oil, or other fossil fuels at the site of the appliance, except in cases  
13 where compliance with this paragraph would be technically infeasible."
  - 14 ○ "Beginning Jan 1, 2026, the District government shall purchase or lease only  
15 zero-emissions vehicles, except in cases where there is no such vehicle readily  
16 available on the market."
- 17 • The Greener Government Buildings Amendment Act of 2022<sup>12</sup> requires that  
18 construction of new or substantially improved buildings that the District government  
19 owns or finances in significant part adhere to net-zero energy standards and not  
20 incorporate fossil fuel consumption; gives net-zero energy ready, fossil fuel-free  
21 buildings priority consideration for the District government's facility needs; requires  
22 the Department of General Services to host net zero energy construction and  
23 maintenance trainings every two years for facilities staff, certified business  
24 enterprises, and interested parties; and requires the Department of General Services to  
25 report every two years on certified business enterprise and resident employee  
26 participation in net-zero energy and energy retrofitting projects.
- 27 • The Clean Energy DC Building Code Amendment Act of 2022<sup>13</sup> establishes standards  
28 for new buildings and major renovations to be built to net-zero standards starting after  
29 2026; prohibits fossil fuels in new construction, except as backup generation sources  
30 in buildings that are essential to public health and safety; and sets a minimum

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<sup>10</sup> Formal Case No. 1167, *In the Matter of the Implementation of Electric and Natural Gas Climate Change Proposals* ("Formal Case No. 1167") Order No. 22313 at ¶ 15, rel. Oct. 10, 2024.

<sup>11</sup> D. C. Code § 8–151.09(d).

<sup>12</sup> D.C. Code §6-1451.02(a). D.C. Law 24-306, eff. Mar. 10, 2023.

<sup>13</sup> D.C. Code § 6–1453.01. D.C. Law 4-177, effective September 21, 2022.

percentage of total building energy consumption that is to be met by on-site renewable generation, as required by Appendix Z to the District of Columbia's Energy Conservation Code.

- The Local Solar Expansion Amendment Act of 2022<sup>14</sup> increases the renewable portfolio standard ("RPS") from 10% to 15% by 2041 for solar projects eligible for the Solar Renewable Energy Certificate ("SREC") carve-out component of the District's RPS program.
- The Healthy Homes and Residential Electrification Act of 2024<sup>15</sup> ("Healthy Homes Act") requires the District Department of Energy and Environment ("DOEE") to provide no-cost residential electrification retrofits to 30,000 low-income households by December 31, 2040, and authorizes moderate-income household retrofits on a sliding scale.

**Q. How would you summarize the policy trajectory established in the Commission's enabling authorities and in the laws relating to a transition away from reliance on fossil fuels for energy services?**

A. In my experience and judgment, I recognize the District's approach to the transition as reasonable and supported by successful similar efforts in other jurisdictions. The climate policy-related laws use clear objectives, timelines, and requirements, as well as a phased approach to ensuring a just and sustainable transition. The specific statutory language will be supported and implemented through complementary planning efforts, like DOEE's work on the Clean Energy DC 2.0 plan.<sup>16</sup> DOEE is currently in the process of developing the Clean Energy DC 2.0 plan,<sup>17</sup> with its current draft policies available for review and comment.<sup>18</sup> Under the Commission's guiding laws, the District's climate laws and policies are fundamental elements of the public interest. It is entirely appropriate then,

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<sup>14</sup> D.C. Code § 34-1432(c).

<sup>15</sup> Law No. 25-0189 (June 19, 2024).

<sup>16</sup> DC DOEE, *Clean Energy DC 2.0 Plan*, available at <https://clean-energy-dc-dcgis.hub.arcgis.com>

<sup>17</sup> Id.

<sup>18</sup> DC DOEE, *Get Involved: Draft [CEDC 2.0] Policy Roadmap for Review* (Nov. 2023), available at <https://clean-energy-dc-dcgis.hub.arcgis.com/pages/get-involved>

1 that in addition to these laws, the Commission stated that it will look to District  
2 Government policies and policy implementation as authority, having determined that “the  
3 Clean Energy DC Plan is the District Government’s roadmap for achieving the District’s  
4 climate goals, and that to the extent that the Clean Energy DC does not conflict with the  
5 Commission’s statutory mandates, the Commission can be guided by Clean Energy DC in  
6 its review of utility proposals.”<sup>19</sup>

7 **IV. RELEVANT AUTHORITY AND POLICY REVIEWED FOR THIS TESTIMONY**

8 **2. WGL’s Position regarding the District’s Climate and Energy Policies**

9 **Q. Has WGL recognized the importance of these District climate and energy policies,**  
10 **and reflected these policies in its proposed programs, spending, and rates?**

11 A. Not adequately. Through its senior vice president for regulatory matters, Mr. James D.  
12 Steffes, WGL indicates that it is not proposing any new programs or spending for  
13 approval relating to the District’s climate goals,<sup>20</sup> offering instead its “commitment to  
14 deliver energy safely, reliably, and affordably in an ever more sustainable way.”<sup>21</sup> Mr.  
15 Steffes also stated that it is filing four new programs in Formal Case No. 1167 relating to  
16 administrative and record-keeping matters, which “*may* help achieve emissions  
17 mitigation and reductions over time.”<sup>22</sup> These programs would *study* lower-carbon  
18 technologies and solutions, *adopt a procedural framework* for interconnection of

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<sup>19</sup> *Formal Case No. 1167*, Order No. 20754, at ¶ 44 rel. Jun. 4, 2021 (citation omitted)

<sup>20</sup> WG(A) (Steffes) at 18:15-21.

<sup>21</sup> *Id.* at 19:1-2. WGL proposed a “Climate Action Recovery Tariff” (“CART”) in Formal Case No. 1169, which the Commission rejected because the Commission had not approved the projects as being consistent with the District’s climate commitments. See *Formal Case No. 1169, In the Matter of the Application of Washington Gas Light Company for Authority to Increase Existing Rates and Charges for Natural Gas Service* (“*Formal Case No. 1169*”), Order No. 21939 at ¶ 430, rel. Dec. 22, 2023.

<sup>22</sup> WG(A) (Steffes) at 20:12-17, and table at 21 (emphasis added).

1 biomethane production to the gas distribution system, secure approval for *procurement of*  
2 *carbon credits to offset Scope 3 combustion emissions, and enhance emissions reporting*  
3 *and transparency*.<sup>23</sup>

4 **Q. Does WGL provide any evidence linking its proposed return on equity, incentive**  
5 **compensation, or rate designs to climate goals or performance based on District**  
6 **laws and policies or other drivers?**

7 A. No.

8 **Q. How has WGL responded to requests by parties in this proceeding to provide**  
9 **information about how it is accounting for District climate laws and policies in its**  
10 **operations and rate proposals?**

11 A. WGL objected to providing supplemental testimony on several issues, including whether  
12 WGL's capital investments will continue to be used and useful in light of the District's  
13 electrification initiatives and how WGL incorporates District climate, equity, and other  
14 policies into its capital planning and selection processes.<sup>24</sup> WGL has similarly objected to  
15 providing testimony on WGL's evaluation of customers' costs for alternatives to the  
16 continued use of natural gas for specific end uses, WGL's evaluation of affordability of  
17 natural gas service for its District customers, and the impact of DC climate policies on the  
18 economics of WGL's planned capital investments, expected lives for distribution assets,  
19 and depreciation rates for ratemaking purposes.<sup>25</sup> WGL argued that such information was  
20 beyond the scope of this rate case, that the requests sought to improperly tie a rate

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<sup>23</sup> WG(A) (Steffes) at 21, Table (emphases added).

<sup>24</sup> *Formal Case No. 1180*, Order No. 22311 at ¶ 6, rel. Oct. 9, 2024.

<sup>25</sup> *Id.* at ¶ 7.

1 decision to the District's electrification efforts, and that a rate case should determine  
2 whether plant on the books in the historical test year is used and useful at that former  
3 time and not at some future time,<sup>26</sup> arguing that the information is outside of a rate case  
4 proceeding based on costs in the historical test year.<sup>27</sup> WGL further argued that its  
5 application in this case provides the information the Commission needs in order to  
6 determine whether WGL is helping the District meet its decarbonization goals, and that  
7 since electrification is a policy and not law in the District, the Commission has no  
8 obligation to consider the prudence of costs in a rate case that is based on a policy.<sup>28</sup>

9 **Q. How did the Commission respond to these objections and arguments?**

10 A. The Commission rejected WGL's objections and arguments, finding the requested  
11 information is relevant and beneficial to completing the record upon which the decisions  
12 in this case must be made.<sup>29</sup>

13 **Q. How do you view this decision?**

14 A. Based on my 34-plus years of work in the utility regulatory space, I believe the  
15 Commission's approach accords with sound rate making. Financial and economic outlook  
16 issues, and policies that impact them, are germane to a historical test-based rate case  
17 conducted under cost of service rate making principles. It is pure and self-serving fiction  
18 for WGL to argue that reliance on a historical test year as the starting point and frame of  
19 reference for the cost of service somehow bars consideration of future issues impacting  
20 the financial health of a utility and whether long-lived assets will continue to be used and

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<sup>26</sup> *Id.* at ¶ 8.

<sup>27</sup> *Id.* at ¶ 9.

<sup>28</sup> *Id.* at ¶ 8.

<sup>29</sup> *Id.* at ¶ 10.



1 useful in the provision of utility services in the years beyond the effective rate year. At the  
2 very least, such considerations impact depreciation schedules. This relevance is  
3 especially great when considering how the public interest would be impacted when the  
4 District's default gas provider and distribution system manager faces continued demand  
5 destruction and potential financial impairment—unless it undertakes transformative  
6 change—under electrification, building code changes, and other climate-responsible  
7 policies. The District's climate goals, building codes, healthy homes initiatives, and  
8 electrification policies impact the very core of WGL's current business of providing  
9 thermal energy services in homes and other buildings. Informed judgment and reasonable  
10 expectations of the future of this business in the District must inform and guide  
11 investment planning and decisions reflected in rates—the stuff of the next and subsequent  
12 test years and of future earnings performance. The setting of a return on equity is  
13 inherently a forward-looking exercise, as is the determination of a revenue requirement  
14 and forecasts of sales that support just and reasonable rates. Indeed, after the  
15 classification and allocation of historical test year costs, with known and measurable  
16 adjustments, is completed, rate making is almost entirely forward-looking. WGL's  
17 position, when carried to its logical conclusion, is a recipe for administrative inefficiency,  
18 piece-meal rate making, and frustration of the District's vital climate and electrification  
19 policies. It is also a recipe for a death spiral of rate making, in which WGL continues to  
20 overspend and overinvest despite policy and demand trends, returning again and again to  
21 bemoan its poor performance in earning its allowed rates of return. WGL seeks to engage  
22 the Commission in a game of climate “chicken,” driving headlong into the future with all

1 eyes fixed firmly on the rearview mirror. That is a recipe for a terrible accident and the  
2 very definition of imprudence.

3 **Q. Did WGL’s supplemental testimony explain how it incorporates the District’s**  
4 **climate, equity, and other policies into its planning and selection of capital projects?**

5 A. In his supplemental testimony on how WGL incorporates the District’s climate, equity,  
6 and other public policies into its planning and selection of capital projects, Company  
7 witness Steffes stated that WGL follows existing laws, and that its initiatives to replace  
8 existing “leak-prone” pipe with new pipes will “*over time*” result in lowering GHG  
9 emissions,<sup>30</sup> while repeating WGL’s rejected assertion that this rate proceeding is  
10 backward-looking based on a historical test year and is not the “appropriate opportunity”  
11 to address the District’s climate goals.<sup>31</sup>

12 **Q. How did WGL speak to the evaluation of alternatives to continued use of gas for end**  
13 **uses?**

14 A. On the issue of how WGL evaluates the costs of alternatives to the continued use of gas  
15 for specific end uses, WGL witness Steffes stated that WGL is “not aware that the  
16 Commission has approved or directed the Company to evaluate [such costs],” and that  
17 WGL has not undertaken detailed appliance and specific end-use alternatives  
18 evaluations.<sup>32</sup> This response implies continued inaction in the absence of specific  
19 Commission direction.  
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<sup>30</sup> WG(2A) (Steffes) at 4:16-24 (emphasis added).

<sup>31</sup> *Id.* at 5:13-15.

<sup>32</sup> *Id.* at 6:1-7.

1   **Q.     How does WGL describe the impact of the District’s climate policies on the**  
2       **Company’s planned capital investments?**

3   A.     WGL witness Steffes asserts that there is no impact on WGL’s planned capital  
4       investments based on the District’s climate policies because WGL has an obligation to  
5       safely and reliably serve its customers, and that service requires continued investment in  
6       the gas distribution system.<sup>33</sup> WGL blatantly states that it “is unaware of any District  
7       climate policy that has an impact on the Company’s planned capital investments,  
8       expected life [of] assets, or depreciation rates,”<sup>34</sup> and refuses to state the basis for the  
9       assertion that District climate policies have no impact on these aspects of its operations  
10      and investments.<sup>35</sup> WGL’s lack of awareness of such impacts appears to be based on  
11      intentional ignorance and lack of analysis. For example, though the consultant that WGL  
12      hired to perform a depreciation study states that he did recognize that “informed  
13      judgment and expectations about the future,” in light of District climate policies, would  
14      impact his judgments about the expected lives of distribution assets, WGL directed him  
15      that “far more extensive planning, engineering and economic studies will be needed  
16      before the Company can speculate how the District’s climate policies would (or could)  
17      impact distribution assets.”<sup>36</sup>

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<sup>33</sup> *Id.* at 6:12-19.

<sup>34</sup> WGL Response to OPC Data Request No. 16-1 (Exhibit Sierra Club (A)-5)

<sup>35</sup> WGL Response to OPC Data Request Nos. 16-2 & 16-3 (Exhibit Sierra Club (A)-6)

<sup>36</sup> WGL Response to OPC Data Request No. 16-7 (Exhibit Sierra Club (A)-7).

1    **IV.    WGL AND ALTAGAS POSITIONS ON CLIMATE RESPONSIBILITY**

2    **Q.    What does AltaGas say about the climate-related risks that it faces?**

3    A.    AltaGas recognizes that it may be subject to reasonably foreseeable physical and  
4        transition risks related to climate change, as noted in its 2023 Annual Information Form  
5        issued on March 7, 2024.<sup>37</sup> AltaGas reports that its assets, supply chains, and operations  
6        are exposed to the risks of acute climate-related physical hazards, extreme weather,  
7        operational difficulties, and hazards to employees and contractors. Long-term climate-  
8        related physical impacts resulting from a changing climate “may have a material adverse  
9        effect on the business of the Company, its reputation, financial condition, results of  
10       operations[,] and cash flows.”<sup>38</sup> In addition to financial, operational, and asset impacts  
11       relating to the physical risks of climate change, AltaGas reports that it is also exposed to  
12       climate-related policy, market, technology, reputational, and legal risks associated with  
13       the global transition to a lower carbon economy.<sup>39</sup> This risk assessment is quite  
14       comprehensive and stands in stark contrast to the absence of any meaningful analysis of  
15       these risks in this application and its proposals. AltaGas’ discussion of Climate-Related  
16       Risks is contained in Exhibit Sierra Club (A)-4.

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<sup>37</sup> AltaGas, *Annual Information Form, for the Year Ended December 31, 2023* (Mar. 7, 2024) (“AltaGas 2023 Annual Information Form”) at 59, available at [https://www.altagas.ca/sites/default/files/2024-03/AltaGas-Ltd\\_AIF\\_2023.pdf](https://www.altagas.ca/sites/default/files/2024-03/AltaGas-Ltd_AIF_2023.pdf)

<sup>38</sup> *Id.*

<sup>39</sup> *Id.* at 59-61.

1 **Q. How does WGL describe its approach to action that is consistent with emerging**  
2 **public policy related to carbon reduction and support for customers?**

3 A. WGL witness Steffes says that one of AltaGas' 2023 Utilities Value Drivers is "Emerging  
4 Ecosystems," which focuses on "developing action plans for near-term integrated  
5 strategies that are consistent with emerging public policy related to carbon reduction."<sup>40</sup>  
6 AltaGas and WGL use the Utilities Value Drivers and an associated scorecard as the  
7 foundation for their short-term incentive compensation plan.<sup>41</sup>

8 **Q. Are WGL employees potentially motivated by any other value drivers?**

9 A. Yes. Mr. Steffes states that the Company's Corporate Social Responsibility utilities value  
10 focuses on WGL's Environmental, Social, and Governance ("ESG") initiatives, which  
11 encompass "safety and environmental, diversity and inclusion, corporate compliance,  
12 community investment[,], and cyber/IT activities."<sup>42</sup>

13 **Q. What are AltaGas' and WGL's ESG goals relating to GHG emissions?**

14 A. No WGL witnesses referenced GHG emissions reductions goals in this proceeding.  
15 According to AltaGas' 2022 ESG Update Report,<sup>43</sup> AltaGas utilities have two emissions-  
16 related goals: (1) the reduction of Scope 1 and 2 emissions against a 2008 baseline,<sup>44</sup> and

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<sup>40</sup> WG(A) (Steffes) at 16-17.

<sup>41</sup> WG(A) (Steffes) Ex. WG (A)-1. *See also* AltaGas, *Management Information Circular: Notice of Annual General Meeting of Shareholders to be held May 2, 2024* (Mar. 7, 2024) at 65, et seq., available at [https://www.altagas.ca/sites/default/files/inline-files/AltaGas-Ltd\\_Proxy%20Circular%202024.pdf](https://www.altagas.ca/sites/default/files/inline-files/AltaGas-Ltd_Proxy%20Circular%202024.pdf)

<sup>42</sup> WG(A) (Steffes) at 16.

<sup>43</sup> AltaGas, *2022 ESG Update Reporting 2021 Performance* ("AltaGas 2022 ESG Update"), at 4, available at [https://www.altagas.ca/sites/default/files/2022-12/ALA\\_2022\\_ESG\\_UPDATE\\_0.pdf](https://www.altagas.ca/sites/default/files/2022-12/ALA_2022_ESG_UPDATE_0.pdf)

<sup>44</sup> AltaGas 2022 ESG Update at 9. Scope 1 emissions are direct greenhouse (GHG) emissions that occur from sources that are controlled or owned by an organization (e.g., emissions associated with fuel combustion in boilers, furnaces, vehicles). Scope 2 emissions are indirect GHG emissions associated with the purchase of electricity, steam, heat, or cooling. Although scope 2 emissions physically occur at the facility where they are generated, they are accounted for in an organization's GHG inventory because they are a result of the organization's energy use. EPA Center for Corporate Climate Leadership, *Scope 1 and*

1 (2) the delivery of at least 10% of fuel from lower-carbon sources by 2030.<sup>45</sup> WGL's  
2 Scope 1 and 2 emissions represent 80% of AltaGas' 2021 Scope 1 and 2 emissions.<sup>46</sup> The  
3 AltaGas 2022 ESG Update is somewhat unclear, referencing all utilities (WGL, SEMCO,  
4 and ENSTAR) in some contexts and only "Washington Gas" in others.

5 **Q. Is a more recent AltaGas ESG Update available for 2023?**

6 A. AltaGas announced the release of its 2023 ESG Report on Dec. 5, 2023, in conjunction  
7 with the release of its 2024 shareholder guidance,<sup>47</sup> but the link to the 2023 ESG Report  
8 has been deactivated.<sup>48</sup> In the letter from AltaGas President and Chief Executive Officer  
9 Vern Yu, which accompanied the shareholder guidance and 2023 ESG Report release, Mr.  
10 Yu states:<sup>49</sup>

11 Our Utilities have a bright future with natural gas remaining the largest home  
12 energy source across all our jurisdictions where, on average, electrical substitution  
13 costs are more than three times the cost of natural gas on a delivered basis. We  
14 have visible and low-risk growth opportunities through new customer additions,  
15 system expansion, and modernization opportunities. AltaGas will continue to act  
16 in our customers best interests during this period of higher inflation and interest  
17 rates, balancing the critical needs of energy affordability and reliability with rate  
18 increases and regional climate goals.  
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*Scope 2 Inventory Guidance*, U.S. Environmental Protection Agency, available at  
<https://www.epa.gov/climateleadership/scope-1-and-scope-2-inventory-guidance>

<sup>45</sup> AltaGas 2022 ESG Update at 9.

<sup>46</sup> *Id.*

<sup>47</sup> AltaGas, AltaGas Announces 2024 Guidance and Strategic Priorities, Six Percent Dividend Increase, and Releases 2023 ESG Report ("AltaGas 2024 Guidance") (Dec. 5, 2023), available at  
<https://www.altagas.ca/newsroom/news-releases/altagas-announces-2024-guidance-and-strategic-priorities-six-percent>

<sup>48</sup> The deactivated web page for the 2023 ESG Report is at:  
[https://www.altagas.ca/sites/default/files/2023-12/AltaGas\\_2023%20ESG%20Report.pdf](https://www.altagas.ca/sites/default/files/2023-12/AltaGas_2023%20ESG%20Report.pdf)

<sup>49</sup> AltaGas 2024 Guidance, at CEO Message.

1   **Q.    Is the Alta Gas 2023 ESG Report available anywhere else?**

2    A.    I was unable to find a report with this title online. However, a document titled “2023  
3       Sustainability Update” is available on the internet.<sup>50</sup> The 2023 Sustainability Update is  
4       useless in evaluating the progress of AltaGas utilities in achieving emissions reductions  
5       and increasing deliveries of low-carbon fuels because it provides only 2023 values for  
6       emissions and is devoid of explanations as to which utilities are covered, the stated goals,  
7       or any references to lower-carbon fuels.

8   **Q.    Has AltaGas released a 2024 ESG Update Report?**

9    A.    No. Although AltaGas released shareholder guidance for 2025 in December 2024, along  
10       with announcing another six percent dividend increase for its shareholders and continued  
11       progress on strategic priorities, the guidance does not mention climate, carbon,  
12       sustainability, ESG, or anything related to GHG emissions or lower-carbon fuels.<sup>51</sup> On  
13       the AltaGas webpage titled “Responsibility,” AltaGas states that recent changes to the  
14       Canadian Competition Act “create significant uncertainty about how businesses can  
15       communicate publicly with respect to the environment,” and that while AltaGas asserts it  
16       “remains fully committed to environmental performance, sustainable development, and  
17       the work [it is] doing to reduce greenhouse gas emissions,” it has removed environmental

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<sup>50</sup> AltaGas, *2023 Sustainability Update* (2023), available at [https://www.altagas.ca/sites/default/files/2024-09/AltaGas%202023%20Sustainability%20Update%20Final\\_0.pdf](https://www.altagas.ca/sites/default/files/2024-09/AltaGas%202023%20Sustainability%20Update%20Final_0.pdf)

<sup>51</sup> AltaGas, *AltaGas Announces 2025 Guidance, Six Percent Dividend Increase, and Continued Progress on Strategic Priorities* (Dec. 3, 2024) (“AltaGas 2025 Guidance”), available at <https://www.altagas.ca/newsroom/news-releases/altagas-announces-2025-guidance-six-percent-dividend-increase-and-continued>

1 and climate content from its website, social media, and other public communications, and  
2 “hope[s] to be able to communicate on these matters again soon.”<sup>52</sup>

3 **Q. Does either AltaGas or WGL otherwise communicate about climate responsibility**  
4 **and AltaGas’ climate strategy?**

5 A. Yes. In the AltaGas 2025 Guidance press release, the company states that its utilities,  
6 which include WGL, “have a robust long-term growth outlook driven by investment  
7 opportunities focused on continued customer additions, asset modernization, and system  
8 expansion,” and will make investments that allow the company to “continue to meet  
9 long-term customer demand for safe, reliable, and affordable natural gas while providing  
10 steady rate base growth.”<sup>53</sup> In describing its 2025 “Strategic Priorities,” the company  
11 states:<sup>54</sup>

12 AltaGas will continue to be very active in advocacy in 2025 and champion the  
13 critical work that our company and industry does in delivering safe, reliable, and  
14 affordable energy to our global customer base every day. This includes  
15 Washington Gas advancing two statements of claims to challenge proposed local  
16 gas bans in Maryland and the District of Columbia and ensure our customers have  
17 the right to choose their energy source. Natural gas and [Natural Gas Liquids] are  
18 essential to modern day life, and we will continue to advocate for their unfettered  
19 use to keep society moving forward.

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21 In its Investor Presentation published on November 12, 2024, the concepts of  
22 methane and other GHG pollution reduction and electrification do not appear as part of

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<sup>52</sup> AltaGas, *Responsibility*, available at: <https://www.altagas.ca/responsibility>. AltaGas’ reference to the Canadian Competition Act (“CCA”) is somewhat bemusing. The CCA is like existing law and regulation in the U.S. issued by the Federal Trade Commission and known as the “Green Guides.” The Green Guides are available at: <https://www.ftc.gov/news-events/news/press-releases/2012/10/ftc-issues-revised-green-guides> The CCA identifies false, misleading, or unsubstantiated claims about environmental performance as “reviewable conduct” under the Act, <https://laws.justice.gc.ca/eng/acts/C-34/page-11.html#h-89170>, and is founded on a few easily-understood key principles, <https://competition-bureau.canada.ca/how-we-foster-competition/consultations/environmental-claims-and-competition-act>

<sup>53</sup> AltaGas 2025 Guidance, *Highlights*.

<sup>54</sup> Id. at 2025 Strategic Priorities.



AltaGas’ “Value Proposition”<sup>55</sup> or among its list of Focus Areas.<sup>56</sup> AltaGas tells its investors that there are “Growth Opportunities related to Climate Initiatives,” and that this growth will involve a “[f]ocus on energy efficiency programs, emissions reductions, and adding fuels of the future,” but no additional details or metrics are provided or referenced.<sup>57</sup>

**Q. Do AltaGas’ current strategic priorities reflect adaptation to current policy priorities in the District?**

A. No. AltaGas’ current strategic priorities of growth in near term spending, rate base growth, and system expansion are essentially unchanged over the past five years, despite the District’s growing policy commitment to decarbonization. What has changed is AltaGas’ newly articulated confrontational advocacy stance and its commitment to opposing policy that might impede growth of its GHG pollution-based business.

**Q. You said that AltaGas has not changed its core utility strategies over the past five years. How did AltaGas describe its utilities’ business model in 2020?**

A. In its Investment Community Presentation dated June, 2020,<sup>58</sup> AltaGas told investors that its’ utilities business model was based on opportunities to “invest in aging infrastructure [to] grow earnings through rate base investment,” by using “accelerated replacement programs”<sup>59</sup> to drive rate base growth at a rate of eight to ten percent per year through

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<sup>55</sup> AltaGas, *Fundamentally Focused: Corporate Investor Presentation* (Nov. 12, 2024) (“AltaGas 2024 Investor Presentation”) at 4, available at <https://www.altagas.ca/invest>

<sup>56</sup> *Id.* at 5.

<sup>57</sup> *Id.* at 29.

<sup>58</sup> AltaGas, Investment Community Presentation (Jun. 2020) (“AltaGas Investor Presentation 2020”), available at [https://www.altagas.ca/sites/default/files/2020-06/Investment%20Community%20Presentation\\_June%202020.pdf](https://www.altagas.ca/sites/default/files/2020-06/Investment%20Community%20Presentation_June%202020.pdf)

<sup>59</sup> *Id.* at 17.

1 2024.<sup>60</sup> This growth in deployed fossil gas infrastructure was part of a focused effort to  
2 increase capital spending on accelerated pipe deployment programs from 31% of  
3 deployed capital to 45% of deployed capital between 2019 and 2020—a 25% increase in  
4 accelerated pipe replacement spending,<sup>61</sup> all aimed at near-term growth in returns,  
5 including from customers in the District.<sup>62</sup>

6 **Q. Please summarize this part of your testimony.**

7 A. In summary, due to inconsistency in and lack of reporting by AltaGas and WGL, we  
8 cannot know how well WGL has performed in terms of its climate responsibility or  
9 emissions reductions in recent years. AltaGas and WGL appear to have adopted an  
10 approach on climate responsibility and emissions reductions that is confused, vague, and  
11 even somewhat confrontational. At the same time, AltaGas and WGL appear to be  
12 unwavering in their commitment to deploying fossil gas delivery infrastructure and  
13 capturing near-term returns—if the Commission will allow it. AltaGas and WGL are  
14 focused on achieving growth in customers and sales of gas in a rapidly warming and  
15 transitioning world. As WGL witness Steffes has indicated, the utility's position is that  
16 the District's climate policies and laws have no impact on WGL's capital spending and  
17 other important matters addressed in this case.

18 **Q. What do you conclude based on this review?**

19 A. AltaGas and WGL have not strategically internalized the trend toward decarbonization,  
20 electrification, climate responsibility, and reductions of Scope 1, 2, and 3 GHG

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<sup>60</sup> *Id.* at 18.

<sup>61</sup> *Id.* at 20.

<sup>62</sup> *Id.* at 32.

1 emissions. WGL appears to be setting the stage for conflict with District climate policies  
2 and objectives, and creating the potential for disruptive impacts and stranded costs, in  
3 which significant amounts of gas distribution capacity—which is a large capital  
4 investment—could no longer be used and useful in the provision of gas distribution  
5 services.

6 **Q. What are some risks that WGL fails to plan for in the climate transition?**

7 A. As with all pure-play gas utilities in a rapidly warming world, the risks of adverse  
8 economic impacts are enormous for WGL and its customers. It would be unreasonable  
9 and irresponsible to WGL's shareholders for WGL to assume that it can continue  
10 operating as it always has in the future. The economic dislocation that would result from  
11 "kicking the can down the road" on the transition could be immense, regardless of who  
12 bears the ultimate costs. The opportunity costs of not embracing the transition are  
13 likewise immense, and the District could be at risk of losing its climate leadership role if  
14 WGL is permitted to continue its business as usual. Instead of managing the distribution  
15 of opportunity, the Commission itself could face a future of distributing privation.

16 **V. QUANTIFICATION OF WGL'S GHG REDUCTIONS**  
17 **PERFORMANCE UNDER CCAP**

18 **Q. Has WGL provided any specific and measurable estimates of GHG emissions**  
19 **reductions from its current or future climate program efforts in this proceeding?**

20 A. In his testimony in this proceeding, Mr. Steffes cited WGL's Climate Change Action Plan  
21 ("CCAP") for 2021-2025.<sup>63</sup> In this case, WGL's rate effective period is proposed to begin

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<sup>63</sup> *Formal Case No. 1167*, WGL's Climate Change Action Program – Part 1 (filed Dec. 15, 2021) ("CCAP")

1 on August 1, 2025.<sup>64</sup> WGL's thirteen initiatives in that 2021-2025 plan contain only one  
2 specific quantification of GHG emissions reductions, relating to buying a fleet of  
3 methane gas-powered vehicles.

4 **Q. What GHG-reducing projection did WGL include in its 2021-2025 CCAP?**

5 A. WGL estimated that that if it buys new, undepreciated fleet vehicles that run on methane  
6 gas and runs them or their replacements until 2032, WGL could allegedly eliminate about  
7 5,000 metric tonnes ("MT") of GHG emissions.<sup>65</sup> It is dubious that these emissions  
8 reduction estimates are accurate, given that methane gas-burning vehicles have  
9 significant emissions. Even assuming the reliability of WGL's estimates, they do not  
10 materially move WGL in the right direction on GHG emissions reductions. Assuming  
11 these estimated reductions are evenly distributed across ten years, at 500 MT per year,  
12 this would represent only about one-tenth of one percent (0.123%) of AltaGas' Scope 1 &  
13 2 GHG emissions for its utility operations in 2023.<sup>66</sup>

14 **Q. Have you reviewed WGL's climate action programs in any other regulatory**  
15 **proceedings?**

16 A. Yes. As in this case, in a recent rate case in Maryland in which WGL proposed funding  
17 for a suite of climate-related programs, I found that WGL's efforts were out of step with  
18 jurisdictional law and policy and would yield only small reductions in GHGs. I have  
19 provided an extract of my public direct testimony before the Maryland Public Service

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<sup>64</sup> *Formal Case No. 1180*, WGL's Application at 5.

<sup>65</sup> *Formal Case No. 1167*, WGL CCAP at 62.

<sup>66</sup> AltaGas, 2023 Sustainability Update (Dec. 2023), at 5 (stating an amount of 406,235 MT CO<sub>2</sub>e. Calculated as  $500 / 406,235 = 0.00123$ )

Commission (“MD PSC”) in its Formal Case No. 9704 (“MD FC 9704”) as Exhibit  
Sierra Club (A)-3.

**Q. You stated that WGL’s GHG emissions reductions estimates are dubious. Please explain.**

A. WGL has a history of not delivering on its climate benefits assertions and in not ensuring its programmatic objectives align with District climate policies and goals. As summarized by Sierra Club expert witness Dr. Emily Grubert in Commission Formal Case No. 1169:<sup>67</sup>

WGL’s proposals do not deliver their stated climate benefits. The Company’s [Climate Business Plan (“CBP”)] contains either major errors or material unstated assumptions about how it intends to reach net-zero GHG emissions by 2050 (which is, problematically, five years after D.C.’s net-zero mandate). The Company’s proposals in the present case, assuming alignment with its CBP, do not align with a path to net-zero emissions. In particular, the presumed use of resources (RNG, certified gas, H<sub>2</sub>, and P2G) with sometimes large GHG footprints does not provide a path to zero emissions, and the Company does not propose any investments in compensatory carbon dioxide (“CO<sub>2</sub>”) removal or other negative emissions approaches that would enable the Company to reach net-zero emissions by offsetting the emissions from the above fuel sources. To emphasize this point, the net-zero pathway the Company favors from its CBP does not produce net-zero emissions, even under the Company’s own assumptions. The omission of compensatory CO<sub>2</sub> removal that is needed to reach net-zero is particularly concerning, given that a core argument the Company makes against a full electrification pathway to climate compliance is that its gas-based proposal has a lower cost. Negative emissions (and specifically the ownership right to a volume of negative emissions created via technological or other processes) are scarce and very expensive, and the scale at which they might be required under the Company’s current plan is large. Similarly, investments in efficient natural gas appliances and other gas-based infrastructure (e.g., RNG fueling and blended H<sub>2</sub> / natural gas power) will result in infrastructure lock-in that requires the ongoing use of fuels with GHG emissions. As noted by Witness McClelland, core elements of the Company’s proposed efficiency investments were recently discontinued by the District of Columbia Sustainable Energy Utility, due in part to incompatibility with climate mandates. Similarly, the proposed ongoing investment in the gas distribution system through PROJECT*pipes* is not justifiable as a climate investment, but rather locks in natural gas infrastructure at high capital cost that could potentially be largely avoided via pipeline retirement and fuel switching

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<sup>67</sup> *Formal Case No. 1169*, Direct Testimony of Emily Grubert, Ph.D., on Behalf of Sierra Club, at 7-8 & 27-28 (filed Nov. 4, 2022) (citations omitted).

(e.g., electrification). Given that no substitute gaseous fuel that could use this infrastructure has a path to zero emissions, investing in gas pipelines for climate reasons is unjustifiable under D.C.'s net-zero mandate. Assumptions and claims made by the Company in testimony and in response to discovery questions are inconsistent, unsupported, and insufficiently aligned with climate laws to justify investment—at least without substantial additional proof that investments will actually deliver climate benefits, relative to reasonable counterfactuals, under D.C.'s climate laws. The Company has also failed to perform GHG emissions analyses of its proposed lower-carbon fuels, and has not provided evidence that it has the capacity to do so at a level sufficient to support its proposed investments. Proposed actions in this case are not consistent with a path to net-zero emissions, which is required by District law; are misleadingly justified using faulty emissions accounting; and carry a substantial risk of requiring customers to pay multiple times for infrastructure and other investments before climate benefits commensurate with District law are actually achieved. As such, WGL has not met its burden to support a determination from this Commission that the programs in its Application are prudent, nor just and reasonable.

Dr. Grubert's testimony is not refuted by anything submitted into the record by WGL in this case.

## **VI. WGL'S PROPOSALS THAT WOULD INCREASE GAS USE, AND CLIMATE POLLUTION**

**Q. What is WGL's overall proposal for increasing its revenues in the effective rate year?**

A. WGL requests an increase of \$45.6 million in annual base revenues, based on a proposal to add \$11.7 million in PROJECT*pipes* surcharges that would be transferred to base revenues. The remaining \$33.9 million is based on various costs and a proposed increase of about \$3.76 million in profits stemming from a proposed increase in the return on equity from 9.65% to 10.50%, as well as an increase in the share of equity in the overall cost of capital ("equity ratio").<sup>68</sup> The proposed increases, in total, would increase the revenue requirement by about 16% in the effective rate year, and by about 18.4% for

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<sup>68</sup> WG(B) (Burrows) at 2.

1 residential heating customers on average.<sup>69</sup> The proposed rate increase for residential  
2 customers is about three times greater than the compounded rate of inflation in 2023 and  
3 2024.<sup>70</sup> The overall proposed impact of the monthly increase for residential heating  
4 customers is 17.6%, or \$15.33 per month for the hypothetical average customer using 627  
5 therms per year.

6 **Q. What significant rate design changes does WGL propose?**

7 A. In addition to increases in its costs and profits, WGL proposes to redesign rates to collect  
8 more of its revenue requirement independently from usage—through a 25% increase in  
9 fixed monthly customer charges and a move to decoupled straight fixed variable rates—  
10 and to levelized revenue collection by imposing a decoupling mechanism that is indexed  
11 on a deviation from so-called “normal” weather—named the “Weather Normalization  
12 Adjustment.” Although WGL’s owners are handsomely compensated for assuming the  
13 business risks associated with investing and managing the utility’s gas distribution  
14 system, WGL seeks to transfer weather-related business risk to its customers through  
15 charges decoupled from usage and variability in use *and* collect even higher profits under  
16 this lower risk profile.

17 **Q. How would you characterize these proposals as a whole?**

18 A. While I address each of these proposals separately, they all appear to be cut from the  
19 same cloth. WGL’s overall motivation in the rate design proposals appears to be the  
20 weakening of price signals supporting more reductions in gas use by decoupling usage

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<sup>69</sup> WG(O) (Lawson) Ex. WG (O)-1, Sched. C, p. 1 of 4.

<sup>70</sup> Coin News Media Group Company, *U.S. Inflation Calculator*, available at <https://www.usinflationcalculator.com/inflation/current-inflation-rates/> (Calculated as 18.4% / (3.4% + 2.7%) = 3.02)

1 from bills. As to each element, I recommend that the Commission reject this WGL  
2 campaign as inimical to efficiency and in conflict with the aims of District climate and  
3 clean energy law and policy. Though there could be short-term bill benefits for customers  
4 if there is less monthly bill volatility, these WGL proposals are likely to have the effect of  
5 cajoling existing gas customers into using more gas and using it less efficiently, delaying  
6 the transition to carbon-free energy sources and uses, and creating much higher fossil  
7 energy bills and strandable costs in the future. For very low-income customers, the non-  
8 bypassable fixed component of bills would increase significantly.

9 **Q. How does climate change appear to be impacting WGL sales and revenues?**

10 A. WGL witness Tuoriniemi testifies that, “[b]ecause the principal customer usage of natural  
11 gas in the District of Columbia is for space heating, under normal weather conditions,  
12 usage is greatest in the months of October through May,” and that this normal seasonal  
13 variability “can be greatly affected when weather is colder or warmer than normal.”<sup>71</sup> In  
14 recent years, weather variations have been significant. According to WGL, the “variation  
15 in weather from normal levels” resulted in more than twenty million fewer therms of  
16 sales and nearly \$11 million in decreased revenues in the test year used in this  
17 application.<sup>72</sup> Over the past five years, the reduction in sales from “normal levels” has  
18 exceeded 124 million therms.<sup>73</sup>

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<sup>71</sup> WG(D) (Tuoriniemi) at 13 & Chart 1.

<sup>72</sup> *Id.* at 14, Table.

<sup>73</sup> *Id.*



1   **Q.    What does this suggest about normal weather?**

2    A.    It suggests that there is nothing normal about the weather in recent years, nor does it  
3           appear that recent variations in weather, including in the test year, are reasonably  
4           approached by normalizing the data from those years in line with longer term weather  
5           patterns. Due to climate change, long-term averages cannot be reliably used to forecast  
6           weather or make normalization adjustments, including through a weather-indexed  
7           decoupling rate.

8   **Q.    What do we know about the number of customers that WGL serves and its sales**  
9       **revenue?**

10   A.    Just as the number of heating degree days is going down with climate change, the number  
11          of customers served with gas is also decreasing. Across the time period from January  
12          2018 to August 2024, the number of residential heating and commercial and industrial  
13          customers peaked in June 2022, and both metrics were lower in August 2024.<sup>74</sup> WGL's  
14          residential delivery and sales declined dramatically in 2023 compared to those in 2022.<sup>75</sup>  
15          WGL's delivery revenues are expected to have grown by 22.5% in 2024, but sales  
16          revenues are project to have further declined in 2024, by 4%.<sup>76</sup>

17                 In addition, I looked at data provided by WGL relating to therms delivered to  
18          residential heating customers and District customers as a whole.<sup>77</sup> Over the period from  
19          January 2018 through December 2023, total therms delivered fell by nearly 53 million

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<sup>74</sup> WGL Response to OPC Data Request No 1-2 & Att. (Exhibit Sierra Club (A)-8)

<sup>75</sup> WGL Response to OPC Data Request No. 7-5 (Exhibit Sierra Club (A)-9)

<sup>76</sup> *Id.*

<sup>77</sup> WGL Response to OPC Data Request No. 1-3 (Exhibit Sierra Club (A)-10); *see also* WGL(N) (Raab), Ex. WG (N)-4.

therms, or 17% compared to the 2023 deliveries. For the residential heating customer class, the delivery of therms fell by 24% over the same period.

**Q. How has WGL's rate base changed over this time period?**

A. During the time period from 2016, when AltaGas acquired WGL, through the end of 2023, WGL's rate base has nearly doubled, growing 99% from \$411 million to more than \$818 million, at an average rate of 14% per year.<sup>78</sup> Inflation during this period increased by an average of 4% per year, or 27% in total. Not only has WGL's rate base growth outpaced the rate of inflation by a factor of nearly four since AltaGas took control of WGL, but this has also happened at a time when total deliveries, customer count, and sales have all contracted significantly.

**1. WGL's Proposed Fixed Customer Charge Increase**

**Q. What is WGL's justification for increasing the fixed customer charge by twenty-five percent?**

A. WGL is seeking to move to straight fixed variable rates, a form of rate design that assigns costs to fixed or volumetric charges based on the accounting label applied to the underlying cost. That is, if accountants label a cost as a "fixed" cost, WGL and straight fixed variable rate advocates would assign that cost to a fixed or nonbypassable charge category. Such charges cannot be avoided by any amount of efficiency improvement or self-imposed privation. And costs labeled as "variable" would be assigned to variable, i.e., volumetric, charges. WGL's witness on rate design, Andrew Lawson, argues that this approach aligns recovery of WGL's fixed costs with fixed charges, which is an accurate

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<sup>78</sup> WGL Response to OPC Data Request No. 1-4A (Exhibit Sierra Club (A)-12)

1 statement of what the design approach does, but then continues by stating that this is  
2 consistent with cost causation principles for rate design.<sup>79</sup> This latter statement is  
3 unfounded, as I will explain.

4 **Q. Why do you say that straight fixed variable rate design is not consistent with cost**  
5 **causation principles?**

6 A. First, economic efficiency is advanced when prices reflect long-run marginal costs; that  
7 is, when usage of a good or service is priced at the incremental impact on those long-run  
8 costs. This principle does not mean and has never meant that prices are more efficient  
9 when they align with the fixed or variable structure of costs. In the long run, all costs are  
10 variable. Expansions in plant, which are almost entirely increases in fixed costs, are  
11 driven by increases in cumulative and concentrated usage (also known as demand or  
12 capacity, as opposed to consumption or energy). Mr. Lawson asserts that fixed costs are  
13 costs that do not vary based on the amount of gas consumed—such as customer billing,  
14 collections, accounting, metering, and service connection costs.<sup>80</sup> But this statement is  
15 both incorrect and misleading. A fundamental flaw in Mr. Lawson’s assertion is that all  
16 costs labeled as “fixed” are also “sunk,” regardless of the level of demand. At least to the  
17 extent that useful lives are impacted by usage levels, this is not true. Very large users of  
18 gas cause very large increases in fixed costs. Large users need larger meters, regulators,  
19 service lines, and meter bars, and therefore cause larger fixed costs. Such service  
20 components are not uniform across entire customer classes or across time. As a result,  
21 any rate making method that lumps all fixed costs together for recovery through a single

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<sup>79</sup> WG(O) (Lawson) at 11:16-22.

<sup>80</sup> *Id.* at 11:25 – 12:2.

1 class-wide fixed charge is unjust and deviates from cost causation. Second, the nature of  
2 a cost in accounting terms defines only its useful life for accounting purposes. There are  
3 many businesses with high percentages of fixed costs—including airlines, hotels, coffee  
4 shops, and more—that in the competitive world, do not charge based on high fixed  
5 charges. These competitive businesses could not stay in business if they tried to charge a  
6 cover charge for the opportunity to be a customer. Those that make sustainable  
7 investments based on informed judgment and reasonable forecasts succeed as businesses  
8 and keep costs under control. Third, in all my years of work in utility regulation, I have  
9 yet to find a single published treatise, study, or any documentation that supports the  
10 notion that economic efficiency is improved when rate design mimics accounting  
11 categorization. Fourth, straight fixed variable rates are economically regressive—they  
12 place a larger share of costs on customers who use fewer energy services, and these lower  
13 users of energy services generally have lower household incomes. Fifth, straight fixed  
14 variable rates, with their increases in fixed charges and offsetting reductions in  
15 volumetric charges, weaken the economic price signals that support efficiency of use by  
16 customers and thereby weaken the economics of a transition away from gas use toward  
17 electrification. Simply stated, with lower volumetric charges and higher fixed charges,  
18 the payback period for efficiency investments is greater. WGL provides no WGL- or  
19 District-specific elasticity study to quantify the impacts of this weakening of price  
20 signals.

1 **Q. Why do you say that WGL's proposed fixed charge increases are economically**  
2 **regressive?**

3 A. Rates and charges are economically regressive when the cost burden decreases as  
4 customer income rises. Income is correlated with usage due to a range of factors,  
5 including household budgets, home size, and housing density. Utility fixed costs are also  
6 correlated with usage level—big service loads require bigger services, single-family  
7 homes on big lots have more gas appliances and longer service lines, and so on. Lower  
8 charges for higher use therefore also violate the principle of cost causation. So when rates  
9 and charges have lower cost impacts as consumption rises, those rates and charges  
10 disproportionately and unfairly burden those with lower incomes. As shown in WGL  
11 witness Lawson's work papers, the percentage of impact from WGL's proposed rate  
12 increases is greater when usage is lower,<sup>81</sup> so given the broad correlation between usage  
13 and income, increasing the amount of a utility service bill that is fixed increases the  
14 burdens on customers with lower incomes.

15 **Q. Do you have any other concerns?**

16 A. Yes. If WGL is allowed to pretend for billing purposes that its fixed costs are not driven  
17 by demand, and its demand is not seasonal, the proposed Weather Normalization  
18 Adjustment ("WNA") weakens an essential price signal to WGL itself. WGL is proposing  
19 that any cost it incurs that can be labeled a fixed cost by its accountants can be recovered,

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<sup>81</sup> WG(O) (Lawson), Ex. WG (O)-2, Sched. A, p. 1 of 10 (Monthly Bill Comparisons). While Mr. Lawson does not provide a bill impact study for various levels of annual usage for residential heating customers, the comparison data shows that the bill impact of WGL's proposals is significantly greater with low use than for higher use. This is a simple arithmetic result of the increase in the fixed customer charge being applied to all customers without regard for level of usage.

1 at a profit, without regard to the level of customer demand. This will create an incentive  
2 for WGL to spend more on capital assets and other fixed cost items than it should. I can  
3 understand why WGL would want to transfer the risks of forecasting and prudent  
4 deployment of capital onto its customers, but this is not in the best interests of the rate-  
5 paying public or the District's climate and clean energy policies.

6 **Q. What does WGL say about how changes in price structure impact consumption?**

7 A. Company witness Lawson makes two contradictory statements in his supplemental  
8 testimony. First, he asserts that WGL expects "no changes in service requirements or  
9 billing determinants by rate schedule"<sup>82</sup> because of the Company's proposed rate  
10 increases. It is not clear whether WGL also contends that the greater assignment of fixed  
11 costs to non-bypassable fixed charges will lead to such changes. What WGL does say is  
12 that it enjoys an ability to extract monopoly rents because its "customer base in the  
13 District is largely comprised of customers that are unlikely to have a significant ability to  
14 shift their usage in the short-term," and because the Company is not "able to attribute  
15 meaningful changes in usage to past rate changes."<sup>83</sup> Then Mr. Lawson concludes by  
16 saying that, "with respect to changes in billing determinants that may occur by rate  
17 schedule, such changes can be evaluated with a standard price elasticity analysis."<sup>84</sup>

18 While WGL offers no WGL- or District-specific elasticity analysis,<sup>85</sup> it does  
19 explain why higher fixed charges benefit the utility, stating that "Higher Customer

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<sup>82</sup> WG(20) (Lawson) at 5:12-14.

<sup>83</sup> *Id.* at 5:14-17.

<sup>84</sup> *Id.* at 5:20-22.

<sup>85</sup> *Id.* at 6:9. Mr. Lawson also cites U.S. Energy Information Administration data that shows that for every 1% increase (or decrease) in prices, gas use would decline (or increase) by 0.08%. *Id.* at 6:8-21. It is

1 Charges also serve to spread a larger percentage of costs evenly throughout the year,  
2 creating a more predictable bill, and reduce the costs that are otherwise reflected in the  
3 Distribution Charge, thereby reducing the volatility of customers' winter bills."<sup>86</sup> In  
4 simple terms, higher fixed charges obscure the volatility inherent in gas prices and a  
5 weather-sensitive energy business, mask the monthly price signals of higher consumption  
6 (especially in a system with no advanced metering infrastructure), and reduce price  
7 sensitivity to volumetric charges. All these things benefit WGL more than they benefit the  
8 District's residents or its climate and energy goals.

9 **Q. Didn't the Commission express support for using fixed charges to recover fixed costs**  
10 **in its decision in Formal Case No. 1137?**<sup>87</sup>

11 A. Yes. I recommend that the Commission move beyond this approach taken in the year  
12 2017. Straight fixed variable rates are inconsistent with District laws and policies relating  
13 to climate responsibility and electrification, and with advancing the transition away from  
14 use of fossil methane gas. Such rates create an incentive for WGL to spend more money  
15 on things that are classified by accountants as "fixed," and are regressive in their impacts  
16 on customers. There is no statutory or rational economic basis for the recovery of what  
17 accountants label as fixed costs through fixed charges. While higher fixed charges and  
18 lower volumetric charges reduce bill volatility, this problem is better addressed with peak

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unclear how this data point is relevant to WGL's proposed rates, since they include both increases in fixed charges offsetting increases in volumetric charges, and a proposed weather adjustment.

<sup>86</sup> WG(O) (Lawson) at 12:3-6.

<sup>87</sup> *Formal Case No. 1137, In the Matter of the Application of Washington Gas Light Company for Authority to Increase Existing Rates and Charges for Gas Service* ("Formal Case No. 1137") Order No. 18712 at ¶ 403 rel. Mar. 3, 2017.

1 use reduction programs, electrification, and overall efficiency improvements, rather than  
2 using rate design to suppress the price signal associated with high consumption.

3 **2. WGL's Proposed Weather Normalization Adjustment Decoupling Mechanism**

4 **Q. How else does WGL propose to change its rates to stabilize its revenue and increase**  
5 **barriers to customers' understanding of their gas use?**

6 A. WGL proposes that the Commission approve a WNA, which is a decoupling mechanism  
7 indexed on deviations observed in the number of heating degree days from a calculated  
8 historical average of normal weather. As stated by WGL witness Robert E. Tuoriniemi,  
9 the WNA seeks to eliminate the variability of weather from the calculation of customer  
10 bills and WGL revenues, stabilizing the levels of both.<sup>88</sup> The WNA mechanism is  
11 proposed to apply to the non-gas portion of customers' WGL rates, and Mr. Tuoriniemi  
12 asserts that "adoption of the WNA proposal will not reduce customers' incentive to use  
13 energy wisely."<sup>89</sup> Finally, Mr. Tuoriniemi asserts that the WNA better aligns WGL's rates  
14 with its cost structure, and would levelize WGL revenue collection.<sup>90</sup>

15 **Q. Is the assertion that the WNA better aligns rates with WGL's cost structure**  
16 **reasonable?**

17 A. No. The WNA operates like WGL's proposed increases in fixed customer charges to  
18 recover a more equal or levelized share of fixed costs from customers every month. So,  
19 the WNA aligns rate design to a more evenly distributed recovery of what accountants  
20 label as fixed costs, but not to the way in which fixed costs are incurred. WGL's fixed

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<sup>88</sup> WG(D) (Tuoriniemi) at 21:17-20.

<sup>89</sup> *Id.* at 22:9-17.

<sup>90</sup> *Id.* at 22:18 – 24:17.



1 costs are ultimately driven by the level of gas consumption. Extremely cold weather  
2 drives peak demand during the period of extremely cold weather, which in turn drives  
3 fixed capacity investments. Increasing charges during periods of lower demand through a  
4 levelization mechanism like WGL's proposed WNA masks the price signal that customers  
5 see in unadulterated monthly bills. Volumetric rates better reflect cost causation, and the  
6 WNA, like the proposed increased in fixed customer charges, deviates from cost  
7 causation and other key rate making principles like efficiency of rates, ease of  
8 understanding, and fairness. A better solution to building capacity for peak demand, but  
9 charging for it all year long, would be to ramp up efficiency, peak demand reduction, and  
10 electrification efforts.

11 **Q. How would the WNA negatively impact the efficiency and ease of understanding of**  
12 **WGL's rates?**

13 A. As with the proposed increases in fixed customer charges to move WGL toward straight  
14 fixed variable rate design, the WNA weakens the price signal in customer bills. While  
15 WGL asserts that the WNA would not negatively impact customer incentives to use  
16 energy wisely, it provides no evidence to support this assertion.<sup>91</sup> WNA adjustments  
17 would appear months after the deviations from estimated normal usage occurred under  
18 the complicated process envisioned by WGL, and the adjustments would vary depending  
19 on when the deviations occurred.<sup>92</sup> The monthly linkage between usage and bills, which  
20 informs decisions about consumption habits, energy efficiency investments, and  
21 electrification decisions, would be weakened. Bills during periods of low use would

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<sup>91</sup> *Id.* at 22:9-17.

<sup>92</sup> WG(O) (Lawson) at 15:15 – 19:11.

1 appear higher; bills for higher usage would appear lower. Only through meticulous  
2 analysis of every bill over the course of about two years could a customer discern how  
3 their usage at some remote time impacted current bills. The WNA would be hard to  
4 understand and frustrating to customers, as well as counterproductive to reducing gas  
5 usage in line with the District's climate mandates.

6 **Q. Do you have any other concerns?**

7 A. Yes. If WGL is allowed to pretend for billing purposes that its business is not seasonal,  
8 and that the weather is not becoming more unpredictable and warmer, the WNA weakens  
9 an essential price signal to WGL itself. Weather extremes are attributable to climate  
10 change, but WGL seeks to insulate itself, at least in part, from the economic and financial  
11 impacts of climate change by pretending, for purposes of revenue collection, that all  
12 future weather is normal. The long-term trend in weather is likely to continue to be  
13 warmer, and at the same time, extremes are likely to be bigger. WGL should confront this  
14 reality rather than obscure these impacts through a WNA. It would be more prudent,  
15 reasonable, and just for WGL to select better options in which WGL engages customers  
16 in mitigating the bill impacts of extreme weather through efficiency and electrification,  
17 while moderating spending on strandable assets; the WNA weakens WGL's incentive to  
18 pursue these options.

19 **Q. Why do you say that the proposed WNA is unfair?**

20 A. Over the course of my career, I have learned much about the special challenges of helping  
21 lower-income customers increase the efficiency of their use of energy and energy  
22 services. Customers with larger disposable incomes are less price-sensitive and can invest  
23 in energy efficiency or electrification more easily than customers with limited incomes.

1 The WNA proposal's negative impacts on low-wealth customer efficiency and  
2 electrification decisions are therefore almost certain to be disproportionately greater, if  
3 only because of relative differences in elasticity of demand and sensitivity to bill changes.  
4 The confusion and misinformation about usage and potential bill benefits will be greater  
5 due to differences in energy literacy and access to expert advice. And the burdens of  
6 overcoming these negative impacts will make achieving District climate and clean energy  
7 goals harder for low-wealth customers. That is unfair.

8 **Q. Please summarize your reasons for opposing WGL's proposed WNA.**

9 A. WGL's WNA would distort the bill and revenue impacts of the seasonality of its business  
10 and obscure the impacts of extreme weather, and the cost causation relationship between  
11 demand and fixed cost investments, severe weather events, and generally warmer weather  
12 that WGL's fossil methane business helped to cause, all the while weakening the  
13 incentive for customers to participate in the transition to increased reliance on fossil-free  
14 energy.

15 **Q. Didn't the Commission invite WGL to propose a decoupling mechanism in a**  
16 **previous case?**<sup>93</sup>

17 A. Yes, but that Commission language was about a decoupling mechanism that could  
18 incentivize energy efficiency and decarbonization. While traditional decoupling does not  
19 create incentives for efficiency or electrification, but at least reduces some barriers to  
20 utility support for such programs, WGL's WNA does not even do that. As I have  
21 discussed, the proposed WNA is a counterproductive cousin to traditional decoupling

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<sup>93</sup> *Formal Case No. 1169*, Order 21939 at ¶ 371.

1 that, by weakening and distorting prices signals, would be worse for efficiency and  
2 decarbonization.

3 **Q. What is your recommendation to the Commission on WGL's proposed WNA?**

4 A. The Commission should reject the proposal.

5 **3. WGL's Unreasonable Proposal to Increase its Allowed Return on Equity to 10.50%**

6 **Q. What does WGL propose for its allowed return on equity ("ROE")?**

7 A. WGL proposes an overall rate of return of 7.874%, which is comprised of a proposal for  
8 an allowed ROE of 10.500% and an equity ratio of 52.486%.<sup>94</sup> This proposal would  
9 result in an increase in WGL's currently allowed ROE of 85 basis points, and an increase  
10 in the equity ratio of 48.6 basis points.<sup>95</sup> I estimate that these proposals relating to ROE  
11 reflect \$3.76 million, or 8.2% of the proposed revenue requirement increase in this case.

12 **Q. What is your view of WGL's proposal to increase the allowed ROE?**

13 A. In my opinion, the testimony and analysis from WGL witness Dylan W. D'Ascendis,  
14 which aims to support the recommended adjustment in the ROE and equity ratio, is  
15 deficient in key respects. In particular, Mr. D'Ascendis: (1) fails to recognize how a  
16 relatively smaller gas distribution company like WGL enjoys a size advantage in  
17 achieving a successful transition away from being a business that depends on increasing  
18 throughput of fossil methane gas, (2) fails to recognize how the District's climate and  
19 clean energy policies will reduce the climate risks faced by WGL as the transition away  
20 from reliance on fossil fuels continues in the District, (3) fails to account for the less  
21 progressive regulatory and policy environments in which proxy group companies operate

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<sup>94</sup> WG(B) (Burrows) at 2 Table, Ex. WG (B)–1.

<sup>95</sup> See Formal Case No. 1169, Order No. 21939 at ¶ 104 (Table).

1 and the added risk they face as a result, (4) fails to account for the ways in which gas  
2 business risks undertaken by WGL's parent, AltaGas, do not translate to WGL, and  
3 (5) fails to account for the fact that not all regulatory mechanisms under which gas  
4 distribution companies operate have the same impacts on risk when climate and clean  
5 energy policies are taken into account.

6 **Q. Please explain why WGL enjoys a small company advantage in the transition away**  
7 **from being a fossil fuel distributor.**

8 A. Mr. D'Ascendis argues that "bigger is better" when it comes to operating a distribution  
9 utility.<sup>96</sup> I agree with this assessment when applied in the right factual and historical  
10 context. But WGL faces no competition for gas distribution services in its service  
11 territory; as the *only* gas distribution utility in the District, there is no competitive  
12 advantage or disadvantage related to its size. Further, Mr. D'Ascendis does not assess  
13 whether the size axiom applies when the subject utility faces a fundamental need to do its  
14 share of work to complete a transition away from the use of fossil fuels in its certified  
15 service territory. Smaller, more nimble businesses navigate fundamental change far more  
16 efficiently and elegantly than larger sector incumbents; this is the fundamental lesson of  
17 dinosaurs versus mammals. WGL could be such a nimble survivor. WGL's relatively  
18 small size in the context of the District's transition policies is an advantage, not a  
19 disadvantage. And financially and structurally, WGL's ability to act with a measure of  
20 independence from its riskier parent is also an advantage.

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<sup>96</sup> WG(C) (D'Ascendis) at 44-45.

1 **Q. Why do you characterize the District's climate and clean energy policies as a risk**  
2 **reducer?**

3 A. The District's broad and comprehensive climate and clean energy policies are based on  
4 extensive planning, transparency, continued stakeholder engagement, economical  
5 grounding, equity, and clear and reasonable timelines. The District is approaching the  
6 transition holistically, meaning that benefits and burdens are more likely to demonstrate  
7 distributional justice for residents and businesses alike. This creates a hospitable and risk-  
8 reducing environment for WGL to undertake a transformation or other initiatives in  
9 support of those policies. As such, they offer an opportunity for WGL to significantly  
10 mitigate the transition risks that AltaGas detailed for its investors.<sup>97</sup> WGL faces less  
11 climate transition risk, which is business risk, and the recommended allowed ROE should  
12 have been adjusted downward to reflect that fact.

13 **Q. How do less progressive policy environments impact gas distribution business risk?**

14 A. Other jurisdictions listed in Mr. D'Ascendis' proxy group<sup>98</sup> have not adopted the kind of  
15 comprehensive, progressive, and climate-responsible policy agendas that DC has. As  
16 such, those businesses face higher business risk related to the clean energy transition.  
17 This should also be reflected in a lower ROE than Mr. D'Ascendis recommended.

18 **Q. Did Mr. D'Ascendis fully account for the relationship between WGL and its parent,**  
19 **AltaGas, in evaluating the range of risk and other factors in which WGL operates?**

20 A. In my opinion, no. AltaGas operates several different businesses, or segments, in the  
21 fossil methane gas business. As recognized by S&P Global and Fitch, the parent-

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<sup>97</sup> See Exhibit Sierra Club (A)-4.

<sup>98</sup> WG(C) (D'Ascendis) at 12.

1 subsidiary relationship between AltaGas and WGL weighs on WGL in a negative way  
2 due to the risky midstream methane gas business that AltaGas owns and operates.<sup>99</sup>  
3 Further, as the Commission is aware, and as S&P recognized, WGL operates as an  
4 insulated core subsidiary of AltaGas.<sup>100</sup> There is no evidence in WGL's testimony that the  
5 company's witnesses accounted for this reduced and differentiated risk in developing  
6 WGL's ROE recommendation. These insulating measures warrant a reduction in the  
7 proposed ROE.

8 **Q. Does WGL operate under the same regulatory mechanisms, such as decoupling, as**  
9 **other utilities in Mr. D'Ascendis' analysis?**

10 A. It depends who you ask. S&P's positive assessment of WGL is that WGL operates under  
11 "numerous regulatory mechanisms."<sup>101</sup> Mr. D'Ascendis takes the view that the lack of a  
12 weather adjustment mechanism means increased risk for WGL.<sup>102</sup> Fitch would like  
13 WGL's revenues to also be weather decoupled.<sup>103</sup> But in this case, both Mr. D'Ascendis  
14 and Fitch are wrong, or at least short-sighted in a way that increases business risk for  
15 WGL. WGL's proposed WNA doesn't reduce climate variability and its impacts on actual  
16 consumption and demand; it just uses customer billing as an earnings levelizer and a  
17 gloss on challenges that WGL should figure out how to manage. As I have addressed  
18 earlier in this testimony, while weather decoupling will stabilize revenues and bills, the  
19 approach frustrates District climate transition policies, will likely increase sales by

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<sup>99</sup> WG(B) (Burrows), Ex. WG(B)-8

<sup>100</sup> *Id.* at 1-2.

<sup>101</sup> *Id.* at 1.

<sup>102</sup> WG(C) (D'Ascendis) at 48:19-25.

<sup>103</sup> WG(B) (Burrows), Ex. WG(B)-8 at 9.

1 masking cost causation in monthly bills, and will give WGL an incentive to grow the  
2 volume of strandable assets under the coming transition away from fossil fuel  
3 dependence. Regulatory mechanisms that help the utility and its shareholders are always  
4 favored by the utility and its shareholders, but that does not mean those are good for  
5 customers or the long-term financial health of the utility. At the very least, the failure to  
6 evaluate the impact of regulatory mechanisms on WGL in the District's climate and clean  
7 energy policy environment means that Mr. D'Ascendis' assessment that the lack of  
8 weather decoupling increases WGL's business risk is incomplete and likely in error.

9 **Q. What do you conclude from this review?**

10 A. By failing to account for significant risk reduction aspects of WGL's size, organizational  
11 structure, and operating environment and the opportunities for risk reduction inherent in  
12 the District's well-ordered policies aimed at the transition away from reliance on fossil  
13 fuels, WGL's case puts forward an excessively expensive proposal for ROE and capital  
14 structure.

15 **Q. You have testified that WGL's approach to climate responsibility and the transition**  
16 **is inconsistent, or at least not designed to be consistent with District climate and**  
17 **clean energy policies and laws. Doesn't this course of action increase WGL's**  
18 **business and climate risk and justify a higher ROE?**

19 A. No. This scenario reflects the moral and economic hazard implicit in an overly simplistic  
20 reliance on setting the ROE based on other businesses in a proxy group. Utilities are  
21 entitled to an opportunity to earn a reasonable return on their shareholders' investments,  
22 not a license to deviate from jurisdictional policy in order to increase risk and return. The



Commission has broad discretion to set rates that fall within a zone of reasonableness,<sup>104</sup> which, in my opinion, should include considering whether the utility has generated additional unnecessary risk by slow-walking or resisting compliance with jurisdictional policy.

**Q. How do you recommend that the Commission respond to WGL's ROE and equity ratio proposals?**

A. I recommend that the Commission reject any increase in WGL's allowed ROE and equity ratio, as proposed by WGL.

**VII. WGL'S PROPOSAL TO TRANSFER \$11.7 MILLION IN ACCELERATED PIPE REPLACEMENT SPENDING TO BASE RATES**

**Q. What is your view of WGL's proposal to add \$11.7 million to its revenue requirement for base rates in order to recover PROJECTpipes spending under its accelerated pipe replacement project?**

A. I have three concerns. First, I find it is unreasonable to propose the transfer without first determining whether the investments are used and useful in not only delivering gas, but also in supporting the goals of the District's climate and clean energy transition policies. Pipe infrastructure has useful lives that extend into the timeframe when serious GHG emissions reductions will be required, and under the District's policies, the spending on new pipes is very likely to represent significant additions to the strandable accounts ledger. For WGL, this amounts to climate-related transition risk. Second, WGL should be required to recover pipe replacement spending through isolated tracking accounts in order to provide increased transparency, more discrete financial management, and more

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<sup>104</sup> Formal Case No. 1169, Order 21939 at ¶ 83.

1 efficient regulatory treatment as the District advances its transition away from fossil fuel  
2 dependence. Third, while WGL broadly seeks an increase in its depreciation expense, it  
3 should review its depreciation strategy for pipe replacement spending in light of a  
4 broader strategy to support the District's transition away from fossil fuel use.

5 Depreciation rates are a powerful tool in advancing the rate making matching principle,  
6 and given that the transition may be reduced asset lives for obsolete fossil fuel  
7 infrastructure, the role of depreciation in ensuring just and reasonable rates for pipe  
8 replacement spending is even more important.

9 **Q. What do you recommend based on these observations?**

10 A. I recommend that the Commission require WGL to demonstrate how the assets associated  
11 with its accelerated pipe replacement spending are used and useful in the provision of gas  
12 distribution service in light of the District's climate and clean energy laws and policies,  
13 that the Commission require WGL to recover pipe replacement costs through a separate  
14 tracking mechanism, and that the Commission require WGL to conduct a separate  
15 depreciation study for the assets associated with accelerated pipe replacement in the  
16 context of a strategy to transition WGL's business along with the District.

17 **VIII. SUMMARY OF RECOMMENDATIONS**

18 **Q. How should the Commission act on WGL's application to increase rates in this**  
19 **proceeding?**

20 A. In this testimony I make several recommendations, which can be summarized as follows:  
21 • The Commission should provide clear and specific guidance to WGL requiring the  
22 development of a plan for eliminating GHG emissions relating to its operations.

- 1           • The Commission should disapprove rate proposals in this proceeding that conflict with  
2           or frustrate the District's mandated transition away from reliance on fossil methane gas,  
3           that increase or perpetuate customer use of fossil methane gas, or that require customers  
4           to pay for distribution system investments and programs that unnecessarily continue or  
5           increase the potential for strandalone costs.

6   **Q. Does this conclude your direct testimony?**

7   **A. Yes.**

**BEFORE THE  
PUBLIC SERVICE COMMISSION OF  
THE DISTRICT OF COLUMBIA**

**IN THE MATTER OF THE APPLICATION OF )  
WASHINGTON GAS LIGHT COMPANY FOR )  
AUTHORITY TO INCREASE EXISTING )  
RATES AND CHARGES FOR GAS SERVICE )**

**Formal Case No. 1180**

**DECLARATION**

I declare under penalty of perjury that the foregoing testimony was prepared by me or under my direction and is true and correct to the best of my knowledge, information, and belief.

**Dated:** January 24, 2025

  
Karl R. Rábago

Sierra Club Exhibit (A)-1

Formal Case No. 1180

Witness Karl R. Rábago

**Karl R. Rábago**

**Rábago Energy LLC**

1350 Gaylord Street, Denver, Colorado 80206-2114

c/SMS: +1.512.968.7543 | e: karl@rabagoenergy.com | rabagoenergy.com

Nationally recognized leader and innovator in electricity and energy law, policy, and regulation. Experienced as a regulatory expert, utility executive, research and development manager, sustainability leader, senior government official, educator, and advocate. Law teaching experience at Pace University Elisabeth Haub School of Law, University of Houston Law Center, and U.S. Military Academy at West Point. Military veteran.

**Employment**

**RÁBAGO ENERGY LLC**

Principal: July 2012—Present. Consulting practice dedicated to providing business sustainability, expert witness, and regulatory advice and services to organizations in the clean and advanced energy sectors. Prepared and submitted testimony in more than 35 jurisdictions and 174 electricity and gas regulatory proceedings. Recognized national leader in development and implementation of innovative “Value of Solar” alternative to traditional net metering. Additional information at rabagoenergy.com.

- Director, Colorado Electric Transmission Authority (2022-present).
- Chairman of the Board, Center for Resource Solutions (1997-present). Past chair of the Green-e Governance Board.
- Director, Solar United Neighbors (2018-2024).
- Advisor, Commission Shift (2021-present).
- Director, Texas Solar Energy Society (2022-2024).

**PACE ENERGY AND CLIMATE CENTER, PACE UNIVERSITY ELISABETH HAUB SCHOOL OF LAW**

Senior Policy Advisor: September 2019—September 2020. Part-time advisor and staff member. Provided transitional expert witness, project management, and business development support on electric and gas regulatory and policy issues and activities.

Executive Director: May 2014—August 2019. Leader of a team of professional and technical experts and law students in energy and climate law, policy, and regulation. Secured funding for and managed execution of regulatory intervention, research, market development support, and advisory services. Taught Energy Law. Provided learning and development opportunities for law students. Additional activities:

- Director, Alliance for Clean Energy – New York (2018-2019).
- Director, Interstate Renewable Energy Council (IREC) (2012-2018).
- Co-Director and Principal Investigator, Northeast Solar Energy Market Coalition (2015-2017). The NESEMC was a US Department of Energy’s SunShot Initiative Solar Market Pathways project. Funded under a cooperative agreement between the US DOE and Pace University, the NESEMC worked to harmonize solar market policy and advance supportive policy and regulatory practices in the northeast United States.

## **Karl R. Rábago**

### **AUSTIN ENERGY – THE CITY OF AUSTIN, TEXAS**

Vice President, Distributed Energy Services: April 2009—June 2012. Executive in one of the largest public power electric utilities, serving more than one million people in central Texas. Responsible for management and oversight of energy efficiency, demand response, and conservation programs; low-income weatherization; distributed solar and other renewable energy technologies; green buildings program; key accounts relationships; electric vehicle infrastructure; and market research and product development. Executive sponsor of Austin Energy's participation in an innovative federally funded smart grid demonstration project led by the Pecan Street Project. Led teams that successfully secured over \$39 million in federal stimulus funds for energy efficiency, smart grid, and advanced electric transportation initiatives. Additional activities included:

- Director, Renewable Energy Markets Association. REMA is a trade association dedicated to maintaining and strengthening renewable energy markets in the United States.
- Member, Pedernales Electric Cooperative Member Advisory Board. Invited by the Board of Directors to sit on first-ever board to provide formal input and guidance on energy efficiency and renewable energy issues for the nation's largest electric cooperative.

### **THE AES CORPORATION**

Director, Government & Regulatory Affairs: June 2006—December 2008. Director, Global Regulatory Affairs, provided regulatory support and group management to AES's international electric utility operations on five continents. Managing Director, Standards and Practices, for Greenhouse Gas Services, LLC, a GE Energy and AES venture committed to generating and marketing voluntary market greenhouse gas credits. Government and regulatory affairs manager for AES Wind Generation. Managed a portfolio of regulatory and legislative initiatives to support wind energy market development in Texas, across the United States, and in many international markets.

### **JICARILLA APACHE NATION UTILITY AUTHORITY**

Director: 1998—2008. Located in New Mexico, the JANUA was an independent utility developing profitable and autonomous utility services that provided natural gas, water utility services, low-income housing, and energy planning for the Nation. Authored "First Steps" renewable energy and energy efficiency strategic plan with support from U.S. Department of Energy.

### **HOUSTON ADVANCED RESEARCH CENTER**

Group Director, Energy and Buildings Solutions: December 2003—May 2006. Leader of energy and building science staff at a mission-driven not-for-profit contract research organization based in The Woodlands, Texas. Responsible for developing, maintaining, and expanding on technology development, application, and commercialization support programmatic activities, including the Center for Fuel Cell Research and Applications; the Gulf Coast Combined Heat and Power Application Center; and the High-Performance Green Buildings Practice. Secured funding for major new initiative in carbon nanotechnology applications in the energy sector.

- President, Texas Renewable Energy Industries Association. As elected president of the statewide business association, led and managed successful efforts to secure and implement significant expansion of the state's renewable portfolio standard as well as other policy, regulatory, and market development activities.
- Director, Southwest Biofuels Initiative. Established the Initiative as an umbrella structure for multiple biofuels related projects.

## **Karl R. Rábago**

- Member, Committee to Study the Environmental Impacts of Wind Power, National Academies of Science National Research Council. The Committee was chartered by Congress and the Council on Environmental Quality to assess the impacts of wind power on the environment.
- Advisory Board Member, Environmental & Energy Law & Policy Journal, University of Houston Law Center.

### **CARGILL DOW LLC (NOW NATUREWORKS, LLC)**

Sustainability Alliances Leader: April 2002—December 2003. Integrated sustainability principles into all aspects of a ground-breaking bio-based polymer manufacturing venture. Responsible for maintaining, enhancing, and building relationships with stakeholders in the worldwide sustainability community, as well as managing corporate and external sustainability initiatives.

- Successfully completed Minnesota Management Institute at University of Minnesota Carlson School of Management, an alternative to an executive MBA program that surveyed fundamentals and new developments in finance, accounting, operations management, strategic planning, and human resource management.

### **ROCKY MOUNTAIN INSTITUTE**

Managing Director/Principal: October 1999–April 2002. Co-authored “Small Is Profitable,” a comprehensive analysis of the benefits of distributed energy resources. Provided consulting and advisory services to help business and government clients achieve sustainability through application and incorporation of Natural Capitalism principles.

- President of the Board, Texas Ratepayers Organization to Save Energy. Texas R.O.S.E. is a non-profit organization advocating low-income consumer issues and energy efficiency programs.
- Co-Founder and Chair of the Advisory Board, Renewable Energy Policy Project-Center for Renewable Energy and Sustainable Technology. REPP-CREST was a national non-profit research and internet services organization.

### **CH2M HILL**

Vice President, Energy, Environment and Systems Group: July 1998–August 1999. Responsible for providing consulting services to a wide range of energy-related businesses and organizations, and for creating new business opportunities in the energy industry for an established engineering and consulting firm. Completed comprehensive electric utility restructuring studies for Colorado and Alaska.

### **PLANERGY**

Vice President, New Energy Markets: January 1998–July 1998. Responsible for developing and managing new business opportunities for the energy services market. Provided consulting and advisory services to utility and energy service companies.

### **ENVIRONMENTAL DEFENSE FUND**

Energy Program Manager: March 1996–January 1998. Managed renewable energy, energy efficiency, and electric utility restructuring programs. Led regulatory intervention activities in Texas and California. In Texas, played a key role in crafting Deliberative Polling processes. Participated in national environmental and energy advocacy networks, including the Energy Advocates Network, the National Wind Coordinating Committee, the NCSL Advisory Committee on Energy, and the PV-COMPACT Coordinating Council. Frequently appeared before the Texas Legislature, Austin City Council, and regulatory commissions on electric restructuring issues.



## Karl R. Rábago

### UNITED STATES DEPARTMENT OF ENERGY

Deputy Assistant Secretary, Utility Technologies: January 1995–March 1996. Manager of the Department's programs in renewable energy technologies and systems, electric energy systems, energy efficiency, and integrated resource planning. Supervised technology research, development and deployment activities in photovoltaics, wind energy, geothermal energy, solar thermal energy, biomass energy, high-temperature superconductivity, transmission and distribution, hydrogen, and electric and magnetic fields. Managed, coordinated, and developed international agreements. Supervised development and deployment support activities at national laboratories. Developed, advocated, and managed a Congressional budget appropriation of approximately \$300 million.

### STATE OF TEXAS

Commissioner, Public Utility Commission of Texas. May 1992–December 1994. Appointed by Governor Ann W. Richards. Regulated electric and telephone utilities in Texas. Co-chair and organizer of the Texas Sustainable Energy Development Council. Vice-Chair of the National Association of Regulatory Utility Commissioners (NARUC) Committee on Energy Conservation. Member and co-creator of the Photovoltaic Collaborative Market Project to Accelerate Commercial Technology (PV-COMPACT).

### LAW TEACHING

**Professor for a Designated Service:** Pace University Elisabeth Haub School of Law, 2014-2019. Non-tenured member of faculty. Taught Energy Law. Supervised a student intern practice.

**Associate Professor of Law:** University of Houston Law Center, 1990–1992. Full time, tenure track member of faculty. Courses taught: Criminal Law, Environmental Law, Criminal Procedure, Environmental Crimes Seminar, Wildlife Protection Law.

**Assistant Professor:** United States Military Academy, West Point, New York, 1988–1990. Member of the faculty in the Department of Law. Honorably discharged in August 1990, as Major in the Regular Army. Courses taught: Constitutional Law, Military Law, and Environmental Law Seminar.

### LITIGATION

Trial Defense Attorney and Prosecutor, U.S. Army Judge Advocate General's Corps, Fort Polk, Louisiana, January 1985–July 1987. Assigned to Trial Defense Service and Office of the Staff Judge Advocate.

### NON-LEGAL MILITARY SERVICE

Armored Cavalry Officer, 2d Squadron 9<sup>th</sup> Armored Cavalry, Fort Stewart, Georgia, May 1978–August 1981. Served as Logistics Staff Officer (S-4). Managed budget, supplies, fuel, ammunition, and other support for an Armored Cavalry Squadron. Served as Support Platoon Leader for the Squadron (logistical support), and as line Platoon Leader in an Armored Cavalry Troop. Graduate of Airborne and Ranger Schools. Special training in Air Mobilization Planning and Nuclear, Biological and Chemical Warfare.

## **Karl R. Rábago**

### **Formal Education**

**LL.M., Environmental Law, Pace University School of Law, 1990:** Curriculum designed to provide breadth and depth in study of theoretical and practical aspects of environmental law. Courses included: International and Comparative Environmental Law, Conservation Law, Land Use Law, Seminar in Electric Utility Regulation, Scientific and Technical Issues Affecting Environmental Law, Environmental Regulation of Real Estate, Hazardous Wastes Law. Individual research with Hudson Riverkeeper Fund, Garrison, New York, on federal regulation of cooling water intake structures for electric power plants.

**LL.M., Military Law, U.S. Army Judge Advocate General's School, 1988:** Curriculum designed to prepare Judge Advocates for senior level staff service. Courses included: Administrative Law, Defensive Federal Litigation, Government Information Practices, Advanced Federal Litigation, Federal Tort Claims Act Seminar, Legal Writing and Communications, Comparative International Law.

**J.D. with Honors, University of Texas School of Law, 1984:** Attended law school under the U.S. Army Funded Legal Education Program, a fully funded scholarship awarded to 25 or fewer officers each year. Served as Editor-in-Chief (1983–84); Articles Editor (1982–83); Member (1982) of the Review of Litigation. Moot Court, Mock Trial, Board of Advocates. Summer internship at Staff Judge Advocate's offices. Prosecuted first cases prior to entering law school.

**B.B.A., Business Management, Texas A&M University, 1977:** ROTC Scholarship (3–yr). Member: Corps of Cadets, Parson's Mounted Cavalry, Wings & Sabers Scholarship Society, Rudder's Rangers, Town Hall Society, Freshman Honor Society, Alpha Phi Omega service fraternity.

## Karl R. Rábago

### Selected Publications

*The Future of Decentralized Electricity Distribution Networks: Ch. 14 – Performance-Based Regulation to Drive Transformation and Encourage DER Market Growth*, contributing co-author with Jesse Hitchcock, Elsevier (2023).

*Climate Change Law: An Introduction*, contributing author (Introduction to Energy Law), Elgar (2021).

*Distributed Generation Law*, contributing author, American Bar Association Environment, Energy, and Resources Section (August 2020)

*National Standard Practice Manual for Benefit-Cost Analysis of Distributed Energy Resources*, contributing author, National Energy Screening Project (August 2020)

*Achieving 100% Renewables: Supply-Shaping through Curtailment*, with Richard Perez, Marc Perez, and Morgan Putnam, PV Tech Power, Vol. 19 (May 2019).

*A Radical Idea to Get a High-Renewable Electric Grid: Build Way More Solar and Wind than Needed*, with Richard Perez, The Conversation, online at <http://bit.ly/2YjnM15> (May 29, 2019).

*Reversing Energy System Inequity: Urgency and Opportunity During the Clean Energy Transition*, with John Howat, John Colgan, Wendy Gerlitz, and Melanie Santiago-Mosier, National Consumer Law Center, online at [www.nclc.org](http://www.nclc.org) (Feb. 26, 2019).

*Revisiting Bonbright's Principles of Public Utility Rates in a DER World*, with Radina Valova, The Electricity Journal, Vol. 31, Issue 8, pp. 9-13 (Oct. 2018).

*Achieving very high PV penetration – The need for an effective electricity remuneration framework and a central role for grid operators*, with Richard Perez (corresponding author), Energy Policy, Vol. 96, pp. 27-35 (2016).

*The Net Metering Riddle*, Electricity Policy.com, April 2016.

*The Clean Power Plan*, Power Engineering Magazine (invited editorial), Vol. 119, Issue 12 (Dec. 2, 2015)

*The 'Sharing Utility:' Enabling & Rewarding Utility Performance, Service & Value in a Distributed Energy Age*, co-author, 51<sup>st</sup> State Initiative, Solar Electric Power Association (Feb. 27, 2015)

*Rethinking the Grid: Encouraging Distributed Generation*, Building Energy Magazine, Vol. 33, No. 1 Northeast Sustainable Energy Association (Spring 2015)

*The Value of Solar Tariff: Net Metering 2.0*, The ICER Chronicle, Ed. 1, p. 46 [International Confederation of Energy Regulators] (December 2013)

*A Regulator's Guidebook: Calculating the Benefits and Costs of Distributed Solar Generation*, co-author with Jason Keyes, Interstate Renewable Energy Council (October 2013)

*The 'Value of Solar' Rate: Designing an Improved Residential Solar Tariff*, Solar Industry, Vol. 6, No. 1 (Feb. 2013)

*Jicarilla Apache Nation Utility Authority Strategic Plan for Energy Efficiency and Renewable Energy Development*, lead author & project manager, U.S. Department of Energy First Steps Toward Developing Renewable Energy and Energy Efficiency on Tribal Lands Program (2008)

*A Review of Barriers to Biofuels Market Development in the United States*, 2 Environmental & Energy Law & Policy Journal 179 (2008)

*A Strategy for Developing Stationary Biodiesel Generation*, Cumberland Law Review, Vol. 36, p.461 (2006)

**Karl R. Rábago**

*Evaluating Fuel Cell Performance through Industry Collaboration*, co-author, Fuel Cell Magazine (2005)

*Applications of Life Cycle Assessment to NatureWorks™ Polylactide (PLA) Production*, co-author, Polymer Degradation and Stability 80, 403-19 (2003)

*An Energy Resource Investment Strategy for the City of San Francisco: Scenario Analysis of Alternative Electric Resource Options*, contributing author, Prepared for the San Francisco Public Utilities Commission, Rocky Mountain Institute (2002)

*Small Is Profitable: The Hidden Economic Benefits of Making Electrical Resources the Right Size*, co-author, Rocky Mountain Institute (2002)

*Socio-Economic and Legal Issues Related to an Evaluation of the Regulatory Structure of the Retail Electric Industry in the State of Colorado*, with Thomas E. Feiler, Colorado Public Utilities Commission and Colorado Electricity Advisory Panel (April 1, 1999)

*Study of Electric Utility Restructuring in Alaska*, with Thomas E. Feiler, Legislative Joint Committee on electric Restructuring and the Alaska Public Utilities Commission (April 1, 1999)

*New Markets and New Opportunities: Competition in the Electric Industry Opens the Way for Renewables and Empowers Customers*, EEBA Excellence (Journal of the Energy Efficient Building Association) (Summer 1998)

*Building a Better Future: Why Public Support for Renewable Energy Makes Sense*, Spectrum: The Journal of State Government (Spring 1998)

*The Green-e Program: An Opportunity for Customers*, with Ryan Wiser and Jan Hamrin, Electricity Journal, Vol. 11, No. 1 (January/February 1998)

*Being Virtual: Beyond Restructuring and How We Get There*, Proceedings of the First Symposium on the Virtual Utility, Kluwer Press (1997)

*Information Technology*, Public Utilities Fortnightly (March 15, 1996)

*Better Decisions with Better Information: The Promise of GIS*, with James P. Spiers, Public Utilities Fortnightly (November 1, 1993)

*The Regulatory Environment for Utility Energy Efficiency Programs*, Proceedings of the Meeting on the Efficient Use of Electric Energy, Inter-American Development Bank (May 1993)

*An Alternative Framework for Low-Income Electric Ratepayer Services*, with Danielle Jaussaud and Stephen Benenson, Proceedings of the Fourth National Conference on Integrated Resource Planning, National Association of Regulatory Utility Commissioners (September 1992)

*What Comes Out Must Go In: The Federal Non-Regulation of Cooling Water Intakes Under Section 316 of the Clean Water Act*, Harvard Environmental Law Review, Vol. 16, p. 429 (1992)

*Least Cost Electricity for Texas*, State Bar of Texas Environmental Law Journal, Vol. 22, p. 93 (1992)

*Environmental Costs of Electricity*, Pace University School of Law, Contributor–Impingement and Entrainment Impacts, Oceana Publications, Inc. (1990)

Sierra Club Exhibit (A)-2

Formal Case No. 1180

Witness Karl R. Rábago

**Testimony Submitted by Karl R. Rábago**

**(as of 17 January 2025)**

<b>Date</b>	<b>Proceeding</b>	<b>Case/Docket #</b>	<b>On Behalf Of:</b>
Dec. 21, 2012	VA Electric & Power Special Solar Power Tariff	Virginia State Corporation Commission Case # PUE-2012-00064	Southern Environmental Law Center
May 10, 2013	Georgia Power Company 2013 IRP	Georgia Public Service Commission Docket # 36498	Georgia Solar Energy Industries Association
Jun. 23, 2013	Louisiana Public Service Commission Re-examination of Net Metering Rules	Louisiana Public Service Commission Docket # R-31417	Gulf States Solar Energy Industries Association
Aug. 29, 2013	DTE (Detroit Edison) 2013 Renewable Energy Plan Review (Michigan)	Michigan Public Utilities Commission Case # U-17302	Environmental Law and Policy Center
Sep. 5, 2013	CE (Consumers Energy) 2013 Renewable Energy Plan Review (Michigan)	Michigan Public Utilities Commission Case # U-17301	Environmental Law and Policy Center
Sep. 27, 2013	North Carolina Utilities Commission 2012 Avoided Cost Case	North Carolina Utilities Commission Docket # E-100, Sub. 136	North Carolina Sustainable Energy Association
Oct. 18, 2013	Georgia Power Company 2013 Rate Case	Georgia Public Service Commission Docket # 36989	Georgia Solar Energy Industries Association
Nov. 4, 2013	PEPCO Rate Case (District of Columbia)	District of Columbia Public Service Commission Formal Case # 1103	Grid 2.0 Working Group & Sierra Club of Washington, D.C.
Apr. 24, 2014	Dominion Virginia Electric Power 2013 IRP	Virginia State Corporation Commission Case # PUE-2013-00088	Environmental Respondents
Apr. 25, 2014	North Carolina Utilities Commission 2014 Avoided Cost Case - Direct	North Carolina Utilities Commission Docket # E-100, Sub. 140	Southern Alliance for Clean Energy
May 7, 2014	Arizona Corporation Commission Investigation on the Value and Cost of Distributed Generation	Arizona Corporation Commission Docket # E-00000J-14-0023	Rábago Energy LLC (invited presentation and workshop participation)
Jun. 2, 2014	North Carolina Utilities Commission 2014 Avoided Cost Case – Response (Corrected)	North Carolina Utilities Commission Docket # E-100, Sub. 140	Southern Alliance for Clean Energy
Jun. 20, 2014	North Carolina Utilities Commission 2014 Avoided Cost Case – Rebuttal	North Carolina Utilities Commission Docket # E-100, Sub. 140	Southern Alliance for Clean Energy

**Testimony Submitted by Karl R. Rábago**

**(as of 17 January 2025)**

Jul. 23, 2014	Florida Energy Efficiency and Conservation Act, Goal Setting – FPL, Duke, TECO, Gulf	Florida Public Service Commission Docket # 130199-EI, 130200-EI, 130201-EI, 130202-EI	Southern Alliance for Clean Energy
Sep. 19, 2014	Ameren Missouri's Application for Authorization to Suspend Payment of Solar Rebates	Missouri Public Service Commission File No. ET-2014-0350, Tariff # YE-2014-0494	Missouri Solar Energy Industries Association
Aug. 6, 2014	Appalachian Power Company 2014 Biennial Rate Review	Virginia State Corporation Commission Case # PUE-2014-00026	Southern Environmental Law Center (Environmental Respondents)
Aug. 13, 2014	Wisconsin Public Service Corp. 2014 Rate Application	Wisconsin Public Service Commission Docket # 6690-UR-123	RENEW Wisconsin and Environmental Law & Policy Center
Aug. 28, 2014	WE Energies 2014 Rate Application	Wisconsin Public Service Commission Docket # 05-UR-107	RENEW Wisconsin and Environmental Law & Policy Center
Sep. 18, 2014	Madison Gas & Electric Company 2014 Rate Application	Wisconsin Public Service Commission Docket # 3720-UR-120	RENEW Wisconsin and Environmental Law & Policy Center
Sep. 29, 2014	SOLAR, LLC v. Missouri Public Service Commission	Missouri District Court Case # 14AC-CC00316	SOLAR, LLC
Jan. 28, 2016 (date of CPUC order)	Order Instituting Rulemaking to Develop a Successor to Existing Net Energy Metering Tariffs, etc.	California Public Utilities Commission Rulemaking 14-07-002	The Utility Reform Network (TURN)
Mar. 20, 2015	Orange and Rockland Utilities 2015 Rate Application	New York Public Service Commission Case # 14-E-0493	Pace Energy and Climate Center
May 22, 2015	DTE Electric Company Rate Application	Michigan Public Service Commission Case # U-17767	Michigan Environmental Council, NRDC, Sierra Club, and ELPC
Jul. 20, 2015	Hawaiian Electric Company and NextEra Application for Change of Control	Hawai'i Public Utilities Commission Docket # 2015-0022	Hawai'i Department of Business, Economic Development, and Tourism
Sep. 2, 2015	Wisconsin Public Service Company Rate Application	Wisconsin Public Service Commission Case # 6690-UR-124	ELPC
Sep. 15, 2015	Dominion Virginia Electric Power 2015 IRP	Virginia State Corporation Commission Case # PUE-2015-00035	Environmental Respondents
Sep. 16, 2015	NYSEG & RGE Rate Cases	New York Public Service Commission Cases 15-E-0283, -0285	Pace Energy and Climate Center

**Testimony Submitted by Karl R. Rábago**

**(as of 17 January 2025)**

Oct. 14, 2015	Florida Power & Light Application for CCPN for Lake Okeechobee Plant	Florida Public Service Commission Case 150196-EI	Environmental Confederation of Southwest Florida
Oct. 27, 2015	Appalachian Power Company 2015 IRP	Virginia State Corporation Commission Case # PUE-2015-00036	Environmental Respondents
Nov. 23, 2015	Narragansett Electric Power/National Grid Rate Design Application	Rhode Island Public Utilities Commission Docket No. 4568	Wind Energy Development, LLC
Dec. 8, 2015	State of West Virginia, et al., v. U.S. EPA, et al.	U.S. Court of Appeals for the District of Columbia Circuit Case No. 15-1363 and Consolidated Cases	Declaration in Support of Environmental and Public Health Intervenor in Support of Movant Respondent-Intervenors' Responses in Opposition to Motions for Stay
Dec. 28, 2015	Ohio Power/AEP Affiliate PPA Application	Public Utilities Commission of Ohio Case No. 14-1693-EL-RDR	Environmental Law and Policy Center
Jan. 19, 2016	Ohio Edison Company, Cleveland Electric Illuminating Company, and Toledo Edison Company Application for Electric Security Plan (FirstEnergy Affiliate PPA)	Public Utilities Commission of Ohio Case No. 14-1297-EL-SSO	Environmental Law and Policy Center
Jan. 22, 2016	Northern Indiana Public Service Company (NIPSCO) Rate Case	Indiana Utility Regulatory Commission Cause No. 44688	Citizens Action Coalition and Environmental Law and Policy Center
Mar. 18, 2016	Northern Indiana Public Service Company (NIPSCO) Rate Case – Settlement Testimony	Indiana Utility Regulatory Commission Cause No. 44688	Joint Intervenor – Citizens Action Coalition and Environmental Law and Policy Center
Mar. 18, 2016	Comments on Pilot Rate Proposals by MidAmerican and Alliant	Iowa Utility Board NOI-2014-0001	Environmental Law and Policy Center
May 27, 2016	Consolidated Edison of New York Rate Case	New York Public Service Commission Case No. 16-E-0060	Pace Energy and Climate Center
Jun. 21, 2016	Federal Trade Commission: Workshop on Competition and Consumer Protection Issues in Solar Energy - Invited workshop presentation	Federal Trade Commission - Solar Electricity Project No. P161200	Pace Energy and Climate Center
Aug. 17, 2016	Dominion Virginia Electric Power 2016 IRP	Virginia State Corporation Commission Case # PUE-2016-00049	Environmental Respondents



**Testimony Submitted by Karl R. Rábago**

**(as of 17 January 2025)**

Sep. 13, 2016	Appalachian Power Company 2016 IRP	Virginia State Corporation Commission Case # PUE-2016-00050	Environmental Respondents
Oct. 27, 2016	Consumers Energy PURPA Compliance Filing	Michigan Public Service Commission Case No. U-18090	Environmental Law & Policy Center, “Joint Intervenors”
Oct. 28, 2016	Delmarva, PEPCO (PHI) Utility Transformation Filing – Review of Filing & Utilities of the Future Whitepaper	Maryland Public Service Commission Case PC 44	Public Interest Advocates
Dec. 1, 2016	DTE Electric Company PURPA Compliance Filing	Michigan Public Service Commission Case No. U-18091	Environmental Law & Policy Center, “Joint Intervenors”
Dec. 16, 2016	Development of New Alternative Net Metering Tariffs - Rebuttal of Unitil Testimony	New Hampshire Public Utilities Commission Docket No. DE 16-576	New Hampshire Sustainable Energy Association (“NHSEA”)
Jan. 13, 2017	Gulf Power Company Rate Case	Florida Public Service Commission Docket No. 160186-EI	Earthjustice, Southern Alliance for Clean Energy, League of Women Voters-Florida
Jan. 13, 2017	Alpena Power Company PURPA Compliance Filing	Michigan Public Service Commission Case No. U-18089	Environmental Law & Policy Center, “Joint Intervenors”
Jan. 13, 2017	Indiana Michigan Power Company PURPA Compliance Filing	Michigan Public Service Commission Case No. U-18092	Environmental Law & Policy Center, “Joint Intervenors”
Jan. 13, 2017	Northern States Power Company PURPA Compliance Filing	Michigan Public Service Commission Case No. U-18093	Environmental Law & Policy Center, “Joint Intervenors”
Jan. 13, 2017	Upper Peninsula Power Company PURPA Compliance Filing	Michigan Public Service Commission Case No. U-18094	Environmental Law & Policy Center, “Joint Intervenors”
Mar. 10, 2017	Eversource Energy Grid Modernization Plan	Massachusetts Department of Public Utilities Case No. 15-122/15-123	Cape Light Compact
Apr. 27, 2017	Eversource Rate Case & Grid Modernization Investments	Massachusetts Department of Public Utilities Case No. 17-05	Cape Light Compact
May 2, 2017	AEP Ohio Power Electric Security Plan	Public Utilities Commission of Ohio Case No. 16-1852-EL-SSO	Environmental Law & Policy Center
Jun. 2, 2017	Vectren Energy TDSIC Plan	Indiana Utility Regulatory Commission Cause No. 44910	Citizens Action Coalition & Valley Watch
Jul. 26, 2017	Vectren Energy 2018-2020 Energy Efficiency Plan	Indiana Utility Regulatory Commission Cause No. 44927	Citizens Action Coalition

**Testimony Submitted by Karl R. Rábago**

**(as of 17 January 2025)**

Jul. 28, 2017	Vectren Energy 2016-2017 Energy Efficiency Plan	Indiana Utility Regulatory Commission Cause No. 44645	Citizens Action Coalition
Aug. 1, 2017	Interstate Power & Light (Alliant) 2017 Rate Application	Iowa Utilities Board Docket No. RPU-2017-0001	Environmental Law & Policy Center, Iowa Environmental Council, Natural Resources Defense Council, and Solar Energy Industries Assoc.
Aug. 11, 2017	Dominion Virginia Electric Power 2017 IRP	Virginia State Corporation Commission Case # PUR-2017-00051	Environmental Respondents
Aug. 18, 2017	Appalachian Power Company 2017 IRP	Virginia State Corporation Commission Case # PUR-2017-00045	Environmental Respondents
Aug. 23, 2017	Pennsylvania Solar Future Project	Pennsylvania Dept. of Environmental Protection - Alternative Ratemaking Webinar	Pace Energy and Climate Center
Aug. 25, 2017	Niagara Mohawk Power Co. d/b/a National Grid Rate Case	New York Public Service Commission Case # 17-E-0238, 17-G-0239	Pace Energy and Climate Center
Sep. 15, 2017	Niagara Mohawk Power Co. d/b/a National Grid Rate Case	New York Public Service Commission Case # 17-E-0238, 17-G-0239	Pace Energy and Climate Center
Oct. 20, 2017	Missouri PSC Working Case to Explore Emerging Issues in Utility Regulation	Missouri Public Service Commission File No. EW-2017-0245	Renew Missouri
Nov. 21, 2017	Central Hudson Gas & Electric Co. Electric and Gas Rates Cases	New York Public Service Commission Case # 17-E-0459, -0460	Pace Energy and Climate Center
Jan. 16, 2018	Great Plains Energy, Inc. Merger with Westar Energy, Inc.	Missouri Public Service Commission Case # EM-2018-0012	Renew Missouri Advocates
Jan. 19, 2018	U.S. House of Representatives, Energy and Commerce Committee	Hearing on “The PURPA Modernization Act of 2017,” H.R. 4476	Rábago Energy LLC
Jan. 29, 2018	Joint Petition of Electric Distribution Companies for Approval of a Model SMART Tariff	Massachusetts Department of Public Utilities Case No. 17-140	Boston Community Capital Solar Energy Advantage Inc. (Jointly authored with Sheryl Musgrove)
Feb. 21, 2018	Joint Petition of Electric Distribution Companies for Approval of a Model SMART Tariff	Massachusetts Department of Public Utilities Case No. 17-140 - Surrebuttal	Boston Community Capital Solar Energy Advantage Inc. (Jointly authored with Sheryl Musgrove)

**Testimony Submitted by Karl R. Rábago**

**(as of 17 January 2025)**

Apr. 6, 2018	Narragansett Electric Co., d/b/a National Grid Rate Case Filing	Rhode Island Public Utilities Commission Docket No. 4770	New Energy Rhode Island (“NERI”)
Apr. 25, 2018	Narragansett Electric Co., d/b/a National Grid Power Sector Transformation Plan	Rhode Island Public Utilities Commission Docket No. 4780	New Energy Rhode Island (“NERI”)
Apr. 26, 2018	U.S. EPA Proposed Repeal of Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units, 82 Fed. Reg. 48,035 (Oct. 16, 2017) – “Clean Power Plan”	U.S. Environmental Protection Agency Docket No. EPA-HQ-OAR-2016-0592	Karl R. Rábago
May 25, 2018	Orange & Rockland Utilities, Inc. Rate Case Filing	New York Public Service Commission Case Nos. 18-E-0067, 18-G-0068	Pace Energy and Climate Center
Jun. 15, 2018	Orange & Rockland Utilities, Inc. Rate Case Filing	New York Public Service Commission Case Nos. 18-E-0067, 18-G-0068 – Rebuttal Testimony	Pace Energy and Climate Center
Aug. 10, 2018	Dominion Virginia Electric Power 2018 IRP	Virginia State Corporation Commission Case # PUR-2018-00065	Environmental Respondents
Sep. 20, 2018	Consumers Energy Company Rate Case	Michigan Public Service Commission Case No. U-20134	Environmental Law & Policy Center
Sep. 27, 2018	Potomac Electric Power Co. Notice to Construct Two 230 kV Underground Circuits	District of Columbia Public Service Commission Formal Case No. 1144	Solar United Neighbors of D.C.
Sep. 28, 2019	Arkansas Public Service Commission Investigation of Policies Related to Distributed Energy Resources	Arkansas Public Service Commission Docket No. 16-028-U	Arkansas Audubon Society & Arkansas Advanced Energy Association
Nov. 7, 2018	DTE Detroit Edison Rate Case	Michigan Public Service Commission Case No. U-20162	Natural Resources Defense Council, Michigan Environmental Council, Sierra Club
Mar. 26, 2019	Guam Power Authority Petition to Modify Net Metering	Guam Public Utilities Commission Docket GPA 19-04	Micronesia Renewable Energy, Inc.
Apr. 4, 2019	Community Power Network & League of Women Voters of Florida v. JEA	Circuit Court Duval County of Florida Case No. 2018-CA-002497 Div: CV-D	Earthjustice
Apr. 16, 2019	Dominion Virginia Electric Power 2018 IRP – Compliance Filing	Virginia State Corporation Commission Case # PUR-2018-00065	Environmental Respondents

**Testimony Submitted by Karl R. Rábago**

**(as of 17 January 2025)**

Apr. 25, 2019	Georgia Power 2019 IRP	Georgia Public Service Commission Docket No. 42310	GSEA & GSEIA
May 10, 2019	NV Energy NV GreenEnergy 2.0 Rider	Nevada Public Utilities Commission Docket Nos. 18-11015, 18-11016	Vote Solar
May 24, 2019	Consolidated Edison of New York Electric and Gas Rate Cases – Misc. Issues	New York Public Service Commission Case Nos. 19-E-0065, 19-G-0066	Pace Energy and Climate Center
May 24, 2019	Consolidated Edison of New York Electric and Gas Rate Cases – Low- and Moderate-Income Panel	New York Public Service Commission Case Nos. 19-E-0065, 19-G-0066	Pace Energy and Climate Center
May 30, 2019	Connecticut DEEP Shared Clean Energy Facility Program Proposal	Connecticut Department of Energy and Environmental Protection Docket No. 19-07-01	Connecticut Fund for the Environment
Jun. 3, 2019	New Orleans City Council Rulemaking to Establish Renewable Portfolio Standards	New Orleans City Council Docket No. UD-19-01	National Audubon Society and Audubon Louisiana
Jun. 14, 2019	Consolidated Edison of New York Electric and Gas Rate Cases – Rebuttal Testimony	New York Public Service Commission Case Nos. 19-E-0065, 19-G-0066	Pace Energy and Climate Center
Jun. 24, 2019	Program to Encourage Clean Energy in Westchester County Pursuant to Public Service law Section 74-a; Staff Investigation into a Moratorium on New Natural Gas Services in the Consolidated Edison Company of New York, Inc. Service Territory	New York Public Service Commission Case Nos. 19-M-0265, 19-G-0080	Earthjustice and Pace Energy and Climate Center
Jul. 12, 2019	Application of Virginia Electric and Power Company for the Determination of the Fair Rate of Return on Common Equity	Virginia State Corporation Commission Case # PUR-2019-00050	Virginia Poverty Law Center
Jul. 15, 2019	New Orleans City Council Rulemaking to Establish Renewable Portfolio Standards – Reply Comments	New Orleans City Council Docket No. UD-19-01	National Audubon Society and Audubon Louisiana
Aug. 1, 2019	Interstate Power and Light Company – General Rate Case	Iowa Utilities Board Docket No. RPU-2019-0001	Environmental Law & Policy Center and Iowa Environmental Council
Aug. 19, 2019	Consolidated Edison of New York Electric and Gas Rate Cases – Surrebuttal	New York Public Service Commission Case Nos. 19-E-0065, 19-G-0066	Pace Energy and Climate Center

**Testimony Submitted by Karl R. Rábago**

**(as of 17 January 2025)**

Aug. 21, 2019	Connecticut Department of Energy and Environmental Protection and Public Utility Regulatory Authority Joint Proceeding on the Value of Distributed Energy Resources - Comments	Connecticut Department of Energy and Environmental Protection/Public Utility Regulatory Authority Docket No. 19-06-29	Connecticut Fund for the Environment and Save Our Sound
Sep. 10, 2019	Interstate Power and Light Company – General Rate Case - Rebuttal	Iowa Utilities Board Docket No. RPU-2019-0001	Environmental Law & Policy Center and Iowa Environmental Council
Sep. 18, 2019	Connecticut Department of Energy and Environmental Protection and Public Utility Regulatory Authority Joint Proceeding on the Value of Distributed Energy Resources – Comments and Response to Draft Study Outline	Connecticut Department of Energy and Environmental Protection/Public Utility Regulatory Authority Docket No. 19-06-29	Connecticut Fund for the Environment, Save Our Sound, E4theFuture, NE Clean Energy Council, NE Energy Efficiency Partnership, and Acadia Center
Sep. 20, 2019	Connecticut Department of Energy and Environmental Protection and Public Utility Regulatory Authority Joint Proceeding on the Value of Distributed Energy Resources – Participation in Technical Workshop 1	Connecticut Department of Energy and Environmental Protection/Public Utility Regulatory Authority Docket No. 19-06-29 <a href="http://www.ctn.state.ct.us/ctnplayer.asp?odID=16715">http://www.ctn.state.ct.us/ctnplayer.asp?odID=16715</a>	Connecticut Fund for the Environment and Save Our Sound
Oct. 4, 2019	Connecticut Department of Energy and Environmental Protection and Public Utility Regulatory Authority Joint Proceeding on the Value of Distributed Energy Resources – Participation in Technical Workshop 2	Connecticut Department of Energy and Environmental Protection/Public Utility Regulatory Authority Docket No. 19-06-29 <a href="http://www.ctn.state.ct.us/ctnplayer.asp?odID=16766">http://www.ctn.state.ct.us/ctnplayer.asp?odID=16766</a>	Connecticut Fund for the Environment and Save Our Sound
Oct. 15, 2019	Electronic Consideration of the Implementation of the Net Metering Act (KY SB 100)	Kentucky Public Service Commission Case No. 2019-00256	Kentuckians for the Commonwealth & Mountain Association for Community Economic Development
Oct. 15, 2019	New Orleans City Council Rulemaking to Establish Renewable Portfolio Standards – Comments on City Council Utility Advisors’ Report	New Orleans City Council Docket No. UD-19-01	National Audubon Society and Audubon Louisiana, Vote Solar, 350 New Orleans, Alliance for Clean Energy, PosiGen, and Sierra Club
Oct. 17, 2019	Indiana Michigan Power Co. General Rate Case	Michigan Public Service Company Case No. U-20359	Environmental Law & Policy Center, The Ecology Center, the Solar Energy Industries Association, and Vote Solar
Dec. 4, 2019	Alabama Power Company Petition for Certificate of Convenience and Necessity	Alabama Public Service Commission Docket No. 32953	Energy Alabama and Gasp, Inc.

**Testimony Submitted by Karl R. Rábago**

**(as of 17 January 2025)**

Dec. 5, 2019	In the Matter of Net Metering and the Implementation of Act 827 of 2015	Arkansas Public Service Commission Docket No. 16-027-R	National Audubon Society and Arkansas Advanced Energy Association
Dec. 6, 2019	Proposed Revisions to Vermont Public Utility Commission Rule 5.100	Vermont Public Utility Commission Case No. 19-0855-RULE	Renewable Energy Vermont (“REV”)
Jan. 15, 2020	Puget Sound Energy General Rate Case	Washington Utilities and Transportation Commission Docket Nos. UE-190529 & UG-190530	Puget Sound Energy
Feb. 11, 2020	Application of Entergy Arkansas, LLC for a Proposed Tariff Amendment: Solar Energy Purchase Option – Direct Testimony	Arkansas Public Service Commission Docket No. 19-042-TF	Arkansas Advanced Energy Association
Mar. 17, 2020	Application of Entergy Arkansas, LLC for a Proposed Tariff Amendment: Solar Energy Purchase Option – Surrebuttal Testimony	Arkansas Public Service Commission Docket No. 19-042-TF	Arkansas Advanced Energy Association
Jun. 16, 2020	PECO Energy Default Supply Plan V – Direct Testimony	Pennsylvania Public Utility Commission Docket No. P-2020-3019290	Environmental Respondents / Earthjustice
Jun. 24, 2020	Consumers Energy Company General Rate Case – Direct Testimony	Michigan Public Service Commission Case No. U-20697	Joint Clean Energy Organizations / Environmental Law & Policy Center
Jul. 14, 2020	Consumers Energy Company General Rate Case – Rebuttal Testimony	Michigan Public Service Commission Case No. U-20697	Joint Clean Energy Organizations / Environmental Law & Policy Center
Jul. 23, 2020	PECO Energy Default Supply Plan V – Surrebuttal Testimony	Pennsylvania Public Utility Commission Docket No. P-2020-3019290	Environmental Stakeholders / Earthjustice
Sep. 15, 2020	Dominion Virginia Electric Power 2020 IRP – Direct Testimony	Virginia State Corporation Commission Case # PUR-2020-00035	Environmental Respondents
Sep. 18, 2020	Avoided Cost Proceeding for Georgia Power – Direct Testimony	Georgia Public Service Commission Docket No. 4822	Georgia Solar Energy Industries Association, Inc.
Sep. 29, 2020	Madison Gas and Electric – General Rate Case – Affidavit in Opposition to Electric Rates Settlement	Wisconsin Public Service Commission Docket No. 3270-UR-123	Sierra Club
Sep. 30, 2020	Madison Gas and Electric – General Rate Case – Gas Rates	Wisconsin Public Service Commission Docket No. 3270-UR-123	Sierra Club
Oct. 2, 2020	Duke Energy Florida Petition for Approval of Clean Energy Connect Program	Florida Public Service Commission Docket No. 20200176-EI	League of United Latin American Citizens of Florida

**Testimony Submitted by Karl R. Rábago**

**(as of 17 January 2025)**

Oct. 2, 2020	Ameren Illinois – Investigation re: Calculation of Distributed Generation Rebates	Illinois Commerce Commission Docket No. 20-0389	Joint Solar Parties
Dec. 9, 2020	Arkansas – In the Matter of a Rulemaking to Adopt an Evaluation, Measurement, and Verification Protocol and Propose M&V Amendments to the Commission’s Rules for Conservation and Energy Efficiency Programs; In the Matter of the Continuation, Expansion, and Enhancement of Public Utility Energy Efficiency Programs in Arkansas	Arkansas Public Service Commission Docket Nos. 10-100-R, 13-002-U	Arkansas Advanced Energy Association
Dec. 22, 2020	Appalachian Power Company 2020 Virginia Clean Economy Act Compliance Plan	Virginia State Corporation Commission Case No. PUR-2020-00135	Environmental Respondent
Jan. 4, 2021	Dominion Virginia Electric Power Company Clean Economy Compliance Plan	Virginia State Corporation Commission Case No. PUR-2020-00134	Environmental Respondent
Feb. 5, 2021	Ameren Illinois – Investigation re: Calculation of Distributed Generation Rebates - Rebuttal	Illinois Commerce Commission Docket No. 20-0389	Joint Solar Parties
Feb. 15, 2021	Kentucky Power Company General Rate Case	Kentucky Public Service Commission Case No. 2020-00174	Joint Intervenors – Mountain Association, Kentuckians for the Commonwealth, Kentucky Solar Energy Society
Mar. 2, 2021	Dominion Virginia Electric Power Company Rider RGGI Proposal	Virginia State Corporation Commission Case No. PUR-2020-00169	Environmental Respondent
Mar. 5, 2021	Kentucky Utilities Company and Louisville Gas and Electric Company General Rate Cases	Kentucky Public Service Commission Case Nos. 2020-00349, 2020-00350	Joint Intervenors – Mountain Association, Kentuckians for the Commonwealth, Kentucky Solar Energy Society
Apr. 5, 2021	Docket to Review the Efficacy and Fairness of the Net Metering and Interconnection Rules – Comments	Mississippi Public Service Commission Docket No. 2021-AD-19	Entegrity Energy Partners, LLC & Audubon Delta / National Audubon Society
Apr. 13, 2021	Petition of Guam Power Authority for Creation of a New Energy Storage Rate – Comments of Micronesia Renewable Energy, Inc.	Guam Public Utilities Commission Docket No. 20-09	Micronesia Renewable Energy, Inc.
May 25, 2021	Petition of Episcopal Diocese of Rhode Island for Declaratory Judgment on Transmission System Costs and Related “Affected System Operator” Studies	Rhode Island Public Utility Commission Docket No. 4981	Episcopal Diocese of Rhode Island

**Testimony Submitted by Karl R. Rábago**

**(as of 17 January 2025)**

Jun. 21, 2021	Petition for Rate Increase by Florida Power & Light Company – Direct Testimony	Florida Public Service Commission Docket No. 20210015-EI	Florida Rising, Inc., League of United Latin American Citizens of Florida, and Environmental Confederation of Southwest Florida, Inc.
Jun. 22, 2021	Application of Consumers Energy Company for Authority to Increase Its Rates for the Generation and Distribution of Electricity and Other Relief	Michigan Public Service Commission Case No. U-20963	The Environmental Law and Policy Center (EPLC)
Jun. 28, 2021	Pennsylvania Public Utility Commission v. PECO Energy Company (GRC)	Pennsylvania Utility Commission Docket No. R-2021-3024601	Clean Energy Advocates
Jul. 12, 2021	Application of Consumers Energy Company for Authority to Increase Its Rates for the Generation and Distribution of Electricity and Other Relief – Rebuttal	Michigan Public Service Commission Case No. U-20963	The Environmental Law and Policy Center (EPLC)
Jul. 28, 2021	Application of Shenandoah Valley Electric Cooperative for a General Increase in Rates	Virginia State Corporation Commission Case No. PUR-2021-00054	Solar United Neighbors of Virginia (SUN-VA)
Aug. 5, 2021	Kentucky Utilities Company and Louisville Gas and Electric Company General Rate Cases – Supp. Proceeding on Net Energy Metering	Kentucky Public Service Commission Case Nos. 2020-00349, 2020-00350	Joint Intervenors – Mountain Association, Kentuckians for the Commonwealth, Kentucky Solar Energy Society
Sep. 2, 2021	Madison Gas & Electric Co. – General Rate Case	Wisconsin Public Service Commission Docket No. 3270-UR-124	Sierra Club
Sep. 3, 2021	Dominion Virginia Electric Power Company – Triennial Rate Review – Direct Testimony on ROE	Virginia State Corporation Commission Case No. PUR-2021-00058	Virginia Poverty Law Center
Sep. 13, 2021	Petition for Rate Increase by Florida Power & Light Company – Settlement Testimony	Florida Public Service Commission Docket No. 20210015-EI	Florida Rising, Inc., League of United Latin American Citizens of Florida, and Environmental Confederation of Southwest Florida, Inc.
Sep. 20, 2021	Madison Gas & Electric Co. – General Rate Case – Surrebuttal Testimony	Wisconsin Public Service Commission Docket No. 3270-UR-124	Sierra Club
Sep. 27, 2021	Dakota Energy Cooperative, Inc. v. East River Electric Power Cooperative, Inc. and Basin Electric Power Cooperative – Expert Report	US. District Court, District of South Dakota (Southern Division) Case 4:20-CV-04192-LLP	Dakota Energy Cooperative, Inc.



**Testimony Submitted by Karl R. Rábago**

**(as of 17 January 2025)**

Oct. 5, 2021	In the Matter of establishing regulations for a shared solar program pursuant to § 56-594.3 of the Code of Virginia	Virginia State Corporation Commission Case No. PUR-2020-00125	Coalition for Community Solar Access
Nov. 1, 2021	Dakota Energy Cooperative, Inc. v. East River Electric Power Cooperative, Inc. and Basin Electric Power Cooperative – Surrebuttal Expert Report	US. District Court, District of South Dakota (Southern Division) Case 4:20-CV-04192-LLP	Dakota Energy Cooperative, Inc.
Nov. 16, 2021	Petition of Virginia Electric and Power Company for approval of the RPS Development Plan, approval & certification of proposed CE-2 Solar Projects pursuant to § 56-580 D and 56-46.1 of the Code of Virginia	Virginia State Corporation Commission Case No. PUR-2021-00146	Appalachian Voices
Mar. 1, 2022	In the Matter of establishing regulations for a multi-family shared solar program pursuant to § 56-585.1:12 of the Code of Virginia	Virginia State Corporation Commission Case No. PUR-2020-00125	Appalachian Voices
Mar. 29, 2022	Review of Duke Energy Carolina, LLC & Duke Energy Progress, LLC Joint Application for Approval of NEM Tariff Revisions and Recommendations for Investigation of Costs and Benefits of Customer-Sited Generation – Expert Report	North Carolina Utilities Commission Docket No. E-100, Sub. 180	Environmental Working Group
Mar. 30, 2022	Ameren Illinois Company Petition for Approval of Performance and Tracking Metrics Pursuant to 220 ILCS 5/16-108.188(e) – Direct Testimony	Illinois Commerce Commission Docket No. 22-0063	Joint Solar Parties
Apr. 6, 2022	Commonwealth Edison Company Petition for the Establishment of Performance Metrics under Section 16-108.18(e) of the Public Utilities Act	Illinois Commerce Commission Docket No. 22-0067	Joint Solar Parties
May 6, 2022	Review of Duke Energy Carolina, LLC & Duke Energy Progress, LLC Joint Application for Approval of NEM Tariff Revisions and Recommendations for Investigation of Costs and Benefits of Customer-Sited Generation – Reply Report	North Carolina Utilities Commission Docket No. E-100, Sub. 180	Environmental Working Group

**Testimony Submitted by Karl R. Rábago**

**(as of 17 January 2025)**

May 25, 2022	Ameren Illinois Company Petition for Approval of Performance and Tracking Metrics Pursuant to 220 ILCS 5/16-108.188(e) – Rebuttal Testimony	Illinois Commerce Commission Docket No. 22-0063	Joint Solar Parties
May 27, 2022	Review of Duke Energy Carolina, LLC & Duke Energy Progress, LLC Joint Application for Approval of NEM Tariff Revisions and Recommendations for Investigation of Costs and Benefits of Customer-Sited Generation – Surreply Report	North Carolina Utilities Commission Docket No. E-100, Sub. 180	Environmental Working Group
Jun. 6, 2022	Commonwealth Edison Company Petition for the Establishment of Performance Metrics under Section 16-108.18(e) of the Public Utilities Act – Rebuttal Testimony	Illinois Commerce Commission Docket No. 22-0063	Joint Solar Parties
Jun. 22, 2022	In the Matter of Austin Energy Base Rate Case Filing Dated April 18, 2022	City of Austin Hearing Examiner	Sierra Club, Public Citizen, and Solar United Neighbors
Oct. 3, 2022	In the Matter of the Application of Northern States Power Company (Xcel) for Authority to Increase Rates for Electric Service in Minnesota	Minnesota Public Utilities Commission Docket No. E002/GR-21-630.	Just Solar Coalition
Oct. 13, 2022	Verified Petition of Vote Solar of Distributed Energy Resource Systems in Wisconsin – Rebuttal	Wisconsin PSC Docket No. 9300-DR-106	Vote Solar
Oct. 21, 2022	Verified Petition of Vote Solar of Distributed Energy Resource Systems in Wisconsin - Surrebuttal	Wisconsin PSC Docket No. 9300-DR-106	Vote Solar
Nov. 14, 2022	In the Matter of the Application of Columbia Gas of Ohio, Inc. for Authority to Amend its Filed Tariffs to Increase the Rates and Charges for Gas Services and Related Matters	Public Utilities Commission of Ohio Case No. 21-637-GA-AIR	Environmental Law & Policy Center
Dec. 6, 2022	In the Matter of the Application of Northern States Power Company (Xcel) for Authority to Increase Rates for Electric Service in Minnesota - Surrebuttal	Minnesota Public Utilities Commission Docket No. E002/GR-21-630.	Just Solar Coalition

**Testimony Submitted by Karl R. Rábago**

**(as of 17 January 2025)**

Dec. 19, 2022	Application of NorthWestern Energy for Authority to Increase Retail Electric and Natural Gas Utility Service Rates - Direct	Montana Public Service Commission Docket No. 2022.07.078	Montana Environmental Information Center (MEIC), Earthjustice
Jan. 11, 2023	Application of Tucson Electric Power Company for the Establishment of Just and Reasonable Rates and Charges Designed to Realize a Reasonable Rate of Return on the Fair Value of the Properties of Tucson Electric Power Company Devoted to Its Operations throughout the State of Arizona and for Related Approvals – Direct Testimony on ROE & Equity Ratio	Arizona Corporation Commission Docket No. E-01933A-22-0107	Arizona Solar Energy Industries Association & Solar Energy Industries Association
Jan. 27, 2023	Application of Tucson Electric Power Company for the Establishment of Just and Reasonable Rates and Charges Designed to Realize a Reasonable Rate of Return on the Fair Value of the Properties of Tucson Electric Power Company Devoted to Its Operations throughout the State of Arizona and for Related Approvals – Direct Testimony on Community Solar	Arizona Corporation Commission Docket No. E-01933A-22-0107	Arizona Solar Energy Industries Association & Solar Energy Industries Association
Mar. 6, 2023	Application of Tucson Electric Power Company for the Establishment of Just and Reasonable Rates and Charges Designed to Realize a Reasonable Rate of Return on the Fair Value of the Properties of Tucson Electric Power Company Devoted to Its Operations throughout the State of Arizona and for Related Approvals – Surrebuttal Testimony	Arizona Corporation Commission Docket No. E-01933A-22-0107	Arizona Solar Energy Industries Association & Solar Energy Industries Association
May 6, 2023	The Peoples Gas Light and Coke Company – Proposed General Increase in Rates and Revisions to Service Classifications, Riders, and Terms and Conditions of Service – Direct Testimony	Illinois Commerce Commission Docket No. 23-0069	City of Chicago

**Testimony Submitted by Karl R. Rábago**

**(as of 17 January 2025)**

July 17, 2023	The Peoples Gas Light and Coke Company – Proposed General Increase in Rates and Revisions to Service Classifications, Riders, and Terms and Conditions of Service – Rebuttal Testimony	Illinois Commerce Commission Docket No. 23-0069	City of Chicago
Aug. 25, 2023	In the Matter of the Application of Washington Gas Light Company for Authority to Increase Existing Rates and Charges and to Revise Its Terms – Direct Testimony	Maryland Public Service Commission Case No. 9704	Chesapeake Climate Action Network
Aug. 28, 2023	Application of Madison Gas and Electric Company for Authority to Adjust Electric and Natural Gas Rates – Direct Testimony	Public Service Commission of Wisconsin Docket No. 3270-UR-125	City of Madison
Sep. 16, 2023	Application of Madison Gas and Electric Company for Authority to Adjust Electric and Natural Gas Rates – Surrebuttal Testimony	Public Service Commission of Wisconsin Docket No. 3270-UR-125	City of Madison
Oct. 10, 2023	In the Matter of the Application of Washington Gas Light Company for Authority to Increase Existing Rates and Charges and to Revise Its Terms – Surrebuttal Testimony	Maryland Public Service Commission Case No. 9704	Chesapeake Climate Action Network
Apr. 16, 2024	In Re: Interstate Power & Light Company (General Rate Case) – Direct Testimony	Iowa Utilities Board Docket No. RPU-2023-0002	Clean Energy Districts of Iowa (CEDI) Coalition
Apr. 26, 2024	PECO Energy Default Supply Plan VI – Direct Testimony	Pennsylvania Public Utility Commission Docket No. P-2024-3046008	Energy Justice Advocates / Earthjustice
Apr. 30, 2024	In Re: Interstate Power & Light Company (General Rate Case) – Cross-Rebuttal Testimony	Iowa Utilities Board Docket No. RPU-2023-0002	Clean Energy Districts of Iowa (CEDI) Coalition
May 29, 2024	In Re: Interstate Power & Light Company (General Rate Case) – Surrebuttal Testimony	Iowa Utilities Board Docket No. RPU-2023-0002	Clean Energy Districts of Iowa (CEDI) Coalition

**Testimony Submitted by Karl R. Rábago**

**(as of 17 January 2025)**

May 31, 2024	Delta States Utilities LA, LLC and Entergy Louisiana, LLC – Ex Parte; In Re: Application for Authority to Operate as Local Distribution Company and Incur Indebtedness and Joint Application for Approval of Transfer and Acquisition of Local Distribution Company Assets and Related Relief – Direct Testimony	Council of the City of New Orleans Docket Number UD-24-01	Alliance for Affordable Energy
Jun 6, 2024	Tampa Electric Company Petition for Rate Increase – Direct Testimony	Florida Public Service Commission Docket Number 2023-0090-EI	Florida Rising and League of United Latin American Citizens
Jun 11, 2024	Duke Energy Florida Petition for Rate Increase – Direct Testimony	Florida Public Service Commission Docket Number 2024-0025-EI	Florida Rising and League of United Latin American Citizens
Jun 28, 2024	Delta States Utilities LA, LLC and Entergy Louisiana, LLC – Ex Parte; In Re: Application for Authority to Operate as Local Distribution Company and Incur Indebtedness and Joint Application for Approval of Transfer and Acquisition of Local Distribution Company Assets and Related Relief – Rebuttal Testimony	Council of the City of New Orleans Docket Number UD-24-01	Alliance for Affordable Energy
Aug 5, 2024	Delta States Utilities LA, LLC and Entergy Louisiana, LLC – Ex Parte; In Re: Application for Authority to Operate as Local Distribution Company and Incur Indebtedness and Joint Application for Approval of Transfer and Acquisition of Local Distribution Company Assets and Related Relief – Surrebuttal Testimony	Council of the City of New Orleans Docket Number UD-24-01	Alliance for Affordable Energy
Oct 23, 2024	Financial Oversight and Management Board for Puerto Rico as Representative of Puerto Rico Power Authority	U.S. Bankruptcy Court for the District of Puerto Rico, Nos. 17 BK 3283-LTS, BK 4780-LTS	Solar United Neighbors
Jan. 17, 2025	NorthWestern Energy’s Application for Authority to Increase Retail Electric and Natural Gas Utility Service Rates	Public Service Commission of Montana Docket Number 2022.07.078	Triple Oak Power, LLC

[175]

Sierra Club Exhibit (A)-3

Formal Case No. 1180

Witness Karl R. Rábago



ML# \_\_\_\_\_ Date Filed: August 25, 2023

August 25, 2023

**VIA ELECTRONIC FILING**

Andrew S. Johnston  
Executive Secretary  
Maryland Public Service Commission  
6 Saint Paul Street, 16th Floor  
Baltimore, MD 21202-6806

*Re: In the Matter of Washington Gas Light Company's Authority to Increase Existing Rates and Charges and to Revise Its Terms, Case No. 9704, **PUBLIC** Direct Testimony of Karl R. Rábago*

Dear Mr. Johnston:

Attached for the above-referenced case, please find the **PUBLIC** Direct Testimony of Karl R. Rábago filed on behalf of Chesapeake Climate Action Network in the above-referenced case.

In accordance with the Commission's March 16, 2020, Notice of Waiver and Relaxed Filing Requirements, Washington Gas Light Company will not provide paper copies of this filing. Please contact me if you have any questions. Thank you for your attention to this matter.

Sincerely,

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Timothy Oberleiton, Esq.  
Earthjustice  
1001 G Street NW, Suite 1000  
Washington, D.C. 20001  
Ph: (202) 793-5820  
E-mail: toberleiton@earthjustice.org

**BEFORE THE  
MARYLAND PUBLIC SERVICE COMMISSION**

IN THE MATTER OF THE APPLICATION OF     )  
WASHINGTON GAS LIGHT COMPANY FOR     )  
AUTHORITY TO INCREASE EXISTING RATES )     Case No. 9704  
AND CHARGES AND TO REVISE ITS TERMS    )

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**DIRECT TESTIMONY AND EXHIBITS**

**OF**

**KARL R. RÁBAGO**

**Principal, Rábago Energy LLC**

**ON BEHALF OF**

**CHESAPEAKE CLIMATE ACTION NETWORK**

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**PUBLIC VERSION**

**August 25, 2023**



### **Table of Exhibits**

Exhibit KR-1	Resume of Karl R. Rábago
Exhibit KR-2	Previous testimony of Karl R. Rábago
Exhibit KR-3	Company response to CCAN DR 1-6
Exhibit KR-4	Company response to CCAN DR 1-14 & Att.
Exhibit KR-5	Company response to Staff DR 8-13
Exhibit KR-6	Company response to Staff DR 8-14
Exhibit KR-7	Company response to OPC DR 3-10 & Att. CONFIDENTIAL
Exhibit KR-8	Company response to OPC DR 6-1
Exhibit KR-9	Company response to OPC DR 6-3 & Att.
Exhibit KR-10	Company response to OPC DR 7-8
Exhibit KR-11	Company response to OPC DR 6-5
Exhibit KR-12	Company response to CCAN DR 1-11
Exhibit KR-13	Company response to Staff DR 8-15
Exhibit KR-14	Company response to Staff DR 4-4
Exhibit KR-15	Company response to Staff DR 15-19 & Atts. CONFIDENTIAL
Exhibit KR-16	Company response to Staff DR 15-39 & Att. 5 CONFIDENTIAL
Exhibit KR-17	Company response to CCAN DR 1-13
Exhibit KR-18	Company response to CCAN DR 1-15
Exhibit KR-19	Company response to CCAN DR 1-12
Exhibit KR-20	Company response to OPC DR 7-10 & Att.
Exhibit KR-21	Company response to CCAN DR 2-2
Exhibit KR-22	Company response to CCAN DR 2-3
Exhibit KR-23	Company response to CCAN DR 2-4
Exhibit KR-24	Company response to CCAN DR 4-1
Exhibit KR-25	Company response to CCAN DR 4-2
Exhibit KR-26	Company response to CCAN DR 4-3
Exhibit KR-27	Company response to CCAN DR 4-4
Exhibit KR-28	Company response to CCAN DR 4-5
Exhibit KR-29	Company response to CCAN DR 4-6

**I. INTRODUCTION & WITNESS QUALIFICATIONS**

**Q. Please state your name, business name and address, and role in this matter.**

A. My name is Karl R. Rábago. I am the principal of Rábago Energy LLC, a Colorado limited liability company, located at 1350 Gaylord Street, Denver, Colorado. I appear here in my capacity as an expert witness on behalf of the Chesapeake Climate Action Network (“CCAN”).

**Q. Please summarize your experience and expertise in the field of utility regulation.**

A. I have worked for more than 30 years in the utility industry and related fields. I am actively involved in a wide range of utility regulatory and ratemaking issues across the United States. My previous employment experience includes Commissioner with the Public Utility Commission of Texas, Deputy Assistant Secretary with the U.S. Department of Energy, Vice President with Austin Energy, Executive Director of the Pace Energy and Climate Center, Managing Director with the Rocky Mountain Institute, and Director with AES Corporation, among others. My resume is attached as Exhibit KR-1.

**Q. Do you have any specific experience relating to ratemaking and rate design?**

A. Yes. As a public utility commissioner for the Public Utility Commission of Texas (“Texas PUC”), I reviewed and made decisions about hundreds of rate applications by investor-owned, cooperative, and publicly owned utilities. As a utility sector executive, I have led or advised on the design of rates of many types and have proposed and overseen application of rates for a variety of utility services. For example, when serving as the vice president for distributed energy services at Austin Energy, I ensured that our energy efficiency and weatherization programs were closely coordinated with similar programs administered by the local gas and water utilities. As a law professor, I have taught the

1 principles of utility ratemaking to law students. As an expert witness, I have reviewed and  
2 testified in regulatory commission proceedings across the country on the merits of scores  
3 of rate proposals from investor-owned, cooperative, and publicly-owned utilities. I have  
4 also written and presented testimony in several gas utility regulatory proceedings,  
5 including rate cases in New York, Rhode Island, and Wisconsin. I have written and  
6 published articles on rate design and utility regulation, as reflected in Exhibit KR-1.

7 **Q. Have you ever testified before the Maryland Public Service Commission**  
8 **(“Commission”) or other regulatory agencies?**

9 A. Yes. I have participated in PC 44-related proceedings, value of solar studies, and the  
10 distribution planning working group. I am currently working as a facilitator with  
11 E4theFuture in Case 9619, the Uniform Benefit Cost Analysis project. In the past ten  
12 years, I have submitted testimony, comments, or presentations in utility proceedings in  
13 Alabama, Arkansas, Arizona, California, Colorado, Connecticut, District of Columbia,  
14 Florida, Georgia, Guam, Hawaii, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana,  
15 Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Nevada, New  
16 Hampshire, New York, North Carolina, Ohio, Pennsylvania, Puerto Rico, Rhode Island,  
17 Texas, Vermont, Virginia, Washington, and Wisconsin. I have also testified before the  
18 U.S. Congress and have been a participant in comments and briefs filed at several federal  
19 agencies and courts. A listing of my previous testimony is attached as Exhibit KR-2.

20 **II. OVERVIEW OF TESTIMONY AND RECOMMENDATIONS**

21 **Q. Please provide an overview of your testimony in this proceeding.**

1 A. My focus in this testimony is on the programs, costs, and resulting rate impacts proposed  
2 by Washington Gas Light Company (“WGL” or “Company”) and relating to impacts on  
3 climate change and achievement of Maryland’s climate policies. I provide testimony on  
4 the goals and performance of WGL and its holding company owner, AltaGas, a Canadian  
5 corporation relating to greenhouse gas (“GHG”) reductions.

6 My testimony explains why the Company’s proposals to continue activities that  
7 increase use of fossil methane gas or renewable natural gas (“RNG”) (collectively “gas”)  
8 should be rejected by the Commission. I conclude that in order to demonstrate  
9 meaningful compliance with Maryland’s climate-related policies, the Company must take  
10 a more serious and expeditious approach to managing a decapitalization of its gas system  
11 and the systematic decommissioning of its gas delivery system.

12 For these reasons, I find that the Company needs clear and express Commission  
13 direction to develop, with the support of Commission, Staff, and stakeholder  
14 participation, a specific, actionable, and measurable plan for eliminating greenhouse gas  
15 emissions related to its operations and to the use of gas by its current customers.

16 I therefore recommend that the Commission only approve the inclusion of those  
17 GHG-related program costs in the revenue requirement in this proceeding conditioned  
18 upon WGL providing comprehensive documentation of the programs, their underlying  
19 cost-effectiveness evaluation, and all metrics and future plans for the programs. I also  
20 provide a list of specific recommendations relating to data collection and reporting,  
21 planning, and other actions.

1 **Q. Please describe the organization of your direct testimony.**

2 A. **Section I** provides information about my background, expertise, and qualifications as an  
3 expert witness in this matter.

4 **Section II** provides an overview of my testimony and recommendations.

5 **Section III** provides a summary of relevant authorities and policy relating to this  
6 testimony.

7 **Section IV** reviews WGL's proposed GHG-related programs.

8 **Section V** reviews WGL actions to promote increased gas use.

9 **Section VI** reviews what is missing in WGL's approach to GHG emissions reductions  
10 and in this application.

11 **Section VII** provides my recommendations for Commission action on the Company's  
12 GHG-related proposals and for direction that the Commission should provide to WGL.

13 **III. RELEVANT AUTHORITY AND POLICY REVIEWED FOR THIS**  
14 **TESTIMONY**

15 **Q. What materials did you review in preparing this testimony?**

16 A. I reviewed relevant portions of the Company's application, testimony, schedules, and  
17 responses to data requests from various parties. I also reviewed relevant statutory and  
18 regulatory authorities and policy statements, plans, and other documents issued by  
19 CCAN, AltaGas, the Commission, the Maryland Office of People's Counsel ("OPC"),  
20 Maryland Department of the Environment ("MDE"), as well as previous filings with and  
21 orders of the Commission. I have reviewed learned treatises and other authoritative  
22 materials on ratemaking, some of my previous testimony, and testimony in other cases.

1 Where I rely upon specific sources, I cite them in footnotes and provide links to web sites  
2 and associated documents.

3 **1. Maryland's Climate and Energy Policy**

4 **Q. Please summarize Maryland's climate and energy policy.**

5 A. Maryland's Climate Solutions Now Act ("CSNA")<sup>1</sup> sets the highest state goals in the  
6 nation for reducing GHG emissions—60% by 2031, relative to 2006 levels—and  
7 achieving a net-zero emissions economy by 2045.<sup>2</sup> In order to achieve these goals,  
8 MDE's "Maryland Climate Pathway" report identifies a wide range of actions that can  
9 yield benefits for Marylanders while improving environmental conditions and the state's  
10 economy.<sup>3</sup> Urgent, coordinated, and strong actions are required in all of Maryland's  
11 economic sectors to meet the GHG reduction goals. These actions include improved  
12 efficiency in energy use and the electrification of non-road fuel usage and all appliances,<sup>4</sup>  
13 including those that directly use gas. A dramatic decline in buildings sector GHG  
14 emissions must begin now, and must be permanent.

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<sup>1</sup> Climate Solutions Now Act of 2022 (Ch. 38, Acts 2022), Maryland SB528 (2022).

<sup>2</sup> Maryland Dept. of the Environment ("MDE"), *Maryland's Climate Pathway* (Jun. 2023) at 12; available at:

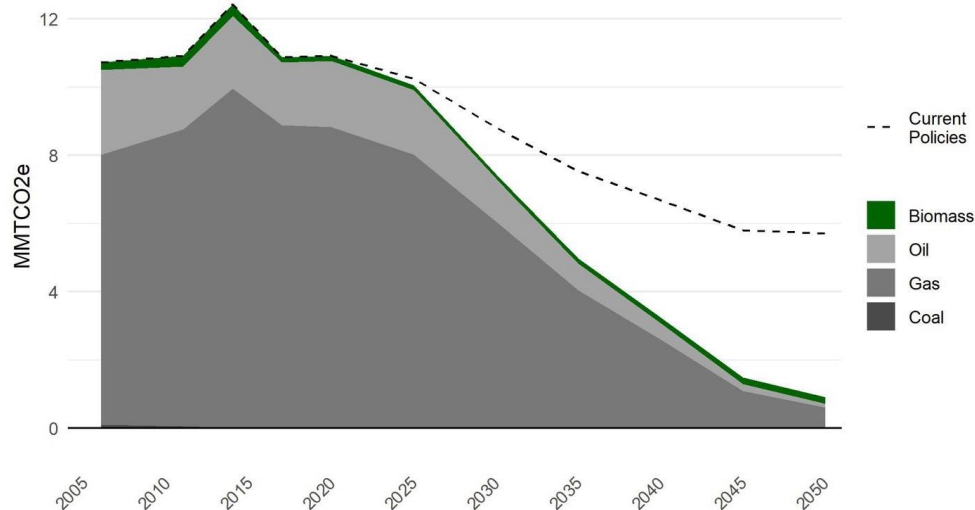
<https://mde.maryland.gov/programs/air/ClimateChange/Documents/60x31%20Plan/Maryland%27s%20Climate%20Pathway%20Report.pdf>. (Maryland Climate Pathway).

<sup>3</sup> *Id.* at 11 (Executive Summary – Key Findings).

<sup>4</sup> *Id.* at 15. MDE's Maryland's Climate Pathway builds on and strengthens the 2030 Greenhouse Gas Reduction Act Plan ("2030 GGRA Plan") in recognizing the need to improve efficiency under the EmPOWER Maryland Program ("EmPOWER Maryland") and to achieve beneficial electrification of building heating systems. MDE, 2030 GGRA Plan (Feb. 19, 2021) at 47-48, available at: <https://mde.maryland.gov/programs/air/ClimateChange/Documents/2030%20GGRA%20Plan/THE%202030%20GGRA%20PLAN.pdf>. See also Maryland Commission on Climate Change, *2021 Annual Report and Building Energy Transition Plan* (2021) at 8, available at:

[https://mde.maryland.gov/programs/air/ClimateChange/MCCC/Documents/2021%20Annual%20Report%20FINAL%20\(2\).pdf](https://mde.maryland.gov/programs/air/ClimateChange/MCCC/Documents/2021%20Annual%20Report%20FINAL%20(2).pdf), and Appendix A – Building Energy Transition Plan, available at: <https://mde.maryland.gov/programs/air/ClimateChange/MCCC/Documents/2021%20Annual%20Report%20Appendices%20FINAL.pdf>.

**Figure KR-1: Modeled Buildings Sector GHG Reductions Required<sup>5</sup>**



The benefits of these reductions include not only compliance with the CSNA GHG reduction goals, but also saving lives and reducing respiratory illness associated with direct gas combustion.<sup>6</sup>

**Q. What is the Commission’s role in realizing the goals of the CSNA?**

A. Under the Maryland Code, Public Utilities (“PUA”), the Commission has responsibility for supervising and regulating public service companies to “ensure their operation in the interest of the public,” and to “promote adequate, economical, and efficient delivery of utility services in the State without unjust discrimination.”<sup>7</sup> The Commission is further obligated to “enforce compliance with the requirements of law by public service companies.”<sup>8</sup> In supervising and regulating public service companies, the Commission is obliged to consider, *inter alia*, “the public safety,” “the economy of the State,” “the

<sup>5</sup> *Id.* at 52, Fig. 2.10.

<sup>6</sup> *Id.* at 53.

<sup>7</sup> Md. Code Ann., Public Utilities (“PUA”) § 2-113(a)(1)(i) (2022).

<sup>8</sup> *Id.* at § 2-113(a)(1)(ii).

1 conservation of natural resources,” “the preservation of environmental quality, including  
2 protection of the global climate from continued short-term and long-term warming,” and  
3 “the achievement of the State’s climate commitments for reducing statewide greenhouse  
4 gas emissions, including those specified in Title 2, Subtitle 12 of the Environment  
5 Article.”<sup>9</sup>

6 **Q. What do these Maryland statutory and policy provisions mean for this case?**

7 A. Taken as a whole, Maryland climate and energy policy reflects a concrete obligation on  
8 the Commission and the public service utilities that it regulates to support and help  
9 realize the goals of Maryland’s CSNA. This testimony points out how WGL’s actions and  
10 proposals fail to meet that obligation and why the Commission must set a new course for  
11 WGL in the years ahead.

12 **2. The Company’s Position regarding Maryland Climate and Energy Policies**

13 **Q. Has WGL recognized the importance of these Maryland climate and energy policies,**  
14 **and reflected these policies in its proposed programs, spending, and rates?**

15 A. The Company says that one of its core value drivers is “Emerging Ecosystems,” which  
16 focuses on “developing action plans for near-term integrated strategies that are consistent  
17 with emerging public policy related to carbon reduction,” and on doing the “work to  
18 maximize opportunities for government incentives that will enhance [WGL’s] existing  
19 low-carbon footprint,” while also “preparing for [a] low-carbon future through design of  
20 innovative [biomethane or renewable natural gas], hydrogen and energy efficiency

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<sup>9</sup> *Id.* at § 2-113(a)(2).



1 programs.”<sup>10</sup> The Company states that the rates it proposes in this proceeding support its  
2 Emerging Ecosystems value driver.<sup>11</sup>

3 **Q. How does WGL “describe and detail all strategies, plans, and actions taken by the**  
4 **Company, planned, or underway which ‘enhance our existing low-carbon**  
5 **footprint?’”<sup>12</sup>**

6 A. WGL’s response to this question is that its “decarbonization strategy embraces (a) energy  
7 efficiency to encourage and incentivize reducing natural gas consumption, (b)  
8 modernizing our infrastructure and operations to reduce GHG emissions, (c)  
9 progressively higher levels of low carbon fuels delivered to its customers (certified gas,  
10 renewable natural gas, hydrogen), (d) support for low-carbon fuel-based end use  
11 applications in C&I and residential markets, and (e) support for adoption of alternative  
12 fueled modes of transportation.”<sup>13</sup> I address the programmatic proposals relating to these  
13 topics later in this testimony.

14 **Q. Does WGL have data on the annual amount of carbon-dioxide (“CO<sub>2</sub>”) and carbon-**  
15 **dioxide-equivalent (“CO<sub>2</sub>e”) emissions and criteria pollutant emissions associated**  
16 **with the production, transport, distribution, and use of the Company’s gas products**  
17 **in Maryland?**

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<sup>10</sup> WGL direct testimony of James D. Steffes, Senior Vice President of Government and Regulatory Affairs, at 11: 9-12 (“Steffes direct”).

<sup>11</sup> *Id.* at 11:13-21 & Ex. JDS-1. The Company’s 2022 Utilities Value Drivers, which apply to all of AltaGas’ utility subsidiaries, states that it will “identify, develop and advance near-term integrated strategies that are consistent with emerging public policy related to carbon reduction,” and “identify investment opportunities in emerging energy technologies to supply additional carbon friendly opportunities [to meet] domestic and global needs,” and “maximize opportunities through strategic relationships that will enhance [the Company’s] existing low carbon footprint.”

<sup>12</sup> CCAN DR 1-6.

<sup>13</sup> Company response to CCAN DR 1-6.

1 A. WGL provides inconsistent information relating to its GHG emissions footprint. First, it  
2 asserts that a special study would be required, and which apparently has not been  
3 performed, in order to provide GHG emissions data.<sup>14</sup> WGL further states that it “has not  
4 calculated Scope 3 emissions from fuel and energy-related activities (FERA),” though  
5 “together with its parent company, AltaGas, [it] expects to begin work in this area in  
6 2024.”<sup>15</sup> Notwithstanding these assertions, and the additional assertion that it does not  
7 project future GHG emissions,<sup>16</sup> the Company has provided some historical data for the  
8 years 2018-2022 relating to Scope 1 and Scope 3 emissions.<sup>17</sup> WGL states that it has not  
9 quantified the carbon impacts of its operations over the next twenty-five years,<sup>18</sup> and that  
10 it has never forecasted GHG emissions.<sup>19</sup>

11 **Q. Is the Company motivated by any other value drivers?**

12 A. Yes. The Company’s Corporate Social Responsibility value driver states that it will  
13 continue to focus on progressing its Environmental, Social, and Governance (“ESG”)  
14 initiatives, and that it will engage “customers and stakeholders to highlight [its] critical  
15 infrastructure and garner support for increased investment in [its] core assets and new  
16 energy ecosystem propositions,” while identifying opportunities “in the emerging low  
17 carbon ecosystem to maximize [its] existing infrastructure.”<sup>20</sup>

18 **Q. What are the Company’s ESG goals relating to GHG emissions?**

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<sup>14</sup> Company response to CCAN DR 1-14.

<sup>15</sup> *Id.*

<sup>16</sup> *Id.*

<sup>17</sup> *Id.* at Attachment A.

<sup>18</sup> Company response to CCAN DR 4-1.

<sup>19</sup> Company response to CCAN DR 4-5.

<sup>20</sup> Steffes direct at Ex. JDS-1.

1 A. According to AltaGas' 2022 ESG Update Report,<sup>21</sup> the holding company and its  
2 subsidiaries have two emissions-related goals: (1) reduction of Scope 1 and 2 emissions  
3 against a 2008 baseline,<sup>22</sup> and (2) delivery of at least 10% of fuel from lower-carbon  
4 sources by 2030. WGL's Scope 1 and 2 emissions represent 80% of AltaGas' 2021 Scope  
5 1 and 2 emissions.<sup>23</sup>

6 **Q. What has the Company's progress been in meeting its Scope 1 and 2 emissions**  
7 **reductions goal?**

8 A. According to the AltaGas 2022 ESG Update Report, WGL has reduced its Scope 1 and 2  
9 emissions by 18% relative to 2008 emissions, from 407,741 metric tonnes of carbon  
10 dioxide-equivalent (mtCO<sub>2</sub>e) of emissions,<sup>24</sup> or about 5,560 mtCO<sub>2</sub>e per year.<sup>25</sup> AltaGas  
11 reports that this progress was made through pipe replacement activity, enhancing safety  
12 and reliability of energy delivery, and reducing the potential for leaks, through energy  
13 efficiency and improvements made to facilities, and through use of compressed fossil  
14 methane gas in fleet vehicles.<sup>26</sup>

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<sup>21</sup> AltaGas, *2022 ESG Update Reporting 2021 Performance* ("AltaGas 2022 ESG Update"), at 4, available at: [https://www.altagas.ca/sites/default/files/2022-12/ALA\\_2022\\_ESG\\_UPDATE\\_0.pdf](https://www.altagas.ca/sites/default/files/2022-12/ALA_2022_ESG_UPDATE_0.pdf). See also Company response to Staff DR 8-13.

<sup>22</sup> Scope 1 emissions are direct greenhouse (GHG) emissions that occur from sources that are controlled or owned by an organization (e.g., emissions associated with fuel combustion in boilers, furnaces, vehicles). Scope 2 emissions are indirect GHG emissions associated with the purchase of electricity, steam, heat, or cooling. Although scope 2 emissions physically occur at the facility where they are generated, they are accounted for in an organization's GHG inventory because they are a result of the organization's energy use. EPA Center for Corporate Climate Leadership, *Scope 1 and Scope 2 Inventory Guidance*, U.S. Environmental Protection Agency, available at: <https://www.epa.gov/climateleadership/scope-1-and-scope-2-inventory-guidance>.

<sup>23</sup> AltaGas 2022 ESG Update at 9.

<sup>24</sup> Id.

<sup>25</sup> Calculated as (407,741 – 285,419) / 22.

<sup>26</sup> Id.

1 **Q. What would the resulting emissions be if WGL meets its goal of reducing Scope 1**  
2 **and 2 emissions?**

3 A. If WGL achieves its goal on Scope 1 and 2 emissions, the Company will still be  
4 responsible for some 285,419 tonnes of GHG emissions each year.<sup>27</sup> This is equivalent  
5 about 731,685,538 miles of driving by an average gasoline-powered passenger vehicle, or  
6 the emissions from burning nearly 320,000 pounds of coal.<sup>28</sup>

7 **Q. What has the Company's progress been in meeting its second goal of delivering at**  
8 **least 10% of fuel from "lower-carbon" sources by 2030?**

9 A. AltaGas reports no progress in WGL achieving this goal, though it reports that it is  
10 "pursuing opportunities" for interconnection with local RNG sources such as landfill and  
11 wastewater treatment facilities, and has received permission from the Commission to  
12 interconnect the Piscataway Bioenergy Project, which generates RNG from biosolids  
13 from the Washington Suburban Sanitary Commission.<sup>29</sup>

14 **Q. What emissions are associated with the combustion of gas delivered by WGL?**

15 A. WGL's Scope 3 emissions,<sup>30</sup> which are primarily the emissions associated with customers  
16 using the gas that WGL provides and/or delivers, were 4,255,724 mtCO<sub>2</sub>e, and if Scope 3  
17 emissions from gas delivered for third parties is subtracted, were 1,981,271 mtCO<sub>2</sub>e.<sup>31</sup>

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<sup>27</sup> *Id.* The Company's 2030 target for Scope 1 and 2 emissions is 285,419 mtCO<sub>2</sub>e.

<sup>28</sup> Calculated using U.S. EPA, *Greenhouse Gas Equivalencies Calculator* (updated Jul. 2023), available at: <https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator#results>.

<sup>29</sup> AltaGas 2022 ESG Update at 9.

<sup>30</sup> Scope 3 emissions are the result of activities from assets not owned or controlled by the reporting organization, but that the organization indirectly affects in its value chain. Scope 3 emissions include all sources not within an organization's scope 1 and 2 boundary. EPA Center for Corporate Climate Leadership, *Scope 3 Inventory Guidance*, U.S. Environmental Protection Agency, available at: <https://www.epa.gov/climateleadership/scope-3-inventory-guidance>.

<sup>31</sup> Company response to CCAN DR 1-14, Att. A, at 1.

This is the equivalent of more than 5 million miles driven by an average gasoline-powered passenger vehicle, or of five gas-fired power plants operating for one year.<sup>32</sup> On average between 2018 and 2022, the Company's Scope 3 emissions are about 1.9 million mtCO<sub>2</sub>e per year.<sup>33</sup>

**Table KR-1: Emissions from Maryland Gas Usage (mtCO<sub>2</sub>e), 2018-22.<sup>34</sup>**

Emissions from Maryland Natural Gas Usage (mTons CO <sub>2</sub> e)							
Year	Ownership	Residential	Commercial	Industrial	Electric Power	Vehicle Fuel	Total
2018	WGL	1,621,801	380,365	0	0	0	2,002,167
	3 <sup>rd</sup> Party	641,108	1,355,788	0	911,549	12,609	2,921,054
2019	WGL	1,534,132	349,507	0	0	0	1,883,639
	3 <sup>rd</sup> Party	563,280	1,380,427	0	353,342	12,000	2,309,050
2020	WGL	1,483,613	319,772	0	0	0	1,803,385
	3 <sup>rd</sup> Party	509,296	1,323,491	0	382,650	8,851	2,224,288
2021	WGL	1,557,605	339,075	0	0	0	1,896,680
	3 <sup>rd</sup> Party	519,624	1,342,200	0	363,831	8,575	2,234,231
2022	WGL	1,651,591	329,680	0	0	0	1,981,271
	3 <sup>rd</sup> Party	519,610	1,425,315	0	321,155	8,373	2,274,453

**Q. What has the Company's progress been in reducing Scope 3 emissions?**

A. Neither WGL nor its owner, AltaGas, has a goal for reducing Scope 3 emissions. AltaGas reports that its subsidiary utilities have, through energy efficiency programs, saved customers 9,670 therms of gas,<sup>35</sup> resulting in 51.2 mtCO<sub>2</sub>e less GHG emissions. This is about 0.0026 percent of WGL's total Scope 3 emissions. The Company also reports that its STRIDE activity has reduced emissions by 22,299 mtCO<sub>2</sub>e, and that non-STRIDE activities have resulted in about 439 mtCO<sub>2</sub>e in additional reductions.<sup>36</sup> Assuming that the Company captures its self-reported STRIDE-related emissions reductions as Scope 1

<sup>32</sup> Calculated using U.S. EPA, *Greenhouse Gas Equivalencies Calculator* (updated Jul. 2023), available at: <https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator#results>.

<sup>33</sup> Calculated as (2,002,167 + 1,883,639 + 1,803,385 + 1,896,680 + 1,981,271) / 5.

<sup>34</sup> Id.

<sup>35</sup> AltaGas 2022 ESG Update at 9.

<sup>36</sup> Company response to Staff DR 8-14.

1 emissions reductions, then the incremental reduction of 439 mtCO<sub>2</sub>e or about 0.0046% of  
2 its 2018-2022 Scope 3 emissions, and would presumably include the 51.2 mtCO<sub>2</sub>e of  
3 reductions associated with efficiency improvements, including under EmPOWER  
4 Maryland,<sup>37</sup> on average about 88 mtCO<sub>2</sub>e per year.

5 **Q. How does this performance compare to the CSNA goal for emissions reductions?**

6 A. As previously stated, the CSNA goal for 2031 is a 60% reduction in GHG emissions,  
7 against a 2006 baseline. Without knowing WGL's 2006 emissions levels, it is not possible  
8 to accurately estimate the Company's progress toward supporting Maryland's 60%  
9 reduction goal. If I estimate that WGL's Scope 1 and 2 emissions were about 11,120  
10 higher in 2006, then a 60% reduction by 2031 would mean that emissions in 2031 could  
11 be no higher than 251,316 mtCO<sub>2</sub>e in 2031. That leaves only 9 years for the Company to  
12 eliminate over 81,000 mtCO<sub>2</sub>e in Scope 1 and 2 emissions, requiring 63% more  
13 reductions each year than in the previous fifteen years. As for Scope 3 emissions, even  
14 generously assuming that Scope 3 emissions were at 3 million mtCO<sub>2</sub>e in 2006, the  
15 Company would have to be at 1.4 million mtCO<sub>2</sub>e by 2030—leaving nearly 600,000  
16 mtCO<sub>2</sub>e in additional Scope 3 reductions needed by 2031, down from the current level of  
17 1,981,271 mtCO<sub>2</sub>e. That means the Company would have to decrease Scope 3 emissions  
18 by 65,000 mtCO<sub>2</sub>e each year between now and 2031, or about 733 times faster than it has  
19 done over the past five years.

20 **Q. What are the Company's projections for the amount of gas it plans to deliver in the**  
21 **future?**

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<sup>37</sup> Calculated as  $(439) / (2,002,167 + 1,883,639 + 1,803,385 + 1,896,680 + 1,981,271)$ .

1 A. [BEGIN CONFIDENTIAL]

2 [REDACTED] [END

3 CONFIDENTIAL] These forecasts are out of step with the need for the Company to  
4 begin decommissioning infrastructure, supporting electrification of heating load, and  
5 otherwise doing its part to support Maryland’s achievement of its CSNA goals. WGL  
6 states that it has “no analyses, documents, or studies prepared by the Company examining  
7 or forecasting the expected gas usage of its customers over the next 30 years [out to  
8 2053].”<sup>39</sup>

9 Q. Has WGL added new gas demand and new GHG emissions over the past five years?

10 A. Yes. Based on its annual forecasts, WGL states that it has connected an average of 5,338  
11 new customers each year for the past five years.<sup>40</sup> These additions have been very  
12 profitable for the Company, generating more than \$150 million in net present value and  
13 nearly \$100 million in new capital requirements for the Company.<sup>41</sup> More than \$25  
14 million of this new capital requirement is for service expansions in 2022 alone.<sup>42</sup> Over  
15 the same five years, from 2018 to 2022, the cost per new connection has more than  
16 doubled, from \$2,166 per meter to \$5,562 per meter.<sup>43</sup> Conservatively assuming a useful  
17 life and straight-line depreciation schedule for this spending and these additions to  
18 revenue requirements, WGL’s customers in Maryland could still be paying for service  
19 extensions installed during this period in the years 2048 through 2052—long after

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<sup>38</sup> Company response to OPC DR 3-10, CONFIDENTIAL Att. (Revised).

<sup>39</sup> Company response to OPC DR 6-1.

<sup>40</sup> Company response to OPC DR 6-3.

<sup>41</sup> Id.

<sup>42</sup> Id.

<sup>43</sup> Id.

1 Maryland is supposed to have achieved net zero GHG emissions under the CSNA. WGL  
2 sees these potential stranded costs and the accompanying increases in GHG emissions as  
3 a customer benefit because “the revenue generated from new ratepayers allow[s] fixed  
4 costs systemwide to further spread amongst more customers.”<sup>44</sup>

5 **Q. How does WGL justify adding to the future costs of decarbonization and the**  
6 **potential for stranded gas system costs through subsidized new gas service**  
7 **connections?**

8 A. WGL takes the legal position that the CSNA “did not void or revise Section 14 of the  
9 General Service Provisions of the Company’s Commission-approved Maryland tariff,”  
10 and that “[u]ntil such time as a tariff revision is approved by the Commission or by  
11 operation of law, the Company must abide by the terms and conditions of its  
12 Commission-approved Maryland tariff.”<sup>45</sup>

13 **Q. What are WGL’s plans for the ultimate decommissioning and decapitalization of its**  
14 **gas system in a world in which gas use ends?**

15 A. WGL has no plans for this eventuality.<sup>46</sup> WGL does not believe it will ever stop selling  
16 gas to retail customers.<sup>47</sup>

17 **Q. What is your view of WGL’s position that it must wait on Commission action to stop**  
18 **forcing existing customers to subsidize new gas connections?**

19 A. WGL is demonstrating a disappointing lack of corporate social responsibility and market  
20 sector leadership. WGL promotes gas use through its Washington Gas Marketing

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<sup>44</sup> Company response to OPC DR 7-8.

<sup>45</sup> Company response to OPC DR 6-5.

<sup>46</sup> Company response to CCAN DR 1-11.

<sup>47</sup> Company response to CCAN DR 4-3.



1 Department.<sup>48</sup> I find no evidence in the application in this proceeding that the Company  
2 has proposed amendments to Section 14 of its tariff in this regard. This means that the  
3 Commission will have to direct the Company to end this practice, which is now out of  
4 sync with Maryland state law.

5 **Q. Do you have any way to calculate the costs to customers of the reductions in GHG**  
6 **emissions that the Company has achieved in past years?**

7 A. The costs of the Company's emissions reductions to date is impossible to calculate  
8 accurately because the Company doesn't collect and maintain cost data related to GHG  
9 reductions in very usable form.<sup>49</sup> The Company reports that it has spent about \$150  
10 million over the past five years on leak management activities,<sup>50</sup> in order to secure the  
11 22,299 mtCO<sub>2</sub>e of reductions from STRIDE spending. This amounts to a staggering  
12 \$6,715 per mtCO<sub>2</sub>e of reductions. Given the rough estimate of an additional 663,000 tons  
13 that still need to be eliminated from WGL's Scope 1, 2, and 3 emissions footprints, the  
14 cost to customers would be nearly \$4.5 billion—a number far outside the range of reason.  
15 To put this figure in context, updated estimates from the Environmental Defense Fund  
16 show that full transition away from fossil carbon can be accomplished, across the  
17 economy, and by 2050, for less than \$250 per ton, or about \$1.25 billion for the entire  
18 U.S. economy.<sup>51</sup>

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<sup>48</sup> Company response to CCAN DR 4-4.

<sup>49</sup> Company response to Staff DR 8-15.

<sup>50</sup> Company response to Staff DR 4-4.

<sup>51</sup> M. Rote, *A Revamped Cost Curve for Reaching Net-zero Emissions*, Environmental Defense Fund (Aug. 31, 2021), available at: <https://www.edf.org/revamped-cost-curve-reaching-net-zero-emissions>.

1 **Q. Are there additional costs to customers relating to the Company's ESG GHG**  
2 **reduction goals?**

3 A. [BEGIN CONFIDENTIAL] [REDACTED]

4 [REDACTED]

5 [REDACTED]

6 [REDACTED]

7 [END CONFIDENTIAL]

8 **Q. What do you conclude based on your review of the Company's goals and**  
9 **performance against those goals in reducing GHG emissions and supporting**  
10 **Maryland's CSNA?**

11 A. The Company's goals are inadequate. Even against these inadequate goals, the  
12 Company's performance is extremely poor and also inadequate. The rate payer money the  
13 Company spends on its paltry reductions performance is excessive and unreasonable. The  
14 Company has yet to make a serious commitment to reducing its contributions, and those  
15 of its customers, to the climate change problem. In the next section of this testimony, I  
16 address the various GHG-related programs proposed by WGL. WGL has only limited  
17 data on the efficacy and economics of these efforts, primarily those EmPOWER program  
18 activities for which reporting is required.<sup>53</sup> These programs are the only actions that  
19 WGL proposes in response to the comprehensive and large-scale policy statements and  
20 plans developed for Maryland.<sup>54</sup>

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<sup>52</sup> Company responses to Staff DRs 15-19 & 15-39, Att. 5 CONFIDENTIAL.

<sup>53</sup> Company response to CCAN DR 4-6.

<sup>54</sup> Company response to CCAN DR 4-2.

**IV. THE COMPANY’S PROPOSED GHG-RELATED PROGRAMS**

**Q. Please describe the Company’s current and proposed spending as set out in this proceeding.**

A. The Company’s case for why its application meets the criteria set out in PUA § 2-113 is made in the direct testimony of Mr. James D. Steffes, Senior Vice President for Government and Regulatory Affairs for WGL, and Mr. Robert C. Yardley, Jr., a consultant appearing on behalf of WGL. Mr. Steffes asserts that the Company’s focus on delivering its value drivers aligns the Company with the interests of its Maryland customers.<sup>55</sup> Mr. Yardley asserts that WGL’s “rate filing includes the results of activities undertaken during the test year as well as proposals that will contribute to the public interest as represented by the six factors in PUA § 2-113.”<sup>56</sup>

**Q. Please review the Company’s assertions relating to the public interest standards in PUA § 2-113.**

A. The Company’s positions on the public interest standards are as follows:  
*Safety:* Company witness Steffes asserts that the Company meets the “safety” element of PUA § 2-113 through the work it is doing to install, retirement, and remediation of gas pipes and service lines through the STRIDE program. Neither Mr. Steffes or Mr. Yardley address the safety or health impacts, including those stemming from climate change, of fossil methane gas and RNG production, transportation, delivery, and use. Mr. Yardley

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<sup>55</sup> Steffes direct at 6:8-10.

<sup>56</sup> WGL direct testimony of Robert C. Yardley at 4:7-9 (“Yardley direct”). *See also* Company response to CCAN DR 1-13.

1 points out that STRIDE spending reflects \$87 million in revenue requirement included in  
2 the test year rate base in this proceeding.<sup>57</sup>

3 *Maryland's Economy*: Mr. Yardley offers the Company's position that its spending on its  
4 distribution and transmission networks, and its 700 employees in Maryland, help the  
5 Company maintain safe and reliable operations, become more efficient, and maintain its  
6 financial integrity as a business that acquires, transmits, and distributes gas.<sup>58</sup> The Office  
7 of People's Counsel projects that WGL will seek to spend an estimated additional \$9  
8 billion in capital costs out to the year 2100.<sup>59</sup> More importantly, the financial impacts of  
9 current spending, including spending to increase gas delivery and use, have a long  
10 "tail"—depreciation and maintenance costs that extend for decades—due to the long-  
11 lived nature of gas infrastructure. Mr. Yardley does not address the increased costs  
12 Marylanders will bear due to climate change and other environmental and health impacts  
13 associated with the Company's fossil methane gas business. Mr. Yardley does not address  
14 the future decommissioning and potentially stranded costs associated with gas  
15 infrastructure that Marylanders simply will not be able to afford to use, or the  
16 distributional equity impacts of saddling "stranded customers"—customers that cannot  
17 afford to transition to electrified appliances and services—during the coming years.  
18 Although the Company has ignored the financial implications of Maryland's climate

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<sup>57</sup> Yardley direct at 4:15-17.

<sup>58</sup> Yardley direct at 4:21 through 5:3.

<sup>59</sup> Maryland Office of People's Counsel, *Maryland Gas Utility Spending: Projections and Analysis* (Oct. 2022) at 2, Table 1.2, available at: [https://opc.maryland.gov/Portals/0/Files/Publications/Reports/Report%20on%20GasUtilitySpending%2010-5-22%20Final.pdf?ver=YmuLxscCifs4\\_S5Oryfwqg%3d%3d](https://opc.maryland.gov/Portals/0/Files/Publications/Reports/Report%20on%20GasUtilitySpending%2010-5-22%20Final.pdf?ver=YmuLxscCifs4_S5Oryfwqg%3d%3d).

1 policy on its business, the Office of People’s Counsel (“OPC”) has not. As OPC has  
2 pointed out in a recent report based on an expert study:<sup>60</sup>

3 To achieve net zero GHG emissions by 2045, the vast majority of buildings will  
4 have to either fully electrify their loads or use alternative gaseous fuels for any  
5 gas needs, including backup heating. Buildings are relatively low-cost to electrify  
6 with commercially available technologies. On the other hand, the most likely  
7 candidates for alternative gaseous fuels pose issues related to cost, availability,  
8 emissions, safety, and energy use during production. However, certain end-uses  
9 would be far more expensive to electrify or have no viable electric alternatives.  
10 Given these considerations, it is important to consider how alternative gaseous  
11 fuels should be used.

12 This analysis casts grave doubts on WGL’s assertion that its business will continue to  
13 contribute positively to Maryland’s economy in the absence of a fundamental change in  
14 WGL’s approach.

15 *Conservation of Natural Resources:* Company witness Yardley asserts that the  
16 Conservation of Natural Resources prong of the PUA § 2-113 standards relates to  
17 promotion of efficient use and to preservation of the environment.<sup>61</sup> Mr. Yardley points to  
18 the Company’s energy efficiency program offerings under EmPOWER Maryland, and to  
19 the Company’s recently launched biomethane (RNG) program as evidence that the  
20 Company is serving the public interest as related to conservation of natural resources.<sup>62</sup>  
21 Mr. Yardley cites a Company estimate that it has helped customers save 13.34 mmillion  
22 therms of gas from 2015 through early 2023.<sup>63</sup> To put this in perspective, and favorably

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<sup>60</sup> OPC, *Climate Policy for Maryland’s Gas Utilities: Financial Implications* (“OPC Climate Policy Financial Study”) (Nov. 2022) at 2, available at: [https://opc.maryland.gov/Portals/0/Files/Publications/Reports/MDFutureGasReport%20FINAL.pdf?ver=IKcLN0p\\_148NtsVsj2A0Og%3d%3d](https://opc.maryland.gov/Portals/0/Files/Publications/Reports/MDFutureGasReport%20FINAL.pdf?ver=IKcLN0p_148NtsVsj2A0Og%3d%3d). (citation omitted)

<sup>61</sup> Yardley direct 7:2-10.

<sup>62</sup> *Id.* at 7:13-17.

<sup>63</sup> *Id.* at 7:20-24.

1 assuming emissions rates in 2015-2017 were about the same as the average of those in  
2 2018-2022, the 13.34 million therms savings equals about 70,582 mtCO<sub>2</sub>e in avoided  
3 GHG emissions, or about one half of one percent (0.53%) of the Company's Scope 3  
4 emissions during the years 2015-2022.<sup>64</sup> Mr. Yardley offers no quantified benefits, costs,  
5 or cost-effectiveness calculations relating to the Company's early-stage biomethane  
6 efforts,<sup>65</sup> and provides no explanation about how the Company's biomethane program  
7 overcomes or will overcome the significant challenges associated with biomethane.<sup>66</sup>  
8 Taken together, the basis for the Company's assertion that it is advancing the public  
9 interest through conservation of natural resources is extremely thin, unsupported with  
10 data, and insufficient to support a finding that the Company's efforts contribute to the  
11 public interest net of costs.

12 *Preservation of Environmental Quality and Protection of the Global Climate:* The  
13 Company asserts that three programs contribute to achievement of the Environmental  
14 Quality and Protection of the Climate factor. The first program, called the Certified  
15 Natural Gas ("CtNG") involves the Company securing some gas supply that has been  
16 certified against the MiQ standard relating to methane releases during fossil gas  
17 production.<sup>67</sup> The Company provides no information relating to the level of GHG  
18 benefits obtained by procuring MiQ-certified fossil gas, what percentage of methane  
19 emissions was avoided, the cost or cost-effectiveness of the effort, or even what share of

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<sup>64</sup> Calculated as  $70,582 / (((2,002,167 + 1,883,639 + 1,803,385 + 1,896,680 + 1,981,271) / 5) \times 2) + (2,002,167 + 1,883,639 + 1,803,385 + 1,896,680 + 1,981,271))$

<sup>65</sup> Yardley direct at 8:1-10.

<sup>66</sup> See OPC Climate Policy Financial Study at § 3.3.

<sup>67</sup> Yardley direct at 8:20 through 9:6. See <https://miq.org>.

1 total procured supply earned the MiQ certification. The Company has provided  
2 insufficient evidence to support its assertion that its procurement of MiQ-certified fossil  
3 gas serves the public interest. The second program is a direct emissions measurement  
4 program that WGL participates in through the Gas Technology Institute, and is aimed at  
5 more accurate measurement and assessment of GHG emissions from the Company's gas  
6 distribution system, but not actual reductions.<sup>68</sup> The Company provides no evidence that  
7 the program has yielded any usable information to date, and the Company does not track  
8 GHG emissions in a useful manner today.<sup>69</sup> The Company has provided insufficient  
9 evidence to support its assertion that its participation in the direct emissions measurement  
10 program serves the public interest. The third program propounded by the Company as  
11 serving the public interest inherent in preservation of environmental quality and climate  
12 protection is a methane capture and reinjection program that utilizes drawdown  
13 compressors to reduce gas venting or flaring by capturing isolated gas during various  
14 maintenance and operation activities.<sup>70</sup> Avoiding gas venting or flaring does reduce  
15 methane and other GHG emissions as compared to business-as-usual approaches. The  
16 Company's goal for the 2023 methane capture and reinjection program is recovery of  
17 700,000 cubic feet of gas,<sup>71</sup> and if the assumption is that all that gas would have been  
18 released into the environment as methane, the program will avoid 38.5 mtCO<sub>2</sub>e in GHG  
19 emissions. This reduction is tiny—about 0.012 percent—compared to the Company's  
20 331,637 mtCO<sub>2</sub>e in GHG emissions in 2021. The Company provides no evidence as to

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<sup>68</sup> *Id.* at 9:7-21.

<sup>69</sup> Company response to Staff DR 8-15.

<sup>70</sup> Yardley direct at 10:1-14.

<sup>71</sup> *Id.*

1 the cost or cost-effectiveness of its capture and reinjection program, or its potential in  
2 significantly reducing emissions in the future. Of course, the gas that the Company  
3 captures in the program is intended for both sale and combustion. The Company has  
4 provided insufficient evidence to support its assertion that its methane capture and  
5 reinjection program serves the public interest.

6 *Achievement of Maryland's GHG Reduction Goals:* The Company asserts that its rate  
7 case application is consistent with the CSNA because it offers incentives to customers for  
8 the purchase of more-efficient-than-average gas appliances, and because the Commission  
9 approved such incentives in Case No. 9648, relating to EmPOWER Maryland funding,<sup>72</sup>  
10 because of GHG emissions reductions resulting from the STRIDE program,<sup>73</sup> and  
11 because the Company plans to procure and pilot two to four hydrogen fuel cell vehicles,  
12 participate in a federally-funded hydrogen hub initiative, and because it is proposing  
13 elimination of its declining block structure for residential customers.<sup>74</sup> According to a  
14 report issued by OPC in May 2023, WGL had failed to meet its gas savings forecast as of  
15 the date of its Q3-Q4 2022 Semi-Annual EmPOWER report.<sup>75</sup> I agree with the OPC-  
16 sponsored report that “[e]ach year Maryland continues to use utility customer funding to  
17 provide incentives for installation of gas equipment makes it more difficult and more

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<sup>72</sup> *Id.* at 10:23 through 11:9.

<sup>73</sup> *Id.* at 11:10-13.

<sup>74</sup> *Id.* at 11:13 through 12:17.

<sup>75</sup> Commission, *The EmPOWER Maryland Energy Efficiency Act Report of 2023* (Jun. 2023), available at: <https://www.psc.state.md.us/wp-content/uploads/2023-EmPOWER-Maryland-Energy-Efficiency-Act-Standard-Report.pdf>; OPC, *EmPOWER Maryland: 2022 Performance and Recommendations for Improvement* (May 5, 2023) at 25, available at: <https://opc.maryland.gov/LinkClick.aspx?fileticket=oQEVpVcGI5U%3d&tabid=51&portalid=0&mid=1487>.



1           costly to achieve necessary GHG reductions.”<sup>76</sup> In my opinion, the Company should, on  
2           its own accord and in keeping with its stated goal of reducing GHG emission, stop  
3           providing incentives for increased long-term gas use by its customers. In addition, the  
4           Commission should revisit its position requiring customers to pay for such incentives and  
5           frustrating the accomplishment of CSNA goals.<sup>77</sup> I have already addressed the egregious  
6           costs associated with GHG reductions from leak management programs. The opportunity  
7           costs associated with such spending, in terms of GHG reductions and progress towards  
8           CSNA goals is unjustifiable. The planned hydrogen fuel cell pilot and associated  
9           hydrogen production efforts are unsupported by data or other evidence of costs, benefits,  
10          effectiveness, or potential in meeting CSNA goals. No data or evidence of costs, benefits,  
11          effectiveness, or potential is provided for the hydrogen hub initiative. A flat rate design is  
12          a long-overdue change in rate design and should result in incremental usage reductions,  
13          but is also unsupported by data. The Company has provided insufficient evidence to  
14          support its assertion that its STRIDE and hydrogen program plans serves the public  
15          interest by ensuring CSNA goals will be met in a timely and cost-effective manner.

16   **Q.     Has WGL evaluation metrics for its various GHG-related programs?**

17   A.     No. In response to a request for emissions reductions data, budgeted spending, cost per  
18          therm in gas usage reductions, cost per unit of emissions reductions, and other key

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<sup>76</sup> *Id.* at 5. WGL offers rebates of up to \$460 for new furnaces, \$805 for new boilers, \$460 for new water heaters, and \$90 for new dryers. WGL, *Programs and Rebates*, available at: <https://wgsmartsavings.com/programs-rebates/home/md> (last visited August 25, 2023)

<sup>77</sup> OPC also recommended elimination of EmPOWER incentives for gas appliance purchases

1 evaluation criteria associated with its various programs, WGL asserts that the facts are  
2 not in evidence and would require a special study.<sup>78</sup>

3 **Q. Should WGL conduct such a study?**

4 A. Yes. The Commission should direct WGL to thoroughly document the programs for  
5 which it seeks customer funding against all the factors that I listed, and perhaps more.  
6 Such an accounting would be prudent, and proceeding to add to the Company's revenue  
7 without such an accounting would be imprudent.

8 **V. COMPANY ACTIONS TO PROMOTE INCREASED GAS USE**

9 **Q. You testified earlier that WGL is installing service extensions and connecting new**  
10 **gas customers at significant cost to existing customers and with the added risk of**  
11 **future stranded costs related to decarbonization. Is the Company doing anything**  
12 **else to promote gas usage by existing customers?**

13 A. Yes. The Company denies that it takes actions to promote gas use.<sup>79</sup> The Company  
14 provides a wide range of information to its customers through various channels that make  
15 no mention of CSNA goals, GHG emissions, the need to transition away from fossil fuel  
16 use, or the risks of stranded investments when the transition is undertaken.<sup>80</sup> In this  
17 regard, I support efforts by the OPC to hold the Company accountable for using rate  
18 payer funds to promote gas use, and reprise my recommendation that Section 14 of  
19 WGL's tariff be amended to eliminate the practice of subsidizing new service extensions.

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<sup>78</sup> Company response to CCAN DR 1-15.

<sup>79</sup> Company response to CCAN DR 1-12.

<sup>80</sup> Company response to OPC DR 7-10.

**VI. WHAT IS MISSING IN THE COMPANY’S APPROACH**

**Q. You have discussed the information and asserted justifications for programs and spending offered by WGL in this case. In your opinion, what is missing from the Company’s approach?**

A. The Company’s rate application is fundamentally deficient and not aligned with Maryland climate and energy policy. WGL is focused on and forecasts continued spending on and growth in its fossil methane business, and is only nibbling around the edges of the GHG reductions it must make and support. Maryland’s transition to an economy and society that is not dependent on fossil carbon for its energy resources is both inevitable and increasingly proximate. WGL “has not conducted or commissioned any study specifically relating to Company-specific impacts the Company could reasonably expect to experience as a result of electrification out to the year 2050 of residential and commercial gas uses on gas distribution utility sales, customer counts, revenues, earnings, and other key factors.”<sup>81</sup> Nor has the Company assessed whether its customers will experience adverse economic impacts associated with electrification, though generally its view is that it “will depend.”<sup>82</sup> WGL states that it does not know how its proposed GHG-related spending will impact the level of gas use, the number of customers taking gas service, or the potential for stranded gas system costs because “there is no formal electrification plan or even [any] known likely scenarios of electrification.”<sup>83</sup>

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<sup>81</sup> Company response to CCAN DR 2-2.

<sup>82</sup> Company response to CCAN DR 2-3.

<sup>83</sup> Company response to CCAN DR 2-4.

1 **Q. What is missing in this application?**

2 A. The Company's application fails to demonstrate that it has objectively analyzed the  
3 downside risks it faces as a business and the need to be proactive and innovative in  
4 assessing risk and growing a business that no longer depends on the delivery and  
5 combustion of fossil methane gas, RNG or hydrogen. As explained in detail by the Brattle  
6 Group in its series on The Future of Gas Utilities, waiting is not an option for WGL or its  
7 customers.<sup>84</sup> The Company should have used this rate application to put forth a cogent  
8 and realistic plan for managed decapitalization of its fossil methane gas business and for  
9 its exit or for a new approach to provide climate-responsible energy services. Failing to  
10 address the necessary issues of infrastructure decommissioning, conversion of existing  
11 assets for use in a clean fuel system,<sup>85</sup> spending reductions, ending subsidies for  
12 increased gas use, equitable allocation of transition burdens and opportunities, adequacy  
13 of supply, and many others is simply imprudent in the face of the rapidly approaching  
14 CSNA deadlines. Using the subject matter titles of the Brattle series, what is missing in  
15 the Company's approach and application are three things: (1) Clear-eyed, objective, and  
16 transparent assessment of risks, including appreciation that its mostly residential and  
17 commercial customer base is primed for and already engaging in electrification;<sup>86</sup> (2)

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<sup>84</sup> Brattle, *The Future of Gas Utilities Series: Transitioning Gas Utilities to a Decarbonized Future* (Aug. 2021), available at: <https://www.brattle.com/insights-events/publications/the-future-of-gas-utilities-series/>

<sup>85</sup> See, e.g., McKinsey & Company, *Decarbonizing US Gas Utilities: The Potential Role of a Clean-Fuels System in the Energy Transition* (Mar. 2, 2022), available at: <https://www.mckinsey.com/industries/electric-power-and-natural-gas/our-insights/decarbonizing-us-gas-utilities-the-potential-role-of-a-clean-fuels-system-in-the-energy-transition>.

<sup>86</sup> WGL's parent company, AltaGas, provides a high-level overview of climate and climate-related risks in its 2022 Annual Information Form, but those issues are not discussed in this rate application. See AltaGas Ltd., *Annual Information Form for the Year Ended December 21, 2022* (Mar. 1, 2023) at 54-56, available at: [https://www.altagas.ca/sites/default/files/2023-03/AltaGas-Ltd\\_AIF%202022.pdf](https://www.altagas.ca/sites/default/files/2023-03/AltaGas-Ltd_AIF%202022.pdf).

1 Objective and transparent evaluation of business strategies and pathway options; and (3)  
2 Meaningful and practical proposals for regulatory transformation to accompany the  
3 transition away from fossil fuels.

4 **Q. What are the risks to Marylanders and the Maryland economy if WGL fails to plan**  
5 **for and lead in implementing a transition strategy?**

6 A. As with all pure-play gas utilities in a rapidly warming world, the risks of adverse  
7 economic impacts are enormous for WGL and its customers. It would be unreasonable  
8 and irresponsible to its shareholders for WGL to assume that it can continue as it always  
9 has in the future. The economic dislocation that would result from “kicking the can down  
10 the road” on the transition could be immense, regardless of who bears the ultimate costs.  
11 The opportunity costs of not embracing the transition are likewise immense, and  
12 Maryland could be at risk of losing its climate leadership role. Instead of managing the  
13 distribution of opportunity, the Commission itself could face a future of distributing  
14 privation.

15 **VII. RECOMMENDED COMMISSION ACTION ON THE COMPANY’S**  
16 **GHG-RELATED PROPOSALS**

17 **Q. How should the Commission act on WGL’s application to increase rates in this**  
18 **proceeding?**

19 A. Each of the Company’s GHG-related programs has the potential to cost-effectively  
20 reduce at least a small amount of GHG emissions related to WGL’s operations and  
21 provided gas services. However, as this testimony demonstrates, the present and future  
22 cost-effectiveness and efficacy of the program efforts is unsupported in this record. I  
23 therefore recommend that the Commission only approve the inclusion of those program

1 costs in the revenue requirement in this proceeding conditioned upon WGL providing  
2 comprehensive documentation of the programs, their underlying cost-effectiveness  
3 evaluation, and all metrics and future plans for the programs.

4 **Q. What direction should the Commission give to WGL?**

5 A. WGL has not taken seriously its roles in the transition away from fossil fuel use and has  
6 not acted prudently in developing strategies and plans to do its part in the face of rapidly  
7 accelerating climate change. A major problem revealed in this application and in the  
8 Company's responses to discovery requests is that WGL appears to need clear and  
9 specific direction from the Commission in order to right its course. With that in mind, I  
10 recommend that the Commission direct WGL to:

- 11 • Develop scorecards and metrics for GHG emissions and emissions reductions that track  
12 progress in line with CSNA goals. Develop, publish, and annually update emissions rates for  
13 Scope 1, 2, and 3 emissions.
- 14 • Develop, apply, and report on results of cost-effectiveness evaluation tools to inform  
15 program priorities and spending proposals.
- 16 • Stop promoting gas use, including through incomplete customer information publications.
- 17 • Develop a thorough risk assessment relating to a transition to non-fossil fuels, with and  
18 without cost-effective alternative (non-fossil) gaseous fuels.
- 19 • Develop a strategic plan for navigating the transition and supporting achievement of CSNA  
20 goals.

- 1           • Take a leading role, along with other gas service providers, in crafting a plan for
- 2           transformation of the gas delivery industry into a new generation of energy services
- 3           providers.
- 4           • Propose changes to section 14 of the General Services Provisions of its existing Maryland
- 5           Tariff<sup>87</sup> to end the practice of charging customers for system expansions and new service
- 6           connections, and to account for the practical necessity of a move to electrification from gas
- 7           service uses.
- 8           • Develop objective information and resources for customers seeking to move forward with
- 9           electrification in accordance with CSNA goals.

10  
11   **Q.     Does this conclude your direct testimony?**

12   A.     Yes

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<sup>87</sup> WGL, *Maryland Rate Schedules and General Service Provisions for Gas Service*, § 14 Economic Valuation of Facilities Extension, available at: <https://www.washingtongas.com/-/media/c47ffb9d1ec443f6af6592d10a7e0cd5.pdf>.

Before the Maryland Public Service Commission  
Case No. 9704

**Chesapeake Climate Action Network**

**Exhibit KR-1**

**Resume of Karl R. Rábago**



## **Karl R. Rábago**

### **Rábago Energy LLC**

1350 Gaylord Street, Denver, Colorado 80206-2114  
c/SMS: +1.512.968.7543 | e: [rabago@me.com](mailto:rabago@me.com) | [rabagoenergy.com](http://rabagoenergy.com)

Nationally recognized leader and innovator in electricity and energy law, policy, and regulation. Experienced as a regulatory expert, utility executive, research and development manager, sustainability leader, senior government official, educator, and advocate. Law teaching experience at Pace University Elisabeth Haub School of Law, University of Houston Law Center, and U.S. Military Academy at West Point. Military veteran.

## **Employment**

### **RÁBAGO ENERGY LLC**

Principal: July 2012—Present. Consulting practice dedicated to providing business sustainability, expert witness, and regulatory advice and services to organizations in the clean and advanced energy sectors. Prepared and submitted testimony in more than 35 jurisdictions and 165 electricity and gas regulatory proceedings. Recognized national leader in development and implementation of innovative “Value of Solar” alternative to traditional net metering. Additional information at [rabagoenergy.com](http://rabagoenergy.com).

- Director, Colorado Electric Transmission Authority (2022-present).
- Chairman of the Board, Center for Resource Solutions (1997-present). Past chair of the Green-e Governance Board.
- Director, Solar United Neighbors (2018-present).
- Advisor, Commission Shift (2021-present).
- Director, Texas Solar Energy Society (2022-present).

### **PACE ENERGY AND CLIMATE CENTER, PACE UNIVERSITY ELISABETH HAUB SCHOOL OF LAW**

Senior Policy Advisor: September 2019—September 2020. Part-time advisor and staff member. Provided transitional expert witness, project management, and business development support on electric and gas regulatory and policy issues and activities.

Executive Director: May 2014—August 2019. Leader of a team of professional and technical experts and law students in energy and climate law, policy, and regulation. Secured funding for and managed execution of regulatory intervention, research, market development support, and advisory services. Taught Energy Law. Provided learning and development opportunities for law students. Additional activities:

- Director, Alliance for Clean Energy – New York (2018-2019).
- Director, Interstate Renewable Energy Council (IREC) (2012-2018).
- Co-Director and Principal Investigator, Northeast Solar Energy Market Coalition (2015-2017). The NESEMC was a US Department of Energy’s SunShot Initiative Solar Market Pathways project. Funded under a cooperative agreement between the US DOE and Pace University, the NESEMC worked to harmonize solar market policy and advance supportive policy and regulatory practices in the northeast United States.

## **Karl R. Rábago**

### **AUSTIN ENERGY – THE CITY OF AUSTIN, TEXAS**

Vice President, Distributed Energy Services: April 2009—June 2012. Executive in one of the largest public power electric utilities, serving more than one million people in central Texas. Responsible for management and oversight of energy efficiency, demand response, and conservation programs; low-income weatherization; distributed solar and other renewable energy technologies; green buildings program; key accounts relationships; electric vehicle infrastructure; and market research and product development. Executive sponsor of Austin Energy's participation in an innovative federally funded smart grid demonstration project led by the Pecan Street Project. Led teams that successfully secured over \$39 million in federal stimulus funds for energy efficiency, smart grid, and advanced electric transportation initiatives. Additional activities included:

- Director, Renewable Energy Markets Association. REMA is a trade association dedicated to maintaining and strengthening renewable energy markets in the United States.
- Member, Pedernales Electric Cooperative Member Advisory Board. Invited by the Board of Directors to sit on first-ever board to provide formal input and guidance on energy efficiency and renewable energy issues for the nation's largest electric cooperative.

### **THE AES CORPORATION**

Director, Government & Regulatory Affairs: June 2006—December 2008. Director, Global Regulatory Affairs, provided regulatory support and group management to AES's international electric utility operations on five continents. Managing Director, Standards and Practices, for Greenhouse Gas Services, LLC, a GE Energy and AES venture committed to generating and marketing voluntary market greenhouse gas credits. Government and regulatory affairs manager for AES Wind Generation. Managed a portfolio of regulatory and legislative initiatives to support wind energy market development in Texas, across the United States, and in many international markets.

### **JICARILLA APACHE NATION UTILITY AUTHORITY**

Director: 1998—2008. Located in New Mexico, the JANUA was an independent utility developing profitable and autonomous utility services that provided natural gas, water utility services, low-income housing, and energy planning for the Nation. Authored "First Steps" renewable energy and energy efficiency strategic plan with support from U.S. Department of Energy.

### **HOUSTON ADVANCED RESEARCH CENTER**

Group Director, Energy and Buildings Solutions: December 2003—May 2006. Leader of energy and building science staff at a mission-driven not-for-profit contract research organization based in The Woodlands, Texas. Responsible for developing, maintaining, and expanding on technology development, application, and commercialization support programmatic activities, including the Center for Fuel Cell Research and Applications; the Gulf Coast Combined Heat and Power Application Center; and the High-Performance Green Buildings Practice. Secured funding for major new initiative in carbon nanotechnology applications in the energy sector.

- President, Texas Renewable Energy Industries Association. As elected president of the statewide business association, led and managed successful efforts to secure and implement significant expansion of the state's renewable portfolio standard as well as other policy, regulatory, and market development activities.
- Director, Southwest Biofuels Initiative. Established the Initiative as an umbrella structure for multiple biofuels related projects.

## **Karl R. Rábago**

- Member, Committee to Study the Environmental Impacts of Wind Power, National Academies of Science National Research Council. The Committee was chartered by Congress and the Council on Environmental Quality to assess the impacts of wind power on the environment.
- Advisory Board Member, Environmental & Energy Law & Policy Journal, University of Houston Law Center.

### **CARGILL DOW LLC (NOW NATUREWORKS, LLC)**

Sustainability Alliances Leader: April 2002—December 2003. Integrated sustainability principles into all aspects of a ground-breaking bio-based polymer manufacturing venture. Responsible for maintaining, enhancing, and building relationships with stakeholders in the worldwide sustainability community, as well as managing corporate and external sustainability initiatives.

- Successfully completed Minnesota Management Institute at University of Minnesota Carlson School of Management, an alternative to an executive MBA program that surveyed fundamentals and new developments in finance, accounting, operations management, strategic planning, and human resource management.

### **ROCKY MOUNTAIN INSTITUTE**

Managing Director/Principal: October 1999—April 2002. Co-authored “Small Is Profitable,” a comprehensive analysis of the benefits of distributed energy resources. Provided consulting and advisory services to help business and government clients achieve sustainability through application and incorporation of Natural Capitalism principles.

- President of the Board, Texas Ratepayers Organization to Save Energy. Texas R.O.S.E. is a non-profit organization advocating low-income consumer issues and energy efficiency programs.
- Co-Founder and Chair of the Advisory Board, Renewable Energy Policy Project-Center for Renewable Energy and Sustainable Technology. REPP-CREST was a national non-profit research and internet services organization.

### **CH2M HILL**

Vice President, Energy, Environment and Systems Group: July 1998—August 1999. Responsible for providing consulting services to a wide range of energy-related businesses and organizations, and for creating new business opportunities in the energy industry for an established engineering and consulting firm. Completed comprehensive electric utility restructuring studies for Colorado and Alaska.

### **PLANERGY**

Vice President, New Energy Markets: January 1998—July 1998. Responsible for developing and managing new business opportunities for the energy services market. Provided consulting and advisory services to utility and energy service companies.

### **ENVIRONMENTAL DEFENSE FUND**

Energy Program Manager: March 1996—January 1998. Managed renewable energy, energy efficiency, and electric utility restructuring programs. Led regulatory intervention activities in Texas and California. In Texas, played a key role in crafting Deliberative Polling processes. Participated in national environmental and energy advocacy networks, including the Energy Advocates Network, the National Wind Coordinating Committee, the NCSL Advisory Committee on Energy, and the PV-COMPACT Coordinating Council. Frequently appeared before the Texas Legislature, Austin City Council, and regulatory commissions on electric restructuring issues.

## **Karl R. Rábago**

### **UNITED STATES DEPARTMENT OF ENERGY**

Deputy Assistant Secretary, Utility Technologies: January 1995–March 1996. Manager of the Department's programs in renewable energy technologies and systems, electric energy systems, energy efficiency, and integrated resource planning. Supervised technology research, development and deployment activities in photovoltaics, wind energy, geothermal energy, solar thermal energy, biomass energy, high-temperature superconductivity, transmission and distribution, hydrogen, and electric and magnetic fields. Managed, coordinated, and developed international agreements. Supervised development and deployment support activities at national laboratories. Developed, advocated, and managed a Congressional budget appropriation of approximately \$300 million.

### **STATE OF TEXAS**

Commissioner, Public Utility Commission of Texas. May 1992–December 1994. Appointed by Governor Ann W. Richards. Regulated electric and telephone utilities in Texas. Co-chair and organizer of the Texas Sustainable Energy Development Council. Vice-Chair of the National Association of Regulatory Utility Commissioners (NARUC) Committee on Energy Conservation. Member and co-creator of the Photovoltaic Collaborative Market Project to Accelerate Commercial Technology (PV-COMPACT).

### **LAW TEACHING**

**Professor for a Designated Service:** Pace University Elisabeth Haub School of Law, 2014-2019. Non-tenured member of faculty. Taught Energy Law. Supervised a student intern practice.

**Associate Professor of Law:** University of Houston Law Center, 1990–1992. Full time, tenure track member of faculty. Courses taught: Criminal Law, Environmental Law, Criminal Procedure, Environmental Crimes Seminar, Wildlife Protection Law.

**Assistant Professor:** United States Military Academy, West Point, New York, 1988–1990. Member of the faculty in the Department of Law. Honorably discharged in August 1990, as Major in the Regular Army. Courses taught: Constitutional Law, Military Law, and Environmental Law Seminar.

### **LITIGATION**

Trial Defense Attorney and Prosecutor, U.S. Army Judge Advocate General's Corps, Fort Polk, Louisiana, January 1985–July 1987. Assigned to Trial Defense Service and Office of the Staff Judge Advocate.

### **NON-LEGAL MILITARY SERVICE**

Armored Cavalry Officer, 2d Squadron 9<sup>th</sup> Armored Cavalry, Fort Stewart, Georgia, May 1978–August 1981. Served as Logistics Staff Officer (S-4). Managed budget, supplies, fuel, ammunition, and other support for an Armored Cavalry Squadron. Served as Support Platoon Leader for the Squadron (logistical support), and as line Platoon Leader in an Armored Cavalry Troop. Graduate of Airborne and Ranger Schools. Special training in Air Mobilization Planning and Nuclear, Biological and Chemical Warfare.

## **Karl R. Rábago**

### **Formal Education**

**LL.M., Environmental Law, Pace University School of Law, 1990:** Curriculum designed to provide breadth and depth in study of theoretical and practical aspects of environmental law. Courses included: International and Comparative Environmental Law, Conservation Law, Land Use Law, Seminar in Electric Utility Regulation, Scientific and Technical Issues Affecting Environmental Law, Environmental Regulation of Real Estate, Hazardous Wastes Law. Individual research with Hudson Riverkeeper Fund, Garrison, New York, on federal regulation of cooling water intake structures for electric power plants.

**LL.M., Military Law, U.S. Army Judge Advocate General's School, 1988:** Curriculum designed to prepare Judge Advocates for senior level staff service. Courses included: Administrative Law, Defensive Federal Litigation, Government Information Practices, Advanced Federal Litigation, Federal Tort Claims Act Seminar, Legal Writing and Communications, Comparative International Law.

**J.D. with Honors, University of Texas School of Law, 1984:** Attended law school under the U.S. Army Funded Legal Education Program, a fully funded scholarship awarded to 25 or fewer officers each year. Served as Editor-in-Chief (1983–84); Articles Editor (1982–83); Member (1982) of the Review of Litigation. Moot Court, Mock Trial, Board of Advocates. Summer internship at Staff Judge Advocate's offices. Prosecuted first cases prior to entering law school.

**B.B.A., Business Management, Texas A&M University, 1977:** ROTC Scholarship (3–yr). Member: Corps of Cadets, Parson's Mounted Cavalry, Wings & Sabers Scholarship Society, Rudder's Rangers, Town Hall Society, Freshman Honor Society, Alpha Phi Omega service fraternity.

## Karl R. Rábago

### Selected Publications

*The Future of Decentralized Electricity Distribution Networks: Ch. 14 – Performance-Based Regulation to Drive Transformation and Encourage DER Market Growth*, contributing co-author with Jesse Hitchcock, Elsevier (2023).

*Climate Change Law: An Introduction*, contributing author (Introduction to Energy Law), Elgar (2021).

*Distributed Generation Law*, contributing author, American Bar Association Environment, Energy, and Resources Section (August 2020)

*National Standard Practice Manual for Benefit-Cost Analysis of Distributed Energy Resources*, contributing author, National Energy Screening Project (August 2020)

*Achieving 100% Renewables: Supply-Shaping through Curtailment*, with Richard Perez, Marc Perez, and Morgan Putnam, PV Tech Power, Vol. 19 (May 2019).

*A Radical Idea to Get a High-Renewable Electric Grid: Build Way More Solar and Wind than Needed*, with Richard Perez, The Conversation, online at <http://bit.ly/2YjnM15> (May 29, 2019).

*Reversing Energy System Inequity: Urgency and Opportunity During the Clean Energy Transition*, with John Howat, John Colgan, Wendy Gerlitz, and Melanie Santiago-Mosier, National Consumer Law Center, online at [www.nclc.org](http://www.nclc.org) (Feb. 26, 2019).

*Revisiting Bonbright's Principles of Public Utility Rates in a DER World*, with Radina Valova, The Electricity Journal, Vol. 31, Issue 8, pp. 9-13 (Oct. 2018).

*Achieving very high PV penetration – The need for an effective electricity remuneration framework and a central role for grid operators*, with Richard Perez (corresponding author), Energy Policy, Vol. 96, pp. 27-35 (2016).

*The Net Metering Riddle*, Electricity Policy.com, April 2016.

*The Clean Power Plan*, Power Engineering Magazine (invited editorial), Vol. 119, Issue 12 (Dec. 2, 2015)

*The 'Sharing Utility:' Enabling & Rewarding Utility Performance, Service & Value in a Distributed Energy Age*, co-author, 51<sup>st</sup> State Initiative, Solar Electric Power Association (Feb. 27, 2015)

*Rethinking the Grid: Encouraging Distributed Generation*, Building Energy Magazine, Vol. 33, No. 1 Northeast Sustainable Energy Association (Spring 2015)

*The Value of Solar Tariff: Net Metering 2.0*, The ICER Chronicle, Ed. 1, p. 46 [International Confederation of Energy Regulators] (December 2013)

*A Regulator's Guidebook: Calculating the Benefits and Costs of Distributed Solar Generation*, co-author with Jason Keyes, Interstate Renewable Energy Council (October 2013)

*The 'Value of Solar' Rate: Designing an Improved Residential Solar Tariff*, Solar Industry, Vol. 6, No. 1 (Feb. 2013)

*Jicarilla Apache Nation Utility Authority Strategic Plan for Energy Efficiency and Renewable Energy Development*, lead author & project manager, U.S. Department of Energy First Steps Toward Developing Renewable Energy and Energy Efficiency on Tribal Lands Program (2008)

*A Review of Barriers to Biofuels Market Development in the United States*, 2 Environmental & Energy Law & Policy Journal 179 (2008)

*A Strategy for Developing Stationary Biodiesel Generation*, Cumberland Law Review, Vol. 36, p.461 (2006)

## Karl R. Rábago

*Evaluating Fuel Cell Performance through Industry Collaboration*, co-author, Fuel Cell Magazine (2005)

*Applications of Life Cycle Assessment to NatureWorks™ Polylactide (PLA) Production*, co-author, Polymer Degradation and Stability 80, 403-19 (2003)

*An Energy Resource Investment Strategy for the City of San Francisco: Scenario Analysis of Alternative Electric Resource Options*, contributing author, Prepared for the San Francisco Public Utilities Commission, Rocky Mountain Institute (2002)

*Small Is Profitable: The Hidden Economic Benefits of Making Electrical Resources the Right Size*, co-author, Rocky Mountain Institute (2002)

*Socio-Economic and Legal Issues Related to an Evaluation of the Regulatory Structure of the Retail Electric Industry in the State of Colorado*, with Thomas E. Feiler, Colorado Public Utilities Commission and Colorado Electricity Advisory Panel (April 1, 1999)

*Study of Electric Utility Restructuring in Alaska*, with Thomas E. Feiler, Legislative Joint Committee on electric Restructuring and the Alaska Public Utilities Commission (April 1, 1999)

*New Markets and New Opportunities: Competition in the Electric Industry Opens the Way for Renewables and Empowers Customers*, EEBA Excellence (Journal of the Energy Efficient Building Association) (Summer 1998)

*Building a Better Future: Why Public Support for Renewable Energy Makes Sense*, Spectrum: The Journal of State Government (Spring 1998)

*The Green-e Program: An Opportunity for Customers*, with Ryan Wiser and Jan Hamrin, Electricity Journal, Vol. 11, No. 1 (January/February 1998)

*Being Virtual: Beyond Restructuring and How We Get There*, Proceedings of the First Symposium on the Virtual Utility, Kluwer Press (1997)

*Information Technology*, Public Utilities Fortnightly (March 15, 1996)

*Better Decisions with Better Information: The Promise of GIS*, with James P. Spiers, Public Utilities Fortnightly (November 1, 1993)

*The Regulatory Environment for Utility Energy Efficiency Programs*, Proceedings of the Meeting on the Efficient Use of Electric Energy, Inter-American Development Bank (May 1993)

*An Alternative Framework for Low-Income Electric Ratepayer Services*, with Danielle Jaussaud and Stephen Benenson, Proceedings of the Fourth National Conference on Integrated Resource Planning, National Association of Regulatory Utility Commissioners (September 1992)

*What Comes Out Must Go In: The Federal Non-Regulation of Cooling Water Intakes Under Section 316 of the Clean Water Act*, Harvard Environmental Law Review, Vol. 16, p. 429 (1992)

*Least Cost Electricity for Texas*, State Bar of Texas Environmental Law Journal, Vol. 22, p. 93 (1992)

*Environmental Costs of Electricity*, Pace University School of Law, Contributor–Impingement and Entrainment Impacts, Oceana Publications, Inc. (1990)

Before the Maryland Public Service Commission  
Case No. 9704

**Chesapeake Climate Action Network**

**Exhibit KR-2**

**Previous testimony of Karl R. Rábago**



**Testimony Submitted by Karl R. Rábago**

**(as of 1 August 2023)**

<b>Date</b>	<b>Proceeding</b>	<b>Case/Docket #</b>	<b>On Behalf Of:</b>
Dec. 21, 2012	VA Electric & Power Special Solar Power Tariff	Virginia State Corporation Commission Case # PUE-2012-00064	Southern Environmental Law Center
May 10, 2013	Georgia Power Company 2013 IRP	Georgia Public Service Commission Docket # 36498	Georgia Solar Energy Industries Association
Jun. 23, 2013	Louisiana Public Service Commission Re-examination of Net Metering Rules	Louisiana Public Service Commission Docket # R-31417	Gulf States Solar Energy Industries Association
Aug. 29, 2013	DTE (Detroit Edison) 2013 Renewable Energy Plan Review (Michigan)	Michigan Public Utilities Commission Case # U-17302	Environmental Law and Policy Center
Sep. 5, 2013	CE (Consumers Energy) 2013 Renewable Energy Plan Review (Michigan)	Michigan Public Utilities Commission Case # U-17301	Environmental Law and Policy Center
Sep. 27, 2013	North Carolina Utilities Commission 2012 Avoided Cost Case	North Carolina Utilities Commission Docket # E-100, Sub. 136	North Carolina Sustainable Energy Association
Oct. 18, 2013	Georgia Power Company 2013 Rate Case	Georgia Public Service Commission Docket # 36989	Georgia Solar Energy Industries Association
Nov. 4, 2013	PEPCO Rate Case (District of Columbia)	District of Columbia Public Service Commission Formal Case # 1103	Grid 2.0 Working Group & Sierra Club of Washington, D.C.
Apr. 24, 2014	Dominion Virginia Electric Power 2013 IRP	Virginia State Corporation Commission Case # PUE-2013-00088	Environmental Respondents
Apr. 25, 2014	North Carolina Utilities Commission 2014 Avoided Cost Case - Direct	North Carolina Utilities Commission Docket # E-100, Sub. 140	Southern Alliance for Clean Energy
May 7, 2014	Arizona Corporation Commission Investigation on the Value and Cost of Distributed Generation	Arizona Corporation Commission Docket # E-00000J-14-0023	Rábago Energy LLC (invited presentation and workshop participation)
Jun. 2, 2014	North Carolina Utilities Commission 2014 Avoided Cost Case – Response (Corrected)	North Carolina Utilities Commission Docket # E-100, Sub. 140	Southern Alliance for Clean Energy
Jun. 20, 2014	North Carolina Utilities Commission 2014 Avoided Cost Case – Rebuttal	North Carolina Utilities Commission Docket # E-100, Sub. 140	Southern Alliance for Clean Energy

**Testimony Submitted by Karl R. Rábago**

**(as of 1 August 2023)**

Jul. 23, 2014	Florida Energy Efficiency and Conservation Act, Goal Setting – FPL, Duke, TECO, Gulf	Florida Public Service Commission Docket # 130199-EI, 130200-EI, 130201-EI, 130202-EI	Southern Alliance for Clean Energy
Sep. 19, 2014	Ameren Missouri's Application for Authorization to Suspend Payment of Solar Rebates	Missouri Public Service Commission File No. ET-2014-0350, Tariff # YE-2014-0494	Missouri Solar Energy Industries Association
Aug. 6, 2014	Appalachian Power Company 2014 Biennial Rate Review	Virginia State Corporation Commission Case # PUE-2014-00026	Southern Environmental Law Center (Environmental Respondents)
Aug. 13, 2014	Wisconsin Public Service Corp. 2014 Rate Application	Wisconsin Public Service Commission Docket # 6690-UR-123	RENEW Wisconsin and Environmental Law & Policy Center
Aug. 28, 2014	WE Energies 2014 Rate Application	Wisconsin Public Service Commission Docket # 05-UR-107	RENEW Wisconsin and Environmental Law & Policy Center
Sep. 18, 2014	Madison Gas & Electric Company 2014 Rate Application	Wisconsin Public Service Commission Docket # 3720-UR-120	RENEW Wisconsin and Environmental Law & Policy Center
Sep. 29, 2014	SOLAR, LLC v. Missouri Public Service Commission	Missouri District Court Case # 14AC-CC00316	SOLAR, LLC
Jan. 28, 2016 (date of CPUC order)	Order Instituting Rulemaking to Develop a Successor to Existing Net Energy Metering Tariffs, etc.	California Public Utilities Commission Rulemaking 14-07-002	The Utility Reform Network (TURN)
Mar. 20, 2015	Orange and Rockland Utilities 2015 Rate Application	New York Public Service Commission Case # 14-E-0493	Pace Energy and Climate Center
May 22, 2015	DTE Electric Company Rate Application	Michigan Public Service Commission Case # U-17767	Michigan Environmental Council, NRDC, Sierra Club, and ELPC
Jul. 20, 2015	Hawaiian Electric Company and NextEra Application for Change of Control	Hawai'i Public Utilities Commission Docket # 2015-0022	Hawai'i Department of Business, Economic Development, and Tourism
Sep. 2, 2015	Wisconsin Public Service Company Rate Application	Wisconsin Public Service Commission Case # 6690-UR-124	ELPC
Sep. 15, 2015	Dominion Virginia Electric Power 2015 IRP	Virginia State Corporation Commission Case # PUE-2015-00035	Environmental Respondents
Sep. 16, 2015	NYSEG & RGE Rate Cases	New York Public Service Commission Cases 15-E-0283, -0285	Pace Energy and Climate Center

**Testimony Submitted by Karl R. Rábago**

**(as of 1 August 2023)**

Oct. 14, 2015	Florida Power & Light Application for CCPN for Lake Okeechobee Plant	Florida Public Service Commission Case 150196-El	Environmental Confederation of Southwest Florida
Oct. 27, 2015	Appalachian Power Company 2015 IRP	Virginia State Corporation Commission Case # PUE-2015-00036	Environmental Respondents
Nov. 23, 2015	Narragansett Electric Power/National Grid Rate Design Application	Rhode Island Public Utilities Commission Docket No. 4568	Wind Energy Development, LLC
Dec. 8, 2015	State of West Virginia, et al., v. U.S. EPA, et al.	U.S. Court of Appeals for the District of Columbia Circuit Case No. 15-1363 and Consolidated Cases	Declaration in Support of Environmental and Public Health Intervenor in Support of Movant Respondent-Intervenors' Responses in Opposition to Motions for Stay
Dec. 28, 2015	Ohio Power/AEP Affiliate PPA Application	Public Utilities Commission of Ohio Case No. 14-1693-EL-RDR	Environmental Law and Policy Center
Jan. 19, 2016	Ohio Edison Company, Cleveland Electric Illuminating Company, and Toledo Edison Company Application for Electric Security Plan (FirstEnergy Affiliate PPA)	Public Utilities Commission of Ohio Case No. 14-1297-EL-SSO	Environmental Law and Policy Center
Jan. 22, 2016	Northern Indiana Public Service Company (NIPSCO) Rate Case	Indiana Utility Regulatory Commission Cause No. 44688	Citizens Action Coalition and Environmental Law and Policy Center
Mar. 18, 2016	Northern Indiana Public Service Company (NIPSCO) Rate Case – Settlement Testimony	Indiana Utility Regulatory Commission Cause No. 44688	Joint Intervenor – Citizens Action Coalition and Environmental Law and Policy Center
Mar. 18, 2016	Comments on Pilot Rate Proposals by MidAmerican and Alliant	Iowa Utility Board NOI-2014-0001	Environmental Law and Policy Center
May 27, 2016	Consolidated Edison of New York Rate Case	New York Public Service Commission Case No. 16-E-0060	Pace Energy and Climate Center
Jun. 21, 2016	Federal Trade Commission: Workshop on Competition and Consumer Protection Issues in Solar Energy - Invited workshop presentation	Federal Trade Commission - Solar Electricity Project No. P161200	Pace Energy and Climate Center
Aug. 17, 2016	Dominion Virginia Electric Power 2016 IRP	Virginia State Corporation Commission Case # PUE-2016-00049	Environmental Respondents

**Testimony Submitted by Karl R. Rábago**

**(as of 1 August 2023)**

Sep. 13, 2016	Appalachian Power Company 2016 IRP	Virginia State Corporation Commission Case # PUE-2016-00050	Environmental Respondents
Oct. 27, 2016	Consumers Energy PURPA Compliance Filing	Michigan Public Service Commission Case No. U-18090	Environmental Law & Policy Center, "Joint Intervenors"
Oct. 28, 2016	Delmarva, PEPCO (PHI) Utility Transformation Filing – Review of Filing & Utilities of the Future Whitepaper	Maryland Public Service Commission Case PC 44	Public Interest Advocates
Dec. 1, 2016	DTE Electric Company PURPA Compliance Filing	Michigan Public Service Commission Case No. U-18091	Environmental Law & Policy Center, "Joint Intervenors"
Dec. 16, 2016	Development of New Alternative Net Metering Tariffs - Rebuttal of Unitil Testimony	New Hampshire Public Utilities Commission Docket No. DE 16-576	New Hampshire Sustainable Energy Association ("NHSEA")
Jan. 13, 2017	Gulf Power Company Rate Case	Florida Public Service Commission Docket No. 160186-EI	Earthjustice, Southern Alliance for Clean Energy, League of Women Voters-Florida
Jan. 13, 2017	Alpena Power Company PURPA Compliance Filing	Michigan Public Service Commission Case No. U-18089	Environmental Law & Policy Center, "Joint Intervenors"
Jan. 13, 2017	Indiana Michigan Power Company PURPA Compliance Filing	Michigan Public Service Commission Case No. U-18092	Environmental Law & Policy Center, "Joint Intervenors"
Jan. 13, 2017	Northern States Power Company PURPA Compliance Filing	Michigan Public Service Commission Case No. U-18093	Environmental Law & Policy Center, "Joint Intervenors"
Jan. 13, 2017	Upper Peninsula Power Company PURPA Compliance Filing	Michigan Public Service Commission Case No. U-18094	Environmental Law & Policy Center, "Joint Intervenors"
Mar. 10, 2017	Eversource Energy Grid Modernization Plan	Massachusetts Department of Public Utilities Case No. 15-122/15-123	Cape Light Compact
Apr. 27, 2017	Eversource Rate Case & Grid Modernization Investments	Massachusetts Department of Public Utilities Case No. 17-05	Cape Light Compact
May 2, 2017	AEP Ohio Power Electric Security Plan	Public Utilities Commission of Ohio Case No. 16-1852-EL-SSO	Environmental Law & Policy Center
Jun. 2, 2017	Vectren Energy TDSIC Plan	Indiana Utility Regulatory Commission Cause No. 44910	Citizens Action Coalition & Valley Watch

**Testimony Submitted by Karl R. Rábago**

**(as of 1 August 2023)**

Jul. 26, 2017	Vectren Energy 2018-2020 Energy Efficiency Plan	Indiana Utility Regulatory Commission Cause No. 44927	Citizens Action Coalition
Jul. 28, 2017	Vectren Energy 2016-2017 Energy Efficiency Plan	Indiana Utility Regulatory Commission Cause No. 44645	Citizens Action Coalition
Aug. 1, 2017	Interstate Power & Light (Alliant) 2017 Rate Application	Iowa Utilities Board Docket No. RPU-2017-0001	Environmental Law & Policy Center, Iowa Environmental Council, Natural Resources Defense Council, and Solar Energy Industries Assoc.
Aug. 11, 2017	Dominion Virginia Electric Power 2017 IRP	Virginia State Corporation Commission Case # PUR-2017-00051	Environmental Respondents
Aug. 18, 2017	Appalachian Power Company 2017 IRP	Virginia State Corporation Commission Case # PUR-2017-00045	Environmental Respondents
Aug. 23, 2017	Pennsylvania Solar Future Project	Pennsylvania Dept. of Environmental Protection - Alternative Ratemaking Webinar	Pace Energy and Climate Center
Aug. 25, 2017	Niagara Mohawk Power Co. d/b/a National Grid Rate Case	New York Public Service Commission Case # 17-E-0238, 17-G-0239	Pace Energy and Climate Center
Sep. 15, 2017	Niagara Mohawk Power Co. d/b/a National Grid Rate Case	New York Public Service Commission Case # 17-E-0238, 17-G-0239	Pace Energy and Climate Center
Oct. 20, 2017	Missouri PSC Working Case to Explore Emerging Issues in Utility Regulation	Missouri Public Service Commission File No. EW-2017-0245	Renew Missouri
Nov. 21, 2017	Central Hudson Gas & Electric Co. Electric and Gas Rates Cases	New York Public Service Commission Case # 17-E-0459, -0460	Pace Energy and Climate Center
Jan. 16, 2018	Great Plains Energy, Inc. Merger with Westar Energy, Inc.	Missouri Public Service Commission Case # EM-2018-0012	Renew Missouri Advocates
Jan. 19, 2018	U.S. House of Representatives, Energy and Commerce Committee	Hearing on "The PURPA Modernization Act of 2017," H.R. 4476	Rábago Energy LLC
Jan. 29, 2018	Joint Petition of Electric Distribution Companies for Approval of a Model SMART Tariff	Massachusetts Department of Public Utilities Case No. 17-140	Boston Community Capital Solar Energy Advantage Inc.  (Jointly authored with Sheryl Musgrove)

**Testimony Submitted by Karl R. Rábago**

**(as of 1 August 2023)**

Feb. 21, 2018	Joint Petition of Electric Distribution Companies for Approval of a Model SMART Tariff	Massachusetts Department of Public Utilities Case No. 17-140 - Surrebuttal	Boston Community Capital Solar Energy Advantage Inc.  (Jointly authored with Sheryl Musgrove)
Apr. 6, 2018	Narragansett Electric Co., d/b/a National Grid Rate Case Filing	Rhode Island Public Utilities Commission Docket No. 4770	New Energy Rhode Island ("NERI")
Apr. 25, 2018	Narragansett Electric Co., d/b/a National Grid Power Sector Transformation Plan	Rhode Island Public Utilities Commission Docket No. 4780	New Energy Rhode Island ("NERI")
Apr. 26, 2018	U.S. EPA Proposed Repeal of Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units, 82 Fed. Reg. 48,035 (Oct. 16, 2017) – "Clean Power Plan"	U.S. Environmental Protection Agency Docket No. EPA-HQ-OAR-2016-0592	Karl R. Rábago
May 25, 2018	Orange & Rockland Utilities, Inc. Rate Case Filing	New York Public Service Commission Case Nos. 18-E-0067, 18-G-0068	Pace Energy and Climate Center
Jun. 15, 2018	Orange & Rockland Utilities, Inc. Rate Case Filing	New York Public Service Commission Case Nos. 18-E-0067, 18-G-0068 – Rebuttal Testimony	Pace Energy and Climate Center
Aug. 10, 2018	Dominion Virginia Electric Power 2018 IRP	Virginia State Corporation Commission Case # PUR-2018-00065	Environmental Respondents
Sep. 20, 2018	Consumers Energy Company Rate Case	Michigan Public Service Commission Case No. U-20134	Environmental Law & Policy Center
Sep. 27, 2018	Potomac Electric Power Co. Notice to Construct Two 230 kV Underground Circuits	District of Columbia Public Service Commission Formal Case No. 1144	Solar United Neighbors of D.C.
Sep. 28, 2019	Arkansas Public Service Commission Investigation of Policies Related to Distributed Energy Resources	Arkansas Public Service Commission Docket No. 16-028-U	Arkansas Audubon Society & Arkansas Advanced Energy Association
Nov. 7, 2018	DTE Detroit Edison Rate Case	Michigan Public Service Commission Case No. U-20162	Natural Resources Defense Council, Michigan Environmental Council, Sierra Club
Mar. 26, 2019	Guam Power Authority Petition to Modify Net Metering	Guam Public Utilities Commission Docket GPA 19-04	Micronesia Renewable Energy, Inc.

Page 49 of 136  
**Testimony Submitted by Karl R. Rábago**

**(as of 1 August 2023)**

Apr. 4, 2019	Community Power Network & League of Women Voters of Florida v. JEA	Circuit Court Duval County of Florida Case No. 2018-CA-002497 Div: CV-D	Earthjustice
Apr. 16, 2019	Dominion Virginia Electric Power 2018 IRP – Compliance Filing	Virginia State Corporation Commission Case # PUR-2018-00065	Environmental Respondents
Apr. 25, 2019	Georgia Power 2019 IRP	Georgia Public Service Commission Docket No. 42310	GSEA & GSEIA
May 10, 2019	NV Energy NV GreenEnergy 2.0 Rider	Nevada Public Utilities Commission Docket Nos. 18-11015, 18-11016	Vote Solar
May 24, 2019	Consolidated Edison of New York Electric and Gas Rate Cases – Misc. Issues	New York Public Service Commission Case Nos. 19-E-0065, 19-G-0066	Pace Energy and Climate Center
May 24, 2019	Consolidated Edison of New York Electric and Gas Rate Cases – Low- and Moderate-Income Panel	New York Public Service Commission Case Nos. 19-E-0065, 19-G-0066	Pace Energy and Climate Center
May 30, 2019	Connecticut DEEP Shared Clean Energy Facility Program Proposal	Connecticut Department of Energy and Environmental Protection Docket No. 19-07-01	Connecticut Fund for the Environment
Jun. 3, 2019	New Orleans City Council Rulemaking to Establish Renewable Portfolio Standards	New Orleans City Council Docket No. UD-19-01	National Audubon Society and Audubon Louisiana
Jun. 14, 2019	Consolidated Edison of New York Electric and Gas Rate Cases – Rebuttal Testimony	New York Public Service Commission Case Nos. 19-E-0065, 19-G-0066	Pace Energy and Climate Center
Jun. 24, 2019	Program to Encourage Clean Energy in Westchester County Pursuant to Public Service law Section 74-a; Staff Investigation into a Moratorium on New Natural Gas Services in the Consolidated Edison Company of New York, Inc. Service Territory	New York Public Service Commission Case Nos. 19-M-0265, 19-G-0080	Earthjustice and Pace Energy and Climate Center
Jul. 12, 2019	Application of Virginia Electric and Power Company for the Determination of the Fair Rate of Return on Common Equity	Virginia State Corporation Commission Case # PUR-2019-00050	Virginia Poverty Law Center
Jul. 15, 2019	New Orleans City Council Rulemaking to Establish Renewable Portfolio Standards – Reply Comments	New Orleans City Council Docket No. UD-19-01	National Audubon Society and Audubon Louisiana

Page 50 of 136  
**Testimony Submitted by Karl R. Rábago**

**(as of 1 August 2023)**

Aug. 1, 2019	Interstate Power and Light Company – General Rate Case	Iowa Utilities Board Docket No. RPU-2019-0001	Environmental Law & Policy Center and Iowa Environmental Council
Aug. 19, 2019	Consolidated Edison of New York Electric and Gas Rate Cases – Surrebuttal	New York Public Service Commission Case Nos. 19-E-0065, 19-G-0066	Pace Energy and Climate Center
Aug. 21, 2019	Connecticut Department of Energy and Environmental Protection and Public Utility Regulatory Authority Joint Proceeding on the Value of Distributed Energy Resources - Comments	Connecticut Department of Energy and Environmental Protection/Public Utility Regulatory Authority Docket No. 19-06-29	Connecticut Fund for the Environment and Save Our Sound
Sep. 10, 2019	Interstate Power and Light Company – General Rate Case - Rebuttal	Iowa Utilities Board Docket No. RPU-2019-0001	Environmental Law & Policy Center and Iowa Environmental Council
Sep. 18, 2019	Connecticut Department of Energy and Environmental Protection and Public Utility Regulatory Authority Joint Proceeding on the Value of Distributed Energy Resources – Comments and Response to Draft Study Outline	Connecticut Department of Energy and Environmental Protection/Public Utility Regulatory Authority Docket No. 19-06-29	Connecticut Fund for the Environment, Save Our Sound, E4theFuture, NE Clean Energy Council, NE Energy Efficiency Partnership, and Acadia Center
Sep. 20, 2019	Connecticut Department of Energy and Environmental Protection and Public Utility Regulatory Authority Joint Proceeding on the Value of Distributed Energy Resources – Participation in Technical Workshop 1	Connecticut Department of Energy and Environmental Protection/Public Utility Regulatory Authority Docket No. 19-06-29 <a href="http://www.ctn.state.ct.us/ctnplayer.asp?odID=16715">http://www.ctn.state.ct.us/ctnplayer.asp?odID=16715</a>	Connecticut Fund for the Environment and Save Our Sound
Oct. 4, 2019	Connecticut Department of Energy and Environmental Protection and Public Utility Regulatory Authority Joint Proceeding on the Value of Distributed Energy Resources – Participation in Technical Workshop 2	Connecticut Department of Energy and Environmental Protection/Public Utility Regulatory Authority Docket No. 19-06-29 <a href="http://www.ctn.state.ct.us/ctnplayer.asp?odID=16766">http://www.ctn.state.ct.us/ctnplayer.asp?odID=16766</a>	Connecticut Fund for the Environment and Save Our Sound
Oct. 15, 2019	Electronic Consideration of the Implementation of the Net Metering Act (KY SB 100)	Kentucky Public Service Commission Case No. 2019-00256	Kentuckians for the Commonwealth & Mountain Association for Community Economic Development



**Testimony Submitted by Karl R. Rábago**

**(as of 1 August 2023)**

Oct. 15, 2019	New Orleans City Council Rulemaking to Establish Renewable Portfolio Standards – Comments on City Council Utility Advisors’ Report	New Orleans City Council Docket No. UD-19-01	National Audubon Society and Audubon Louisiana, Vote Solar, 350 New Orleans, Alliance for Clean Energy, PosiGen, and Sierra Club
Oct. 17, 2019	Indiana Michigan Power Co. General Rate Case	Michigan Public Service Company Case No. U-20359	Environmental Law & Policy Center, The Ecology Center, the Solar Energy Industries Association, and Vote Solar
Dec. 4, 2019	Alabama Power Company Petition for Certificate of Convenience and Necessity	Alabama Public Service Commission Docket No. 32953	Energy Alabama and Gasp, Inc.
Dec. 5, 2019	In the Matter of Net Metering and the Implementation of Act 827 of 2015	Arkansas Public Service Commission Docket No. 16-027-R	National Audubon Society and Arkansas Advanced Energy Association
Dec. 6, 2019	Proposed Revisions to Vermont Public Utility Commission Rule 5.100	Vermont Public Utility Commission Case No. 19-0855-RULE	Renewable Energy Vermont (“REV”)
Jan. 15, 2020	Puget Sound Energy General Rate Case	Washington Utilities and Transportation Commission Docket Nos. UE-190529 & UG-190530	Puget Sound Energy
Feb. 11, 2020	Application of Entergy Arkansas, LLC for a Proposed Tariff Amendment: Solar Energy Purchase Option – Direct Testimony	Arkansas Public Service Commission Docket No. 19-042-TF	Arkansas Advanced Energy Association
Mar. 17, 2020	Application of Entergy Arkansas, LLC for a Proposed Tariff Amendment: Solar Energy Purchase Option – Surrebuttal Testimony	Arkansas Public Service Commission Docket No. 19-042-TF	Arkansas Advanced Energy Association
Jun. 16, 2020	PECO Energy Default Supply Plan V – Direct Testimony	Pennsylvania Public Utility Commission Docket No. P-2020-3019290	Environmental Respondents / Earthjustice
Jun. 24, 2020	Consumers Energy Company General Rate Case – Direct Testimony	Michigan Public Service Commission Case No. U-20697	Joint Clean Energy Organizations / Environmental Law & Policy Center
Jul. 14, 2020	Consumers Energy Company General Rate Case – Rebuttal Testimony	Michigan Public Service Commission Case No. U-20697	Joint Clean Energy Organizations / Environmental Law & Policy Center
Jul. 23, 2020	PECO Energy Default Supply Plan V – Surrebuttal Testimony	Pennsylvania Public Utility Commission Docket No. P-2020-3019290	Environmental Stakeholders / Earthjustice

**Testimony Submitted by Karl R. Rábago**

**(as of 1 August 2023)**

Sep. 15, 2020	Dominion Virginia Electric Power 2020 IRP – Direct Testimony	Virginia State Corporation Commission Case # PUR-2020-00035	Environmental Respondents
Sep. 18, 2020	Avoided Cost Proceeding for Georgia Power – Direct Testimony	Georgia Public Service Commission Docket No. 4822	Georgia Solar Energy Industries Association, Inc.
Sep. 29, 2020	Madison Gas and Electric – General Rate Case – Affidavit in Opposition to Electric Rates Settlement	Wisconsin Public Service Commission Docket No. 3270-UR-123	Sierra Club
Sep. 30, 2020	Madison Gas and Electric – General Rate Case – Gas Rates	Wisconsin Public Service Commission Docket No. 3270-UR-123	Sierra Club
Oct. 2, 2020	Duke Energy Florida Petition for Approval of Clean Energy Connect Program	Florida Public Service Commission Docket No. 20200176-EI	League of United Latin American Citizens of Florida
Oct. 2, 2020	Ameren Illinois – Investigation re: Calculation of Distributed Generation Rebates	Illinois Commerce Commission Docket No. 20-0389	Joint Solar Parties
Dec. 9, 2020	Arkansas – In the Matter of a Rulemaking to Adopt an Evaluation, Measurement, and Verification Protocol and Propose M&V Amendments to the Commission’s Rules for Conservation and Energy Efficiency Programs; In the Matter of the Continuation, Expansion, and Enhancement of Public Utility Energy Efficiency Programs in Arkansas	Arkansas Public Service Commission Docket Nos. 10-100-R, 13-002-U	Arkansas Advanced Energy Association
Dec. 22, 2020	Appalachian Power Company 2020 Virginia Clean Economy Act Compliance Plan	Virginia State Corporation Commission Case No. PUR-2020-00135	Environmental Respondent
Jan. 4, 2021	Dominion Virginia Electric Power Company Clean Economy Compliance Plan	Virginia State Corporation Commission Case No. PUR-2020-00134	Environmental Respondent
Feb. 5, 2021	Ameren Illinois – Investigation re: Calculation of Distributed Generation Rebates - Rebuttal	Illinois Commerce Commission Docket No. 20-0389	Joint Solar Parties
Feb. 15, 2021	Kentucky Power Company General Rate Case	Kentucky Public Service Commission Case No. 2020-00174	Joint Intervenor – Mountain Association, Kentuckians for the Commonwealth, Kentucky Solar Energy Society

**Testimony Submitted by Karl R. Rábago**

**(as of 1 August 2023)**

Mar. 2, 2021	Dominion Virginia Electric Power Company Rider RGGI Proposal	Virginia State Corporation Commission Case No. PUR-2020-00169	Environmental Respondent
Mar. 5, 2021	Kentucky Utilities Company and Louisville Gas and Electric Company General Rate Cases	Kentucky Public Service Commission Case Nos. 2020-00349, 2020-00350	Joint Intervenors – Mountain Association, Kentuckians for the Commonwealth, Kentucky Solar Energy Society
Apr. 5, 2021	Docket to Review the Efficacy and Fairness of the Net Metering and Interconnection Rules – Comments	Mississippi Public Service Commission Docket No. 2021-AD-19	Entegry Energy Partners, LLC & Audubon Delta / National Audubon Society
Apr. 13, 2021	Petition of Guam Power Authority for Creation of a New Energy Storage Rate – Comments of Micronesia Renewable Energy, Inc.	Guam Public Utilities Commission Docket No. 20-09	Micronesia Renewable Energy, Inc.
May 25, 2021	Petition of Episcopal Diocese of Rhode Island for Declaratory Judgment on Transmission System Costs and Related “Affected System Operator” Studies	Rhode Island Public Utility Commission Docket No. 4981	Episcopal Diocese of Rhode Island
Jun. 21, 2021	Petition for Rate Increase by Florida Power & Light Company – Direct Testimony	Florida Public Service Commission Docket No. 20210015-EI	Florida Rising, Inc., League of United Latin American Citizens of Florida, and Environmental Confederation of Southwest Florida, Inc.
Jun. 22, 2021	Application of Consumers Energy Company for Authority to Increase Its Rates for the Generation and Distribution of Electricity and Other Relief	Michigan Public Service Commission Case No. U-20963	The Environmental Law and Policy Center (EPLC)
Jun. 28, 2021	Pennsylvania Public Utility Commission v. PECO Energy Company (GRC)	Pennsylvania Utility Commission Docket No. R-2021-3024601	Clean Energy Advocates
Jul. 12, 2021	Application of Consumers Energy Company for Authority to Increase Its Rates for the Generation and Distribution of Electricity and Other Relief – Rebuttal	Michigan Public Service Commission Case No. U-20963	The Environmental Law and Policy Center (EPLC)
Jul. 28, 2021	Application of Shenandoah Valley Electric Cooperative for a General Increase in Rates	Virginia State Corporation Commission Case No. PUR-2021-00054	Solar United Neighbors of Virginia (SUN-VA)
Aug. 5, 2021	Kentucky Utilities Company and Louisville Gas and Electric Company General Rate Cases – Supp. Proceeding on Net Energy Metering	Kentucky Public Service Commission Case Nos. 2020-00349, 2020-00350	Joint Intervenors – Mountain Association, Kentuckians for the Commonwealth, Kentucky Solar Energy Society

**Testimony Submitted by Karl R. Rábago**

**(as of 1 August 2023)**

Sep. 2, 2021	Madison Gas & Electric Co. – General Rate Case	Wisconsin Public Service Commission Docket No. 3270-UR-124	Sierra Club
Sep. 3, 2021	Dominion Virginia Electric Power Company – Triennial Rate Review – Direct Testimony on ROE	Virginia State Corporation Commission Case No. PUR-2020-00169	
Sep. 13, 2021	Petition for Rate Increase by Florida Power & Light Company – Settlement Testimony	Florida Public Service Commission Docket No. 20210015-EI	Florida Rising, Inc., League of United Latin American Citizens of Florida, and Environmental Confederation of Southwest Florida, Inc.
Sep. 20, 2021	Madison Gas & Electric Co. – General Rate Case – Surrebuttal Testimony	Wisconsin Public Service Commission Docket No. 3270-UR-124	Sierra Club
Sep. 27, 2021	Dakota Energy Cooperative, Inc. v. East River Electric Power Cooperative, Inc. and Basin Electric Power Cooperative – Expert Report	US. District Court, District of South Dakota (Southern Division) Case 4:20-CV-04192-LLP	Dakota Energy Cooperative, Inc.
Oct. 5, 2021	In the Matter of establishing regulations for a shared solar program pursuant to § 56-594.3 of the Code of Virginia	Virginia State Corporation Commission Case No. PUR-2020-00125	Coalition for Community Solar Access
Nov. 1, 2021	Dakota Energy Cooperative, Inc. v. East River Electric Power Cooperative, Inc. and Basin Electric Power Cooperative – Surrebuttal Expert Report	US. District Court, District of South Dakota (Southern Division) Case 4:20-CV-04192-LLP	Dakota Energy Cooperative, Inc.
Nov. 16, 2021	Petition of Virginia Electric and Power Company for approval of the RPS Development Plan, approval & certification of proposed CE-2 Solar Projects pursuant to § 56-580 D and 56-46.1 of the Code of Virginia	Virginia State Corporation Commission Case No. PUR-2021-00146	Appalachian Voices
Mar. 1, 2022	In the Matter of establishing regulations for a multi-family shared solar program pursuant to § 56-585.1:12 of the Code of Virginia	Virginia State Corporation Commission Case No. PUR-2020-00125	Appalachian Voices

Page 55 of 136  
**Testimony Submitted by Karl R. Rábago**

**(as of 1 August 2023)**

Mar. 29, 2022	Review of Duke Energy Carolina, LLC & Duke Energy Progress, LLC Joint Application for Approval of NEM Tariff Revisions and Recommendations for Investigation of Costs and Benefits of Customer-Sited Generation – Expert Report	North Carolina Utilities Commission Docket No. E-100, Sub. 180	Environmental Working Group
Mar. 30, 2022	Ameren Illinois Company Petition for Approval of Performance and Tracking Metrics Pursuant to 220 ILCS 5/16-108.188(e) – Direct Testimony	Illinois Commerce Commission Docket No. 22-0063	Joint Solar Parties
Apr. 6, 2022	Commonwealth Edison Company Petition for the Establishment of Performance Metrics under Section 16-108.18(e) of the Public Utilities Act	Illinois Commerce Commission Docket No. 22-0067	Joint Solar Parties
May 6, 2022	Review of Duke Energy Carolina, LLC & Duke Energy Progress, LLC Joint Application for Approval of NEM Tariff Revisions and Recommendations for Investigation of Costs and Benefits of Customer-Sited Generation – Reply Report	North Carolina Utilities Commission Docket No. E-100, Sub. 180	Environmental Working Group
May 25, 2022	Ameren Illinois Company Petition for Approval of Performance and Tracking Metrics Pursuant to 220 ILCS 5/16-108.188(e) – Rebuttal Testimony	Illinois Commerce Commission Docket No. 22-0063	Joint Solar Parties
May 27, 2022	Review of Duke Energy Carolina, LLC & Duke Energy Progress, LLC Joint Application for Approval of NEM Tariff Revisions and Recommendations for Investigation of Costs and Benefits of Customer-Sited Generation – Surreply Report	North Carolina Utilities Commission Docket No. E-100, Sub. 180	Environmental Working Group

Page 56 of 136  
**Testimony Submitted by Karl R. Rábago**

**(as of 1 August 2023)**

Jun. 6, 2022	Commonwealth Edison Company Petition for the Establishment of Performance Metrics under Section 16-108.18(e) of the Public Utilities Act – Rebuttal Testimony	Illinois Commerce Commission Docket No. 22-0063	Joint Solar Parties
Jun. 22, 2022	In the Matter of Austin Energy Base Rate Case Filing Dated April 18, 2022	City of Austin Hearing Examiner	Sierra Club, Public Citizen, and Solar United Neighbors
Oct. 3, 2022	In the Matter of the Application of Northern States Power Company for Authority to Increase Rates for Electric Service in Minnesota	Minnesota Public Utilities Commission Docket No. E002/GR-21-630.	Just Solar Coalition
Oct. 13, 2022	Verified Petition of Vote Solar of Distributed Energy Resource Systems in Wisconsin – Rebuttal	Wisconsin PSC Docket No. 9300-DR-106	Vote Solar
Oct. 21, 2022	Verified Petition of Vote Solar of Distributed Energy Resource Systems in Wisconsin - Surrebuttal	Wisconsin PSC Docket No. 9300-DR-106	Vote Solar
Nov. 14, 2022	In the Matter of the Application of Columbia Gas of Ohio, Inc. for Authority to Amend its Filed Tariffs to Increase the Rates and Charges for Gas Services and Related Matters	Public Utilities Commission of Ohio Case No. 21-637-GA-AIR	Environmental Law & Policy Center
Dec. 6, 2022	In the Matter of the Application of Northern States Power Company for Authority to Increase Rates for Electric Service in Minnesota - Surrebuttal	Minnesota Public Utilities Commission Docket No. E002/GR-21-630.	Just Solar Coalition
Dec. 19, 2022	Application of NorthWestern Energy for Authority to Increase Retail Electric and Natural Gas Utility Service Rates - Direct	Montana Public Service Commission Docket No. 2022.07.078	Montana Environmental Information Center (MEIC), Earthjustice

Page 57 of 136  
**Testimony Submitted by Karl R. Rábago**

**(as of 1 August 2023)**

Jan. 11, 2023	Application of Tucson Electric Power Company for the Establishment of Just and Reasonable Rates and Charges Designed to Realize a Reasonable Rate of Return on the Fair Value of the Properties of Tucson Electric Power Company Devoted to Its Operations throughout the State of Arizona and for Related Approvals – Direct Testimony on ROE & Equity Ratio	Arizona Corporation Commission Docket No. E-01933A-22-0107	Arizona Solar Energy Industries Association & Solar Energy Industries Association
Jan. 27, 2023	Application of Tucson Electric Power Company for the Establishment of Just and Reasonable Rates and Charges Designed to Realize a Reasonable Rate of Return on the Fair Value of the Properties of Tucson Electric Power Company Devoted to Its Operations throughout the State of Arizona and for Related Approvals – Direct Testimony on Community Solar	Arizona Corporation Commission Docket No. E-01933A-22-0107	Arizona Solar Energy Industries Association & Solar Energy Industries Association
Mar. 6, 2023	Application of Tucson Electric Power Company for the Establishment of Just and Reasonable Rates and Charges Designed to Realize a Reasonable Rate of Return on the Fair Value of the Properties of Tucson Electric Power Company Devoted to Its Operations throughout the State of Arizona and for Related Approvals – Surrebuttal Testimony	Arizona Corporation Commission Docket No. E-01933A-22-0107	Arizona Solar Energy Industries Association & Solar Energy Industries Association
May 6, 2023	The Peoples Gas Light and Coke Company – Proposed General Increase in Rates and Revisions to Service Classifications, Riders, and Terms and Conditions of Service – Direct Testimony	Illinois Commerce Commission Docket No. 23-0069	City of Chicago

**Testimony Submitted by Karl R. Rábago**

**(as of 1 August 2023)**

July 17, 2023	The Peoples Gas Light and Coke Company – Proposed General Increase in Rates and Revisions to Service Classifications, Riders, and Terms and Conditions of Service – Rebuttal Testimony	Illinois Commerce Commission Docket No. 23- 0069	City of Chicago
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[166]



Before the Maryland Public Service Commission  
Case No. 9704

**Chesapeake Climate Action Network**

**Exhibit KR-3**

**Company response to CCAN DR 1-6**

MARYLAND PUBLIC SERVICE COMMISSION

WASHINGTON GAS LIGHT COMPANY

Case No. 9704

WASHINGTON GAS COMPANY RESPONSE  
AND/OR NOTICE OF OBJECTION/UNAVAILABILITY  
DIRECTED TO CHESAPEAKE CLIMATE ACTION NETWORK

CCAN DATA REQUEST NO. 1

QUESTION NO. 1-6

- Q.** Please refer to the testimony of Witness Steffes and Exhibit JDS-1. Please describe and detail all strategies, plans, and actions taken by the Company, planned, or underway which “enhance our existing low-carbon footprint.”

**WASHINGTON GAS’ RESPONSE**

08/11/2023

- A.** The Company’s decarbonization strategy embraces (a) energy efficiency to encourage and incentivize reducing natural gas consumption, (b) modernizing our infrastructure and operations to reduce GHG emissions, (c) progressively higher levels of low carbon fuels delivered to its customers (certified gas, renewable natural gas, hydrogen), (d) support for low-carbon fuel-based end use applications in C&I and residential markets, and (e) support for adoption of alternative fueled modes of transportation. Current actions being pursued in support of these strategies are provided in Robert Yardley’s testimony in this case.

SPONSOR: James D. Steffes  
Senior Vice President, Regulatory Affairs

Before the Maryland Public Service Commission  
Case No. 9704

**Chesapeake Climate Action Network**

**Exhibit KR-4**

**Company response to CCAN DR 1-14 & Att.**

MARYLAND PUBLIC SERVICE COMMISSION

WASHINGTON GAS LIGHT COMPANY

Case No. 9704

WASHINGTON GAS COMPANY RESPONSE  
AND/OR NOTICE OF OBJECTION/UNAVAILABILITY  
DIRECTED TO CHESAPEAKE CLIMATE ACTION NETWORK

CCAN DATA REQUEST NO. 1

QUESTION NO. 1-14

- Q.** Please provide data on the annual amount of carbon dioxide (CO<sub>2</sub>) and carbon dioxide-equivalent (CO<sub>2</sub>e) emissions and criteria pollutant emissions associated with the production, transport, distribution, and use of the Company's methane gas products in Maryland. Please provide this information by customer class, and provide five years of historical and projected data.

**WASHINGTON GAS' RESPONSE**

08/01/2023

- A.** Objection. Assumes facts not in evidence. Calls for special study.

SPONSOR: Office of the General Counsel

**WASHINGTON GAS' RESPONSE**

08/11/2023

- A. Production Emissions:** The company has not calculated its Scope 3 emissions from fuel and energy-related activities (FERA). The gas that is purchased and delivered on behalf of Washington Gas customers is sourced from identified producers under contract and the spot market where producers cannot be readily identified. Washington Gas also delivers gas that is purchased and owned by others and, as such, has limited visibility into its production source. Both gas and electric utilities, which heavily depend upon gas for power generation, are in the early stages of calculating and disclosing these upstream production-related emissions. WGL, together with its parent company, AltaGas, expects to begin work in this area in 2024.

**Transport Emissions:** As noted in the production discussion, above, the Company has not calculated emissions related to its Scope 3 FERA emissions, which also includes transport to Washington Gas gate stations. The gas that is both purchased and delivered on behalf of Washington Gas customers is sourced from identified producers under contract as well as the spot market where

producers cannot be readily identified. Both sources of gas arrive at Washington Gas gate stations via multiple interstate pipeline transporters. As noted above, Washington Gas also delivers gas that is purchased and owned by others and, similarly, these volumes are delivered by multiple interstate pipelines to various gate stations. Both gas and electric utilities, which heavily depend upon natural gas for power generation, are in the early stages of calculating and disclosing these transport-related emissions. WGL, together with its parent company, AltaGas expects to begin work in this area in 2024.

**Distribution Emissions:** Attachment A, Table 1 identifies the company's annual Scope 1 carbon dioxide (CO<sub>2</sub>) and carbon dioxide equivalent (CO<sub>2</sub>e) emissions and criteria pollutant emissions associated with distribution of the Company's methane gas products in Maryland for the last five years as reported to EPA's mandatory Greenhouse Gas Reporting Program under Subpart W. The company does not track or report Scope 1 emissions by customer class. The largest source of Scope 1 emissions are fugitives (leaked gas) from distribution mains, where the calculation is largely determined by pipe material type and length and in most cases cannot be assigned to a particular customer class. The company does not project future Scope 1 emissions.

**Customer Usage Emissions:** Attachment A, Table 2 identifies natural gas volumes and associated CO<sub>2</sub> equivalent emissions relating to the customer combustion of gas that was owned and delivered by Washington Gas in Maryland and attributable to the Company's Scope 3 emissions. Both sold/delivered volumes and emissions are shown by customer segment. The Company does not project Scope 3 emissions associated with customer usage. Attachment A also identifies the volumes of gas and associated emissions related to the combustion of gas purchased and owned by parties other than Washington Gas, which account for nearly 56% of gas delivered over the last five years (2018-2022). Customer use emissions related to gas procured and sold by others are attributable to those parties and are not projected by Washington Gas.

SPONSOR: Melissa Adams  
Assistant Vice President, Climate Policy Strategy & Commercialization

CCAN DR 1-14 Attachment A

Table 1

Subpart W: Natural Gas Distribution			
Year	CO <sub>2</sub> (mTons)	CH <sub>4</sub> (mTons)	CO <sub>2</sub> e (mTons)
2018	5,184.10	2,146.64	58,850.1
2019	4,755.10	2,095.58	57,144.6
2020	4,892.50	2,105.96	57,541.5
2021	4,520.60	2,063.46	56,107.1
2022	2,684.70	2,040.40	53,694.7

Table 2

Emissions from Maryland Natural Gas Usage (mTons CO <sub>2</sub> e)							
Year	Ownership	Residential	Commercial	Industrial	Electric Power	Vehicle Fuel	Total
2018	WGL	1,621,801	380,365	0	0	0	2,002,167
	3 <sup>rd</sup> Party	641,108	1,355,788	0	911,549	12,609	2,921,054
2019	WGL	1,534,132	349,507	0	0	0	1,883,639
	3 <sup>rd</sup> Party	563,280	1,380,427	0	353,342	12,000	2,309,050
2020	WGL	1,483,613	319,772	0	0	0	1,803,385
	3 <sup>rd</sup> Party	509,296	1,323,491	0	382,650	8,851	2,224,288
2021	WGL	1,557,605	339,075	0	0	0	1,896,680
	3 <sup>rd</sup> Party	519,624	1,342,200	0	363,831	8,575	2,234,231
2022	WGL	1,651,591	329,680	0	0	0	1,981,271
	3 <sup>rd</sup> Party	519,610	1,425,315	0	321,155	8,373	2,274,453

Maryland Natural Gas Usage (Mcf)							
Year	Ownership	Residential	Commercial	Industrial	Electric Power	Vehicle Fuel	Total
2018	WGL	29,757,821	6,979,182	-	-	-	36,737,003
	3 <sup>rd</sup> -Party	11,763,456	24,876,838	-	16,725,666	231,361	53,597,321
2019	WGL	28,149,213	6,412,969	-	-	-	34,562,182
	3 <sup>rd</sup> -Party	10,335,417	25,328,944	-	6,483,345	220,188	42,367,894
2020	WGL	27,222,254	5,867,377	-	-	-	33,089,631
	3 <sup>rd</sup> -Party	9,344,878	24,284,245	-	7,021,092	162,412	40,812,627
2021	WGL	28,579,909	6,221,560	-	-	-	34,801,469
	3 <sup>rd</sup> -Party	9,534,388	24,627,530	-	6,675,800	157,346	40,995,064
2022	WGL	30,304,427	6,049,173	-	-	-	36,353,600
	3 <sup>rd</sup> -Party	9,534,120	26,152,575	-	5,892,759	153,634	41,733,088

Before the Maryland Public Service Commission  
Case No. 9704

**Chesapeake Climate Action Network**

**Exhibit KR-5**

**Company response to Staff DR 8-13**



MARYLAND PUBLIC SERVICE COMMISSION

WASHINGTON GAS LIGHT COMPANY

Case No. 9704

WASHINGTON GAS COMPANY RESPONSE  
AND/OR NOTICE OF OBJECTION/UNAVAILABILITY  
DIRECTED TO THE OFFICE OF STAFF COUNSEL

STAFF DATA REQUEST NO. 8

QUESTION NO. 8-13

**Q.** Please describe what criteria makes up the Company's greenhouse gas ("GHG") emissions reductions performance metric?

**WASHINGTON GAS' RESPONSE**

06/30/2023

**A.** Washington Gas has two goals supporting GHG emissions reductions and annually reports its performance against these goals in the Alta Gas ESG Report.<sup>1</sup> The Company's first goal is to reduce its 2008 Scope 1 and 2 GHG emissions by 30% by 2030. The Company's second goal is to deliver at least 10% of fuel from lower carbon sources by 2030.

SPONSOR: Melissa Adams  
AVP Policy Climate Solutions & Commercialization

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<sup>1</sup> [https://www.altagas.ca/sites/default/files/2022-12/ALA\\_2022\\_ESG\\_UPDATE\\_0.pdf](https://www.altagas.ca/sites/default/files/2022-12/ALA_2022_ESG_UPDATE_0.pdf)

Before the Maryland Public Service Commission  
Case No. 9704

**Chesapeake Climate Action Network**

**Exhibit KR-6**

**Company response to Staff DR 8-14**

MARYLAND PUBLIC SERVICE COMMISSION

WASHINGTON GAS LIGHT COMPANY

Case No. 9704

WASHINGTON GAS COMPANY RESPONSE  
AND/OR NOTICE OF OBJECTION/UNAVAILABILITY  
DIRECTED TO THE OFFICE OF STAFF COUNSEL

STAFF DATA REQUEST NO. 8

QUESTION NO. 8-14

- Q.** Please describe how does the Company demonstrate GHG emission reduction and provide annual data for the CY TME 2019 -2022 to show the Company's emission reduction activities through system improvement projects-replacements in STRIDE and through non-STRIDE safety related O&M activities. Please describe the trend of the Company's GHG emission reduction in Maryland based on the actual data.

**WASHINGTON GAS' RESPONSE**

06/30/2023

- A.** Washington Gas does not track the data in the manner requested. The Company demonstrates GHG emissions reductions through system improvement and replacement projects in STRIDE and through non-STRIDE safety-related activities using a formula based on the quantity and type of pipe replaced. The annual emissions reduction associated with each year's replacement activity is shown below. During this period, STRIDE replacement activity has yielded a cumulative carbon dioxide equivalent emissions reduction of 22,299 tons and non-STRIDE projects have resulted in a cumulative reduction of 429 tons. The methodology utilizes a compounding factor to capture the lifetime savings of the GHG reduction for the reflected years. For example, as this timeframe covers a four-year timespan between 2019-2022, the 2019 sub-total is compounded by four years.

**Washington Gas STRIDE - GHG Reduction 2019-2022 CO<sub>2</sub>e**

	CY2019	CY2020	CY2021	CY2022
Mains Sub-Total	596	953	877	813
Services Sub-Total	1133	1577	1690	1848
Sub-Total	1729	2530	2566	2661
Compound	4	3	2	1
Total	6914	7591	5133	2661

**Cumulative CO<sub>2</sub>e Reduction**

Grand Total (mTons)	Cars
22,299	4,772

Begin Year 2019

End Year 2022

**Washington Gas Non-STRIDE - GHG Reduction 2019-2022 CO<sub>2</sub>e**

	CY2019	CY2020	CY2021	CY2022
Mains Sub-Total	32	10	3	11
Services Sub-Total	30	25	21	26
Sub-Total	62	35	24	38
Compound	4	3	2	1
Total	249	105	48	38

**Cumulative CO<sub>2</sub>e Reduction**

Grand Total (mTons)	Cars
439	94

Begin Year 2019

End Year 2022

Per the [EPA](#), “cars” are defined as gasoline powered cars driven for one year.

SPONSOR: Mike Rooney  
 Director, Environmental Compliance and Affairs

Wayne Jacas  
 Director, Construction Programs, Strategy and Management

Before the Maryland Public Service Commission  
Case No. 9704

**Chesapeake Climate Action Network**

**Exhibit KR-7**

**Company response to OPC DR 3-10 & Att. [CONFIDENTIAL]**

Before the Maryland Public Service Commission  
Case No. 9704

**Chesapeake Climate Action Network**

**Exhibit KR-8**

**Company response to OPC DR 6-1**

MARYLAND PUBLIC SERVICE COMMISSION

WASHINGTON GAS LIGHT COMPANY

Case No. 9704

WASHINGTON GAS COMPANY RESPONSE  
AND/OR NOTICE OF OBJECTION/UNAVAILABILITY  
DIRECTED TO THE OFFICE OF PEOPLE'S COUNSEL

OPC DATA REQUEST NO. 6

QUESTION NO. 6-1

- Q.** Please provide a copy of all analyses, documents, and studies prepared by the Company which examine or forecast the expected gas usage of its customers over the next 30 years.

**WASHINGTON GAS' RESPONSE**

08/16/2023

- A.** No analyses, documents, or studies prepared by the Company examining or forecasting the expected gas usage of its customers over the next 30 years were located in attempting to respond to this request. The Company will supplement its response if it subsequently locates any such materials.

SPONSOR: Office of the General Counsel

Before the Maryland Public Service Commission  
Case No. 9704

**Chesapeake Climate Action Network**

**Exhibit KR-9**

**Company response to OPC DR 6-3 & Att.**



MARYLAND PUBLIC SERVICE COMMISSION

WASHINGTON GAS LIGHT COMPANY

Case No. 9704

WASHINGTON GAS COMPANY RESPONSE  
AND/OR NOTICE OF OBJECTION/UNAVAILABILITY  
DIRECTED TO THE OFFICE OF PEOPLE'S COUNSEL

OPC DATA REQUEST NO. 6

QUESTION NO. 6-3

- Q.** Reference Section 14 of the General Service Provisions of the Company's tariff – Economic Evaluation of Facility Extensions. For each year since 2018, please provide the actual number of line extensions, the actual level of expenditures for such extensions, and the actual customer contributions for such extensions. Also provide the projected number of extensions, projected expenditures, and projected customer contributions for the years 2023 – 2030.

**WASHINGTON GAS' RESPONSE**

08/16/2023

- A.** See attachment for Question 6-3 for historical information on customers signed on, estimated capital and collected contributions for 2018-2022.

Regarding forecasted extensions, expenditures and customer contributions, Washington Gas does not forecast at this level for line extensions. We forecast the number of installed meters annually based upon our committed inventory from customers via the GSP-14 model. This inventory continues to demonstrate the demand for natural gas. The installed meter forecast is available through 2028 and is allocated as follows:

2023: 4,205 meters  
2024: 4,710 meters  
2025: 4,850 meters  
2026: 4,950 meters  
2027: 5,005 meters  
2028: 5,075 meters

SPONSOR: David Koscho, Manager, New Business Analytics

Year	Total Meters Authorized	Forecasted NPV Generated	Forecasted Capital Needed
2018	6,051	\$23,759,862	\$13,105,508
2019	5,509	\$17,192,924	\$17,814,533
2020	3,547	\$14,498,382	\$15,585,011
2021	6,997	\$37,552,608	\$27,236,900
2022	4,586	\$61,125,376	\$25,505,167

Contributions Received
\$621,404
\$1,212,949
\$2,381,590
\$1,933,053
\$1,041,338

Before the Maryland Public Service Commission  
Case No. 9704

**Chesapeake Climate Action Network**

**Exhibit KR-10**

**Company response to OPC DR 7-8**

MARYLAND PUBLIC SERVICE COMMISSION

WASHINGTON GAS LIGHT COMPANY

Case No. 9704

WASHINGTON GAS COMPANY RESPONSE  
AND/OR NOTICE OF OBJECTION/UNAVAILABILITY  
DIRECTED TO THE OFFICE OF PEOPLE'S COUNSEL

OPC DATA REQUEST NO. 7

QUESTION NO. 7-8

- Q.** Describe the benefits that ratepayers receive (referenced in Tuoriniemi 60:13-14) when WGL's Promotion activities produce new business under the Company's line extension tariff?

**WASHINGTON GAS' RESPONSE**

08/16/2023

- A.** See Response to Question 7-7 for NPV benefits and customers added in 2022. The revenue generated from new ratepayers allow fixed costs systemwide to be further spread amongst more customers.

SPONSOR: David Koscho, Manager, New Business Analytics

Before the Maryland Public Service Commission  
Case No. 9704

**Chesapeake Climate Action Network**

**Exhibit KR-11**

**Company response to OPC DR 6-5**

MARYLAND PUBLIC SERVICE COMMISSION

WASHINGTON GAS LIGHT COMPANY

Case No. 9704

WASHINGTON GAS COMPANY RESPONSE  
AND/OR NOTICE OF OBJECTION/UNAVAILABILITY  
DIRECTED TO THE OFFICE OF PEOPLE'S COUNSEL

OPC DATA REQUEST NO. 6

QUESTION NO. 6-5

- Q.** Please explain why the Company believes the Economic Evaluation of Facility Extension provisions in Section 14 of the General Service Provisions of the Company's tariff remain reasonable given the State of Maryland's decarbonization goals and objectives set forth in the Climate Solutions Now Act of 2022.

**WASHINGTON GAS' RESPONSE**

08/16/2023

- A.** Upon advice of counsel, the Climate Solutions Now Act of 2022 did not void or revise Section 14 of the General Service Provisions of the Company's Commission-approved Maryland tariff. Until such time as a tariff revision is approved by the Commission or by operation of law, the Company must abide by the terms and conditions of its Commission-approved Maryland tariff.

SPONSOR: The Office of the General Counsel

Before the Maryland Public Service Commission  
Case No. 9704

**Chesapeake Climate Action Network**

**Exhibit KR-12**

**Company response to CCAN DR 1-11**



MARYLAND PUBLIC SERVICE COMMISSION

WASHINGTON GAS LIGHT COMPANY

Case No. 9704

WASHINGTON GAS COMPANY RESPONSE  
AND/OR NOTICE OF OBJECTION/UNAVAILABILITY  
DIRECTED TO CHESAPEAKE CLIMATE ACTION NETWORK

CCAN DATA REQUEST NO. 1

QUESTION NO. 1-11

- Q.** Please provide a detailed explanation of the Company's plans for decapitalization and retirement of its gas system. Please provide timelines, supporting actions (e.g., depreciation adjustments), and criteria to be used to retire service lines and branches.

**WASHINGTON GAS' RESPONSE**

08/01/2023

- A.** Objection. Assumes facts not in evidence. Calls for special study. Vague and ambiguous as to "plans for decapitalization and retirement of its gas system."

SPONSOR: Office of the General Counsel

Before the Maryland Public Service Commission  
Case No. 9704

**Chesapeake Climate Action Network**

**Exhibit KR-13**

**Company response to Staff DR 8-15**

MARYLAND PUBLIC SERVICE COMMISSION

WASHINGTON GAS LIGHT COMPANY

Case No. 9704

WASHINGTON GAS COMPANY RESPONSE  
AND/OR NOTICE OF OBJECTION/UNAVAILABILITY  
DIRECTED TO THE OFFICE OF STAFF COUNSEL

STAFF DATA REQUEST NO. 8

QUESTION NO. 8-15

- Q.** Please provide the list of annual O&M and capital expenditures in MS Excel spreadsheet incurred by the Company for GHG emission reduction in Maryland in the CY TME 2019 -2022. What is the trend of the expenditures on a year-by-year basis and explain why?

**WASHINGTON GAS' RESPONSE**

06/30/2023

- A.** The Company does not specifically track expenditures that could be related to GHG emissions reductions. The Company calculates GHG emissions reductions from its pipe related activities as described in the response to Staff 8-14.

SPONSOR: Jim Steffes  
Sr Vice President Regulatory Affairs

Before the Maryland Public Service Commission  
Case No. 9704

**Chesapeake Climate Action Network**

**Exhibit KR-14**

**Company response to Staff DR 4-4**

MARYLAND PUBLIC SERVICE COMMISSION

WASHINGTON GAS LIGHT COMPANY

Case No. 9704

WASHINGTON GAS COMPANY RESPONSE  
AND/OR NOTICE OF OBJECTION/UNAVAILABILITY  
DIRECTED TO THE OFFICE OF STAFF COUNSEL

STAFF DATA REQUEST NO. 4

QUESTION NO. 4-4

- Q.** For the total leak management cost in each CY 2013 – 2022, please provide the variance for each calendar-year compared to the CY 2013. For the variances of 10% (ten percent) or more, please also provide the reason for the increase in leak management cost using the same format of the table.

**Table No. 4-4: TME December 2013 – 2022 Leak Management Cost Trend**

<b>TME December</b>	<b>Leak Mgt. Cost</b>	<b>Leak Mgt. Cost Variance Compared to CY 2013</b>	<b>Variance Percentage (%)</b>	<b>Variance Explanation For 10% or more</b>
<b>2013</b>				
<b>2014</b>				
<b>2015</b>				
<b>2016</b>				
<b>2017</b>				
<b>2018</b>				
<b>2019</b>				
<b>2020</b>				
<b>2021</b>				
<b>2022</b>				

**WASHINGTON GAS' RESPONSE**

06/26/2023

- A.** Please see the company's response to Staff 4-3 for a discussion of the change in Washington Gas's annual reporting period from a fiscal year to a calendar year.

Washington Gas is providing the costs in the format requested in Attachment 1. The leak management cost represent the Maryland share of costs is provided in the Company's response to Staff 4-3, Attachment 2. Washington Gas is not clear as to the relevance of comparing the cumulative cost increase to date to 2013. Therefore, Washington Gas has also provided the annual percentage change in costs

<b>TME December</b>	<b>Leak Mgt. Cost</b>	<b>Leak Mgt. Cost Variance Compared to CY 2013</b>	<b>Variance Percentage (%)</b>	<b>Year Over Year Variance</b>	<b>Year Over Year Variance (%)</b>	<b>Variance Explanation for 10% or more</b>
<b>FY2013</b>	15,394,343					
<b>FY2014</b>	19,131,886	3,737,543	24%	3,737,543	24%	Increases in leaks observed
<b>FY2015</b>	21,051,282	5,656,939	37%	1,919,396	10%	Increases in leaks observed
<b>FY2016</b>	20,382,333	4,987,990	32%	(668,949)	-3%	
<b>FY2017</b>	20,043,638	4,649,295	30%	(338,694)	-2%	
<b>FY2018</b>	26,783,325	11,388,982	74%	6,739,687	34%	Increases in leaks observed, use of mutual aid
<b>FY2019</b>	7,575,710	N/A	N/A	N/A	N/A	
<b>CY2019</b>	34,135,348	18,741,005	122%	7,352,023	27%	Increases in leaks observed, use of mutual aid
<b>CY2020</b>	25,446,038	10,051,695	65%	(8,689,310)	-25%	Decreases in leaks observed, lower activity for part of year from COVID
<b>CY2021</b>	28,682,822	13,288,478	86%	3,236,783	13%	Decreases in leaks observed, offset by inflation and supply chain issues; prior year lower from COVID
<b>CY2022</b>	27,125,182	11,730,838	76%	(1,557,640)	-5%	

SPONSOR: Robert E. Tuoriniemi (sponsor for all numbers)  
Chief Regulatory Accountant

Paul Zohorsky (sponsor for variance explanations)  
Vice President, Operations

Before the Maryland Public Service Commission  
Case No. 9704

**Chesapeake Climate Action Network**

**Exhibit KR-15**

**Company response to Staff DR 15-19 & Atts. [CONFIDENTIAL]**

Before the Maryland Public Service Commission  
Case No. 9704

**Chesapeake Climate Action Network**

**Exhibit KR-16**

**Company response to Staff DR 15-39 & Att. 5 CONFIDENTIAL**



Before the Maryland Public Service Commission  
Case No. 9704

**Chesapeake Climate Action Network**

**Exhibit KR-17**

**Company response to CCAN DR 1-13**

MARYLAND PUBLIC SERVICE COMMISSION

WASHINGTON GAS LIGHT COMPANY

Case No. 9704

WASHINGTON GAS COMPANY RESPONSE  
AND/OR NOTICE OF OBJECTION/UNAVAILABILITY  
DIRECTED TO CHESAPEAKE CLIMATE ACTION NETWORK

CCAN DATA REQUEST NO. 1

QUESTION NO. 1-13

- Q.** Please provide an explanation of any and all actions taken by the Company to reduce methane gas use, and why those actions are being taken.

**WASHINGTON GAS' RESPONSE**

08/09/2023

- A.** An action that the Company takes to reduce methane gas use is by incentivizing Maryland customers to be more efficient with and conscious of energy consumption. These incentivizing activities are carried out through the Company's suite of EmPOWER Maryland energy efficiency programs that have been in operation since early 2015. The programs are designed to implement the following activities: (1) optimize energy consumption with the installation of high-efficiency natural gas equipment and appliances, (2) optimize building performance with whole-home/building weatherization and retrofit projects, (3) optimize consumer behavior that leads to less consumption by providing educational resources and do-it-yourself (DIY) energy saving measures. Please refer to the Company's response to CCAN Data Request 1-15 (a) for the energy saving performance of the Washington Gas EmPOWER Maryland energy efficiency programs.

SPONSOR: James D. Steffes  
Senior Vice President, Regulatory Affairs

Before the Maryland Public Service Commission  
Case No. 9704

**Chesapeake Climate Action Network**

**Exhibit KR-18**

**Company response to CCAN DR 1-15**

MARYLAND PUBLIC SERVICE COMMISSION

WASHINGTON GAS LIGHT COMPANY

Case No. 9704

WASHINGTON GAS COMPANY RESPONSE  
AND/OR NOTICE OF OBJECTION/UNAVAILABILITY  
DIRECTED TO CHESAPEAKE CLIMATE ACTION NETWORK

CCAN DATA REQUEST NO. 1

QUESTION NO. 1-15

**Q.** Please quantify the reductions in CO<sub>2</sub>, CO<sub>2</sub>e, and criteria pollutant emissions, the dollars budgeted for spending, the cost per therm of reductions in gas usage and associated emissions, and other key Company evaluation criteria associated with implementation of the various programs described by the witness, by year and by customer class:

- a. EmPOWER programs, by program
- b. RNG Program
- c. CtNG Program
- d. Direct Emission Measurement Program
- e. Methane Capture and Reinjection Program
- f. Gas Appliance Incentives (if not addressed in EmPOWER programs)
- g. STRIDE spending
- h. Fleet Decarbonization
- i. Proposed Hydrogen Hub participation
- j. Rate design (flat rate)

**WASHINGTON GAS' RESPONSE**

08/01/2023

**A.** Assumes facts not in evidence. Calls for special study.

SPONSOR: Office of the General Counsel.

Before the Maryland Public Service Commission  
Case No. 9704

**Chesapeake Climate Action Network**

**Exhibit KR-19**

**Company response to CCAN DR 1-12**

MARYLAND PUBLIC SERVICE COMMISSION

WASHINGTON GAS LIGHT COMPANY

Case No. 9704

WASHINGTON GAS COMPANY RESPONSE  
AND/OR NOTICE OF OBJECTION/UNAVAILABILITY  
DIRECTED TO CHESAPEAKE CLIMATE ACTION NETWORK

CCAN DATA REQUEST NO. 1

QUESTION NO. 1-12

**Q.** Please provide an explanation of any and all actions taken by the Company to promote methane gas use, and why those actions are being taken.

**WASHINGTON GAS' RESPONSE**

08/01/2023

**A.** Objection. Overbroad. Vague and ambiguous as to "promote methane gas use."

SPONSOR: Office of the General Counsel

Before the Maryland Public Service Commission  
Case No. 9704

**Chesapeake Climate Action Network**

**Exhibit KR-20**

**Company response to OPC DR 7-10 & Att.**

MARYLAND PUBLIC SERVICE COMMISSION

WASHINGTON GAS LIGHT COMPANY

Case No. 9704

WASHINGTON GAS COMPANY RESPONSE  
AND/OR NOTICE OF OBJECTION/UNAVAILABILITY  
DIRECTED TO THE OFFICE OF PEOPLE'S COUNSEL

OPC DATA REQUEST NO. 7

QUESTION NO. 7-10

- Q.** Refer to Tuoriniemi Testimony 61:3-5. Provide copies of the “detailed informational content” that WGL provides to customers about competitive fuel options.

**WASHINGTON GAS' RESPONSE**

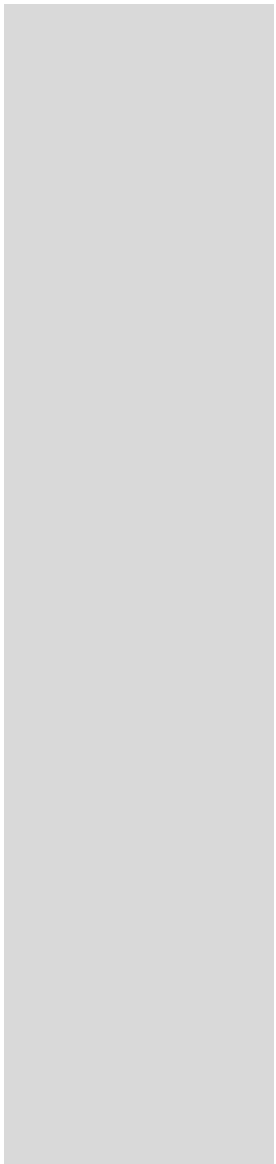
08/16/2023

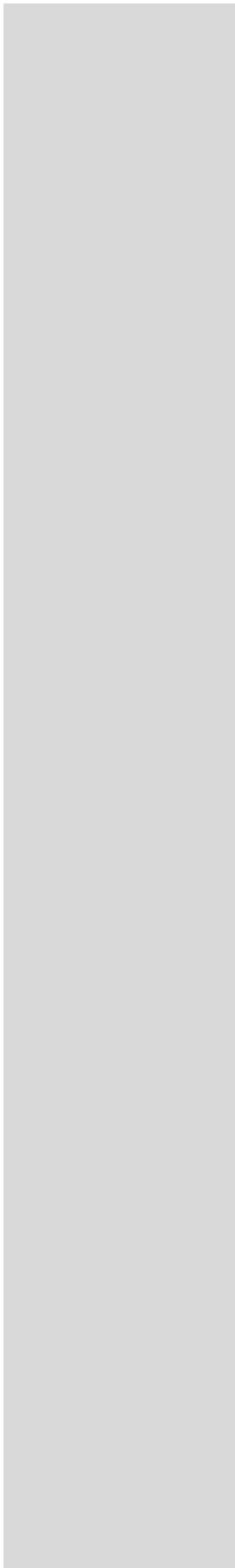
- A.** Please see the attachment for Staff DR 7-10 which is the information content Washington Gas provides customers about competitive fuel options

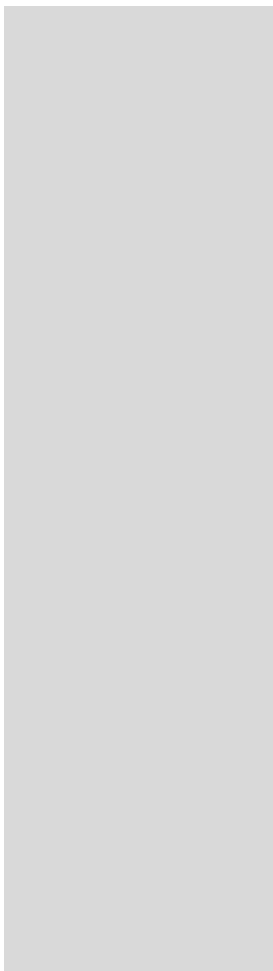
SPONSOR: David Koscho, Manager, New Business Analytics











# SINGLE-FAMILY HOME OPERATING COSTS NATURAL GAS VS. RESIDENTIAL HEATING OIL

Average costs for a three person, 2300 square foot single-family home utilizing space heating, water heating, cooking and drying.

## Equipment Description

---

### Space Heating

**Natural Gas - Average Furnace, 80% AFUE**

Residential Heating Oil (#2) - Average Furnace, 83% AFUE

Propane - Average Furnace, 80% AFUE

Electric - Standard Efficiency Heat Pump, 8.7 HSPF

**Natural Gas - High Efficiency Furnace, 92% AFUE**

Residential Heating Oil (#2) - High Efficiency Furnace, 85% AFUE

Propane - High Efficiency Furnace, 92% AFUE

Electric - High Efficiency Heat Pump, 10 HSPF

---

### Water Heating

**Natural Gas - Standard Water Heater, 0.62 EF**

Residential Heating Oil (#2) - Standard Water Heater, 0.62 EF

Propane - Standard Water Heater, 0.62 EF

Electric - Standard Water Heater, 0.9 EF

**Natural Gas - Condensing Tankless Water Heater, 0.95 EF**

Propane - Condensing Tankless Water Heater, 0.95 EF

Electric - High-Performing Water Heater, 0.95 EF

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### Cooking

**Natural Gas - Standard Cooktop, 40% Efficient**

Electric - Standard Cooktop, 74% Efficient

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### Clothes Drying<sup>5</sup>

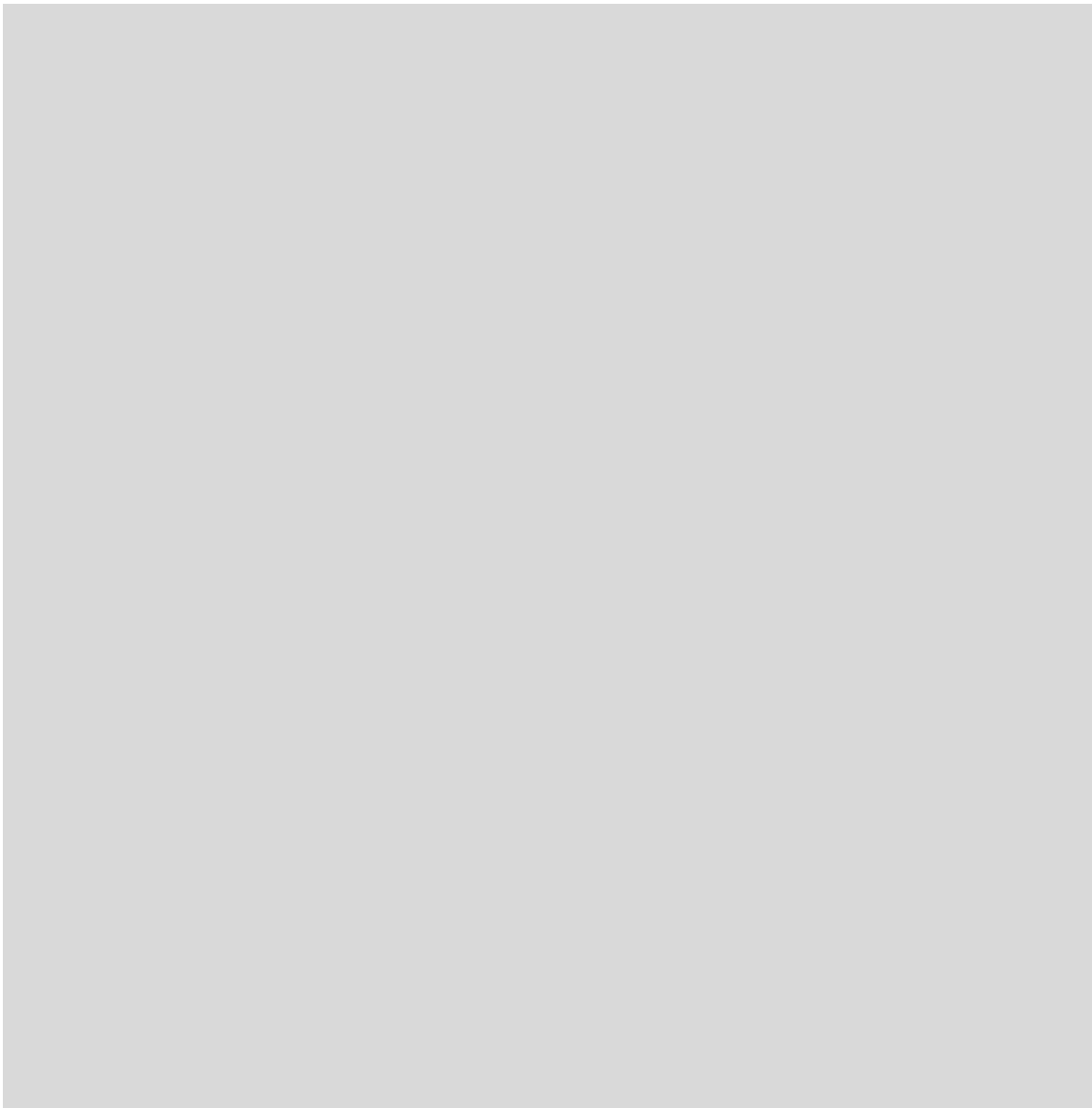
**Natural Gas - Standard Dryer, 2.67 EF**

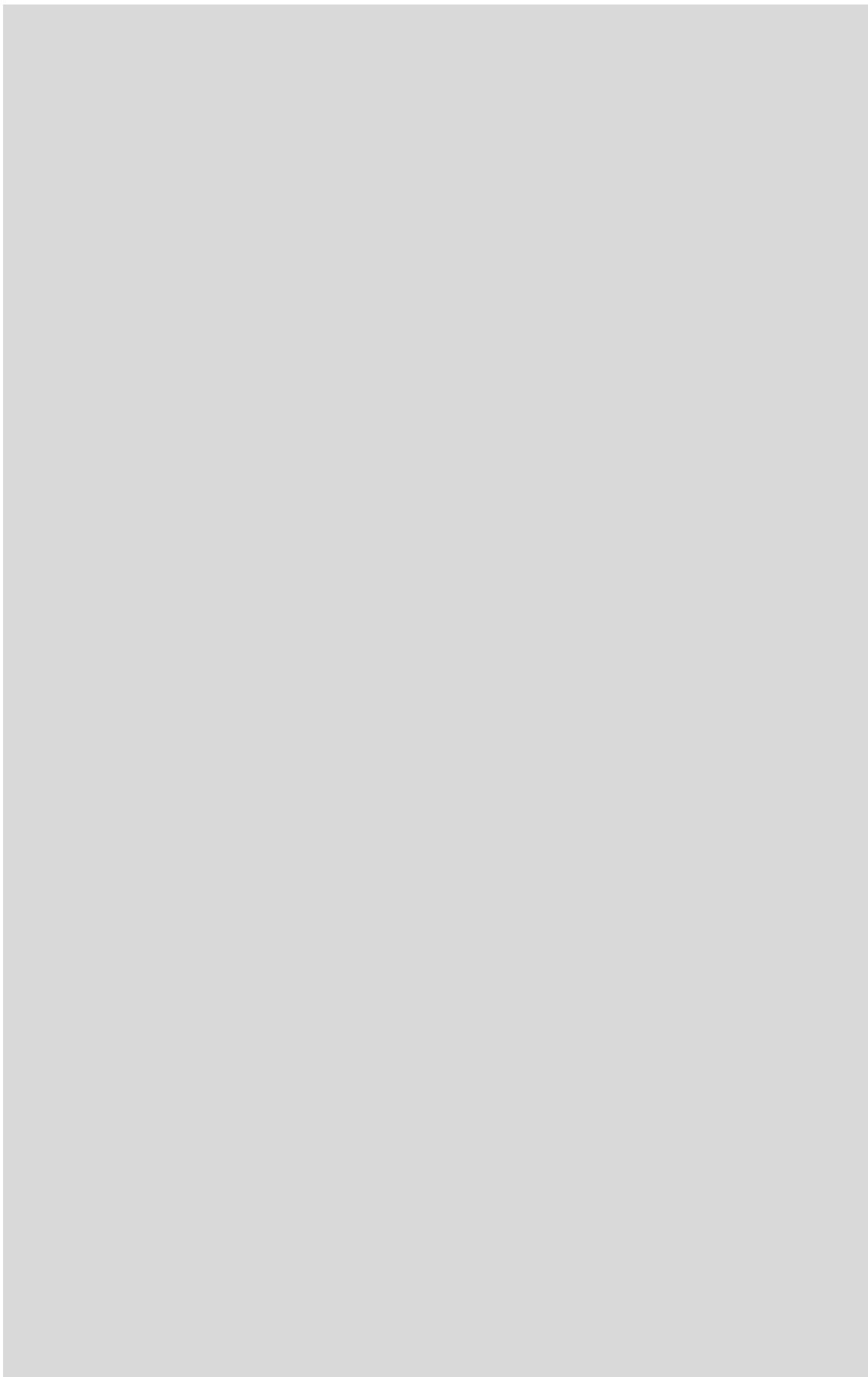
Electric - Standard Dryer, 3.01 EF

Updated: 5/13/2022

Notes:

- <sup>1</sup> All costs are obtained from the Energy Solutions Center, inc. (ESC) Residential Energy Calculation as of 5/
- <sup>2</sup> Washington DC data obtained by selecting District of Columbia/Washington in calculator
- <sup>3</sup> Maryland data obtained by selecting Maryland/Baltimore in calculator
- <sup>4</sup> Virginia data obtained by selecting Virginia/Sterling in the calculator
- <sup>5</sup> Clothes Drying costs are based on usage of 8 loads per week
- <sup>6</sup> Propane Costs in DC are included for comparative purposes only









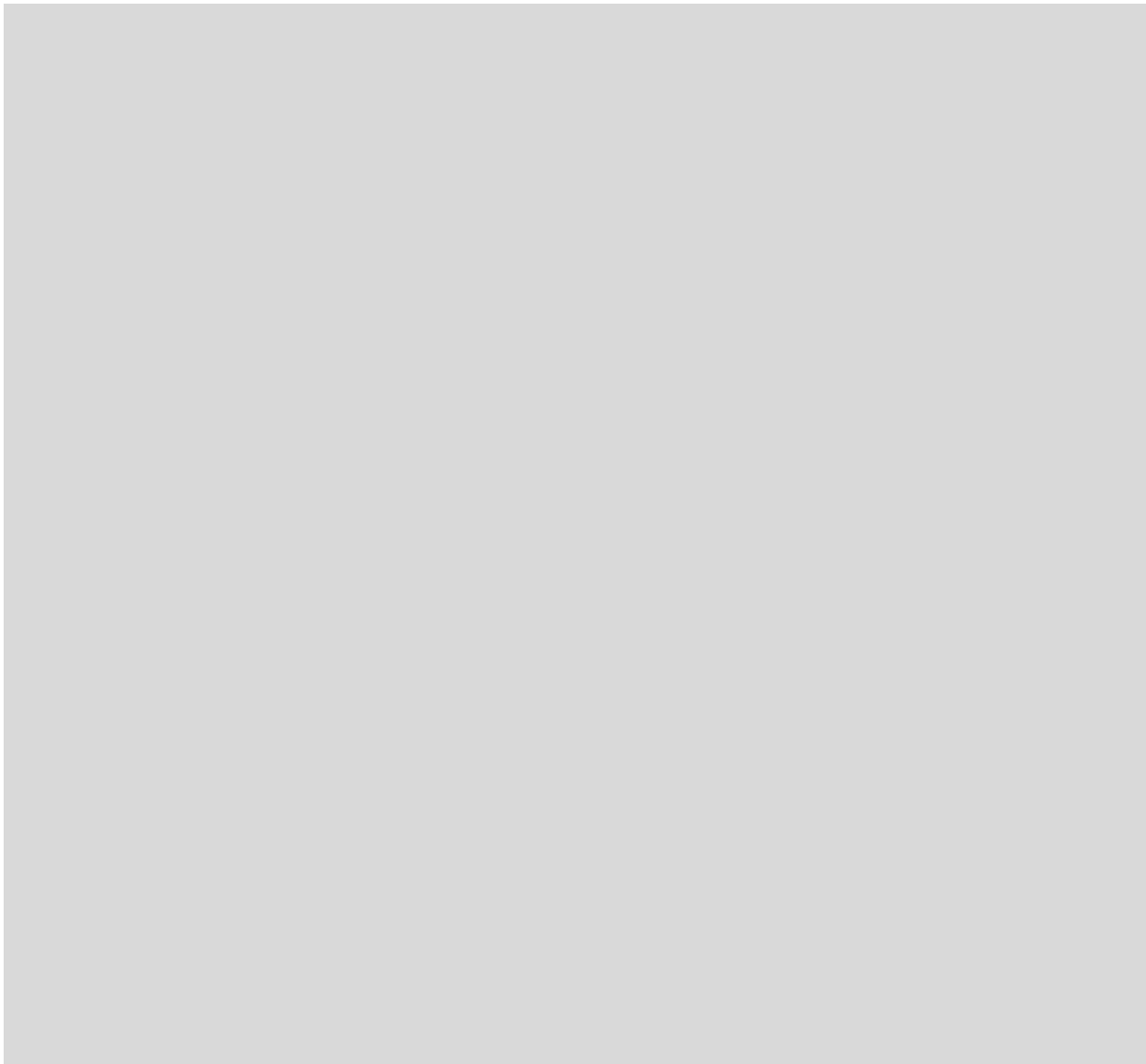
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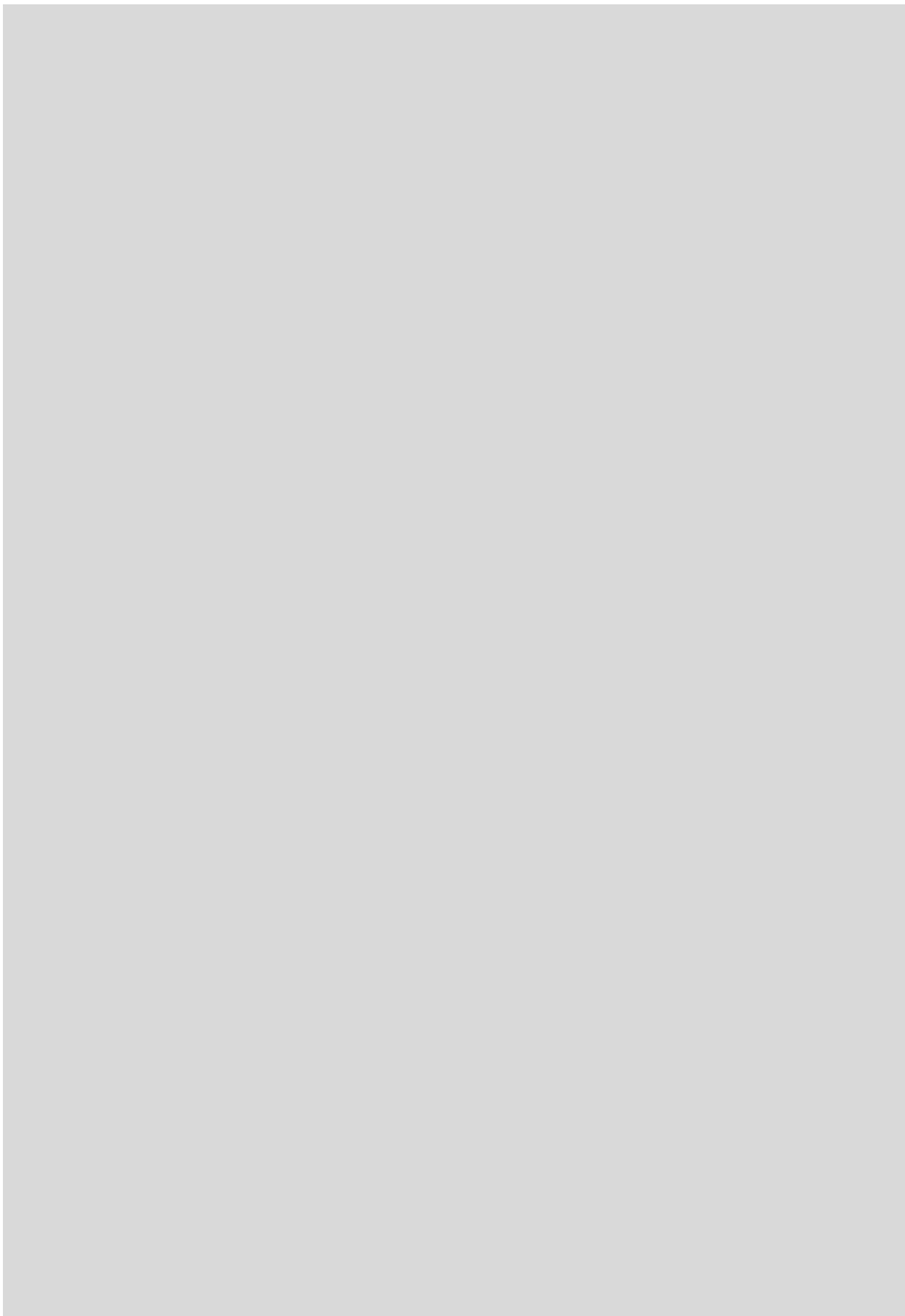
# G OIL, PROPANE AND ELECTRIC<sup>1</sup>

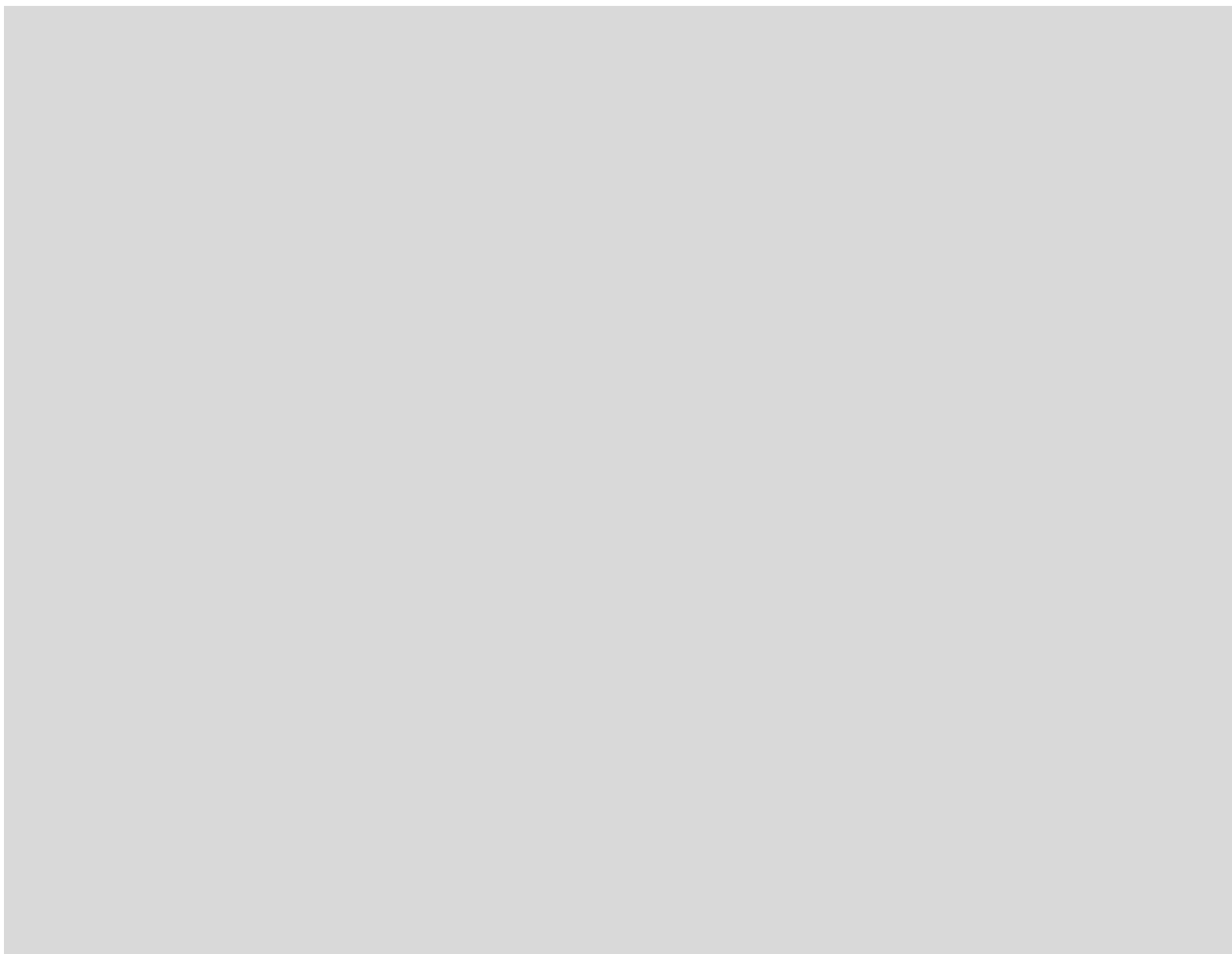
**\*\*To Publis**

ome in the DC metropolitan region

Estimated Annual Operating Costs						Savings if Converted to Na					
DC <sup>26</sup>		MD <sup>3</sup>		VA <sup>4</sup>		DC <sup>26</sup>		MD <sup>3</sup>			
\$	701	\$	685	\$	581	-		-			
\$	1,415	\$	1,415	\$	1,517	\$	714	\$	730		
\$	1,704	\$	1,704	\$	1,873	\$	1,003	\$	1,019		
\$	854	\$	958	\$	965	\$	153	\$	273		
\$	610	\$	604	\$	505	-		-			
\$	1,382	\$	1,382	\$	1,520	\$	772	\$	778		
\$	1,481	\$	1,481	\$	1,629	\$	871	\$	877		
\$	799	\$	765	\$	872	\$	189	\$	161		
\$	190	\$	189	\$	143	-		-			
\$	399	\$	399	\$	399	\$	209	\$	210		
\$	463	\$	463	\$	463	\$	273	\$	313		
\$	445	\$	465	\$	419	\$	255	\$	276		
\$	124	\$	123	\$	94	-		-			
\$	302	\$	302	\$	302	\$	178	\$	204		
\$	442	\$	440	\$	397	\$	318	\$	317		
\$	56	\$	56	\$	42	-		-			
\$	103	\$	108	\$	97	\$	47	\$	52		
\$	42	\$	41	\$	32	-		-			
\$	126	\$	131	\$	119	\$	84	\$	90		





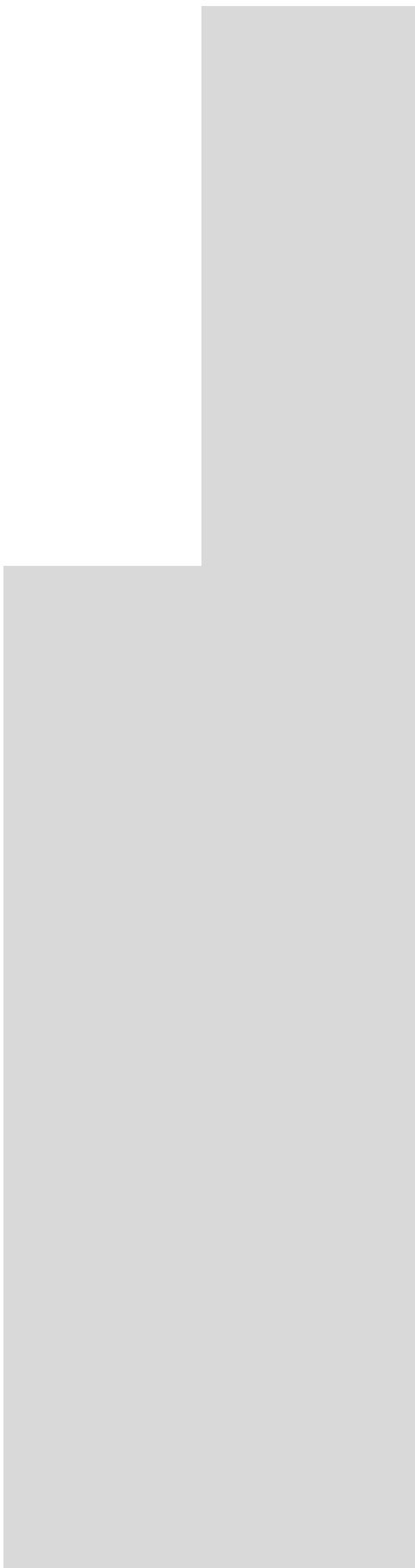


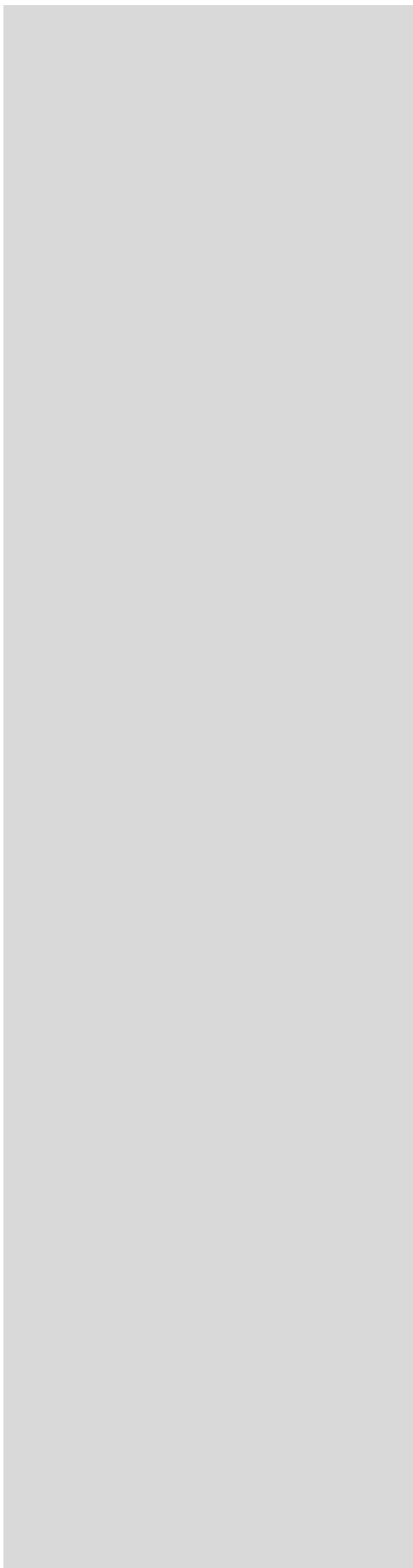
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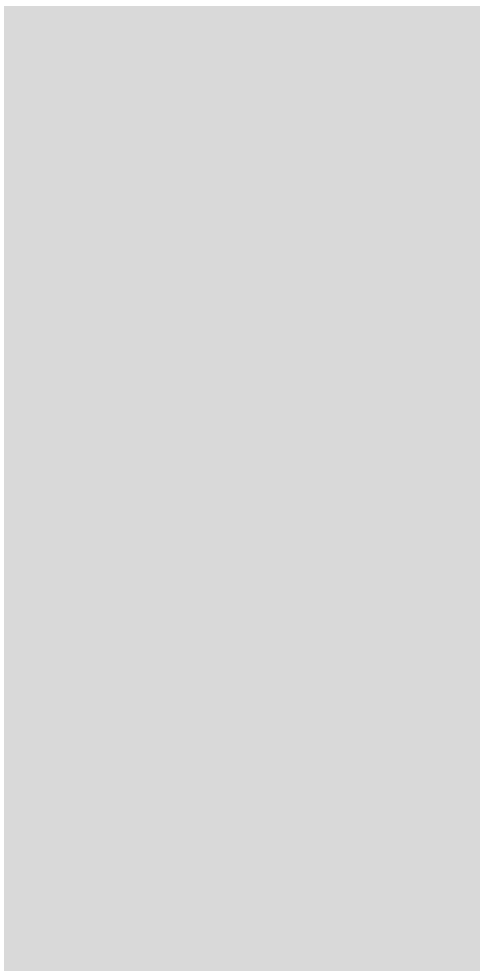
tural Gas

VA<sup>4</sup>

	-	
\$	936	
\$	1,292	
\$	384	
	-	
\$	1,015	
\$	1,124	
\$	367	
	-	
\$	256	
\$	317	
\$	276	
	-	
\$	207	
\$	303	
	-	
\$	55	
	-	
\$	87	









Before the Maryland Public Service Commission  
Case No. 9704

**Chesapeake Climate Action Network**

**Exhibit KR-21**

**Company response to CCAN DR 2-2**

MARYLAND PUBLIC SERVICE COMMISSION

WASHINGTON GAS LIGHT COMPANY

Case No. 9704

WASHINGTON GAS COMPANY RESPONSE  
AND/OR NOTICE OF OBJECTION/UNAVAILABILITY  
DIRECTED TO CHESAPEAKE CLIMATE ACTION NETWORK

CCAN DATA REQUEST NO. 2

QUESTION NO. 2-2

- Q.** Please provide details of all studies conducted or commissioned by WGL relating to the company-specific impacts that WGL could reasonably expect to experience as a result of electrification out to the year 2050 of residential and commercial gas uses on gas distribution utility sales, customer counts, revenues, earnings, and other key factors relating to gas utility performance.

**WASHINGTON GAS' RESPONSE**

08/14/2023

- A.** The Company has not conducted or commissioned a study specifically relating to any Company-specific impacts the Company could reasonably expect to experience as a result of electrification out to the year 2050 of residential and commercial gas uses on gas distribution utility sales, customer counts, revenues, earnings, and other key factors relating to gas utility performance.

SPONSOR: James D. Steffes  
Senior Vice President, Regulatory Affairs

Before the Maryland Public Service Commission  
Case No. 9704

**Chesapeake Climate Action Network**

**Exhibit KR-22**

**Company response to CCAN DR 2-3**

MARYLAND PUBLIC SERVICE COMMISSION

WASHINGTON GAS LIGHT COMPANY

Case No. 9704

WASHINGTON GAS COMPANY RESPONSE  
AND/OR NOTICE OF OBJECTION/UNAVAILABILITY  
DIRECTED TO CHESAPEAKE CLIMATE ACTION NETWORK

CCAN DATA REQUEST NO. 2

QUESTION NO. 2-3

- Q.** Please explain WGL's view of which of its customers will experience adverse economic impacts associated with electrification of residential and commercial gas uses out to the year 2050. Please detail all actions and plans by WGL to mitigate such potential adverse impacts.

**WASHINGTON GAS' RESPONSE**

08/14/2023

- A.** The Company has not commissioned or conducted a study or taken other action to determine with specificity the economic impact associated with electrification of residential and commercial gas uses out to the year 2050 on its customers or by type of customer. Generally, the Company's view is the economic impact of electrification on its customers or types of customers will depend on a wide variety of factors related to the extent and nature of adoption, implementation, and enforcement of electrification policies by municipal, local, state, and federal governments and agencies.

SPONSOR: James D. Steffes  
Senior Vice President, Regulatory Affairs

Before the Maryland Public Service Commission  
Case No. 9704

**Chesapeake Climate Action Network**

**Exhibit KR-23**

**Company response to CCAN DR 2-4**

MARYLAND PUBLIC SERVICE COMMISSION

WASHINGTON GAS LIGHT COMPANY

Case No. 9704

WASHINGTON GAS COMPANY RESPONSE  
AND/OR NOTICE OF OBJECTION/UNAVAILABILITY  
DIRECTED TO CHESAPEAKE CLIMATE ACTION NETWORK

CCAN DATA REQUEST NO. 2

QUESTION NO. 2-4

- Q.** Please detail how WGL's current and proposed gas spending on (a) gas system infrastructure, (b) gas efficiency programs, (c) gas incentive programs, (d) gas system expansion and extension spending, including new customer hookups, and (e) gas promotional information and advertisements will impact the level of gas uses, the number of customers taking gas service, and the potential level of stranded gas system costs under likely scenarios of electrification of residential and commercial gas uses, out to the year 2050.

**WASHINGTON GAS' RESPONSE**

08/14/2023

- A.** Given that there is no formal electrification plan or even a known "likely scenarios of electrification of residential and commercial gas uses" the requested information is not available in the form or content requested.

SPONSOR: Office of the General Counsel

Before the Maryland Public Service Commission  
Case No. 9704

**Chesapeake Climate Action Network**

**Exhibit KR-24**

**Company response to CCAN DR 4-1**

MARYLAND PUBLIC SERVICE COMMISSION

WASHINGTON GAS LIGHT COMPANY

Case No. 9704

WASHINGTON GAS COMPANY RESPONSE  
AND/OR NOTICE OF OBJECTION/UNAVAILABILITY  
DIRECTED TO CHESAPEAKE CLIMATE ACTION NETWORK

CCAN DATA REQUEST NO. 4

QUESTION NO. 4-1

- Q.** Has the Company quantified the estimated carbon impacts of its operations as a gas utility service provider over the next twenty five years? Please answer the question “yes” or “no.” If “no” please explain why not. If “yes” please provide the estimates, broken down by function, classification, customer class, and year of estimated impact. Is any of the proposed spending by the Company in the rate application designed to reduce greenhouse gas emissions relating to the Company's operations as a gas utility service provider over the next twenty-five years. Please answer the question “yes” or “no.” If “no” please explain why not. If “yes” please indicate for each program or spending item, the expected impacts in terms of reduced greenhouse gas emissions, broken down by function, classification, customer class, and year of estimated impact.

**WASHINGTON GAS' RESPONSE**

08/24/2023

- A.** No.

SPONSOR: James D. Steffes  
Senior Vice President, Regulatory Affairs



Before the Maryland Public Service Commission  
Case No. 9704

**Chesapeake Climate Action Network**

**Exhibit KR-25**

**Company response to CCAN DR 4-2**

MARYLAND PUBLIC SERVICE COMMISSION

WASHINGTON GAS LIGHT COMPANY

Case No. 9704

WASHINGTON GAS COMPANY RESPONSE  
AND/OR NOTICE OF OBJECTION/UNAVAILABILITY  
DIRECTED TO CHESAPEAKE CLIMATE ACTION NETWORK

CCAN DATA REQUEST NO. 4

QUESTION NO. 4-2

- Q.** Has the Company developed a plan to alter its operations (i.e. infrastructure investments, fuel sourcing, fundamental business model) for the company to contribute to the goals, objectives, and/or principles set out in: (a) Maryland's Climate Pathway; (b) Maryland Greenhouse Gas Reduction Act; (c) Maryland Building Energy Transition Plan (including Appendix A of the 2030 GGRA Plan); and (d) EmPOWER Maryland 2022 Performance and Recommendations for Improvement (VIEC)? Please answer the question "yes" or "no." If "no" please explain why not. If "yes" please provide copies of the Company's plan(s) and related plan-development documents. In regards to the above question, has the Company developed internal policies or positions relating to: (a) Maryland's Climate Pathway; (b) Maryland Greenhouse Gas Reduction Act; (c) Maryland Building Energy Transition Plan (Appendix A of the 2030 GGRA Plan); (d) EmPOWER Maryland 2022 Performance and Recommendations for improvement (VIEC)? Please answer the question "yes" or "no." If "no," please explain why not. If "yes," please provide copies of such policies or positions and related policy/position-development documents. Have the cited references (a) through (d) have impacted Company policies, positions, plans, strategies, or other activities in any way? Please answer the question "yes" or "no." If "no" please explain why not. If "yes," please detail the impacts

**WASHINGTON GAS' RESPONSE**

08/24/2023

- A.** The Company views items (a), (b), and (c) as comprehensive, large-scale products, covering a variety of topics that may or may not apply to Washington Gas or natural gas in general (as a fuel source or industry). However, the Company observes a broader theme between items (a), (b), and (c) of reducing GHG emissions and contributing to statewide climate change policy objectives. As such, the Company has crafted its response to align with this observation.

The Company currently maintains an operational capacity to conduct activities that either are (1) directly attributable to the abatement of GHG emissions (2) aimed at exploring novel or optimized solutions to lower GHG emissions. Below are examples of these activities:

- Investing in drawdown compressors that capture natural gas during construction that would otherwise be released, onsite renewable solar generation, and fuel cells at Washington Gas facilities.
- Reducing fugitive emissions associated with distribution pipelines through the STRIDE programs (Case No. 9486).
- Promoting energy efficiency through the Company's suite of EmPOWER Maryland programs. (See the Company's latest EmPOWER semiannual report (Mail Log No. 304577).)
- Exploring opportunities to decarbonize natural gas fuel supply through the purchase of lower emission intensity natural gas, facilitating renewable natural gas via producer interconnections, e.g., the Commission approved connection with the Washington Suburban Sanitation (WSSC) Piscataway facility.
- Party to a regional coalition seeking to promote the development and use of clean hydrogen.

SPONSOR: James D. Steffes  
Senior Vice President, Regulatory Affairs

Before the Maryland Public Service Commission  
Case No. 9704

**Chesapeake Climate Action Network**

**Exhibit KR-26**

**Company response to CCAN DR 4-3**

MARYLAND PUBLIC SERVICE COMMISSION

WASHINGTON GAS LIGHT COMPANY

Case No. 9704

WASHINGTON GAS COMPANY RESPONSE  
AND/OR NOTICE OF OBJECTION/UNAVAILABILITY  
DIRECTED TO CHESAPEAKE CLIMATE ACTION NETWORK

CCAN DATA REQUEST NO. 4

QUESTION NO. 4-3

- Q.** Does the Company believe that it will ever stop selling methane gas to retail customers? Please answer the question “yes” or “no.” If “no,” please explain why not. If “yes,” please indicate when the Company believes it will stop selling methane gas to retail customers. Has the Company conducted an assessment of business or operating risks associated with reduced use of fossil fuels as a result of policy, regulatory, or customer preference changes over the next twenty-five years or over a shorter or longer period? Please answer the question “yes” or “no.” If “no,” please explain why not. If “yes,” provide copies of such risk assessments.

**WASHINGTON GAS’ RESPONSE**

08/24/2023

- A.** No, the Company does not believe it will stop selling gas to retail customers. Natural gas is the fuel of choice for more than 513,000 Maryland customers and Washington Gas has a legal duty and right to serve customers pursuant to its franchise agreements, tariff and Orders of the Commission. The Company is taking actions to reduce the emissions intensity of the natural gas it delivers (See the response to OPC 4-2.) and is also voluntarily implementing and investigating connections to lower emission fuel sources, including renewable natural gas (See the response to OPC 4-2.) and clean hydrogen.

SPONSOR: James D. Steffes  
Senior Vice President, Regulatory Affairs

Before the Maryland Public Service Commission  
Case No. 9704

**Chesapeake Climate Action Network**

**Exhibit KR-27**

**Company response to CCAN DR 4-4**

MARYLAND PUBLIC SERVICE COMMISSION

WASHINGTON GAS LIGHT COMPANY

Case No. 9704

WASHINGTON GAS COMPANY RESPONSE  
AND/OR NOTICE OF OBJECTION/UNAVAILABILITY  
DIRECTED TO CHESAPEAKE CLIMATE ACTION NETWORK

CCAN DATA REQUEST NO. 4

QUESTION NO. 4-4

- Q.** Do any of the Company's proposed plans or operations have the direct or indirect expected impact of increasing the number of customers using methane gas? Please answer the question "yes" or "no." If "no," please explain why not. If "yes," please provide copies of all estimates of such impacts prepared by or for the Company. Do any of the Company's proposed plans or operations have the direct or indirect expected impact of increasing the amount of methane gas used by existing customers? Please answer the question "yes" or "no." If "no," please explain why not. If "yes," please provide copies of all estimates of such impacts prepared by or for the Company.

**WASHINGTON GAS' RESPONSE**

08/24/2023

- A.** Yes. The Washington Gas Marketing Department promotes new business. The Company encourages conservation through its EmPOWER program.

SPONSOR: James D. Steffes  
Senior Vice President, Regulatory Affairs

Before the Maryland Public Service Commission  
Case No. 9704

**Chesapeake Climate Action Network**

**Exhibit KR-28**

**Company response to CCAN DR 4-5**



MARYLAND PUBLIC SERVICE COMMISSION

WASHINGTON GAS LIGHT COMPANY

Case No. 9704

WASHINGTON GAS COMPANY RESPONSE  
AND/OR NOTICE OF OBJECTION/UNAVAILABILITY  
DIRECTED TO CHESAPEAKE CLIMATE ACTION NETWORK

CCAN DATA REQUEST NO. 4

QUESTION NO. 4-5

- Q.** Has the Company estimated, over any future time period, the volume of greenhouse gas emissions (CO<sub>2</sub> and CO<sub>2</sub>-equivalent) associated with its direct operations (Scope 1), the operations of its suppliers (Scope 2), or the use of its products by its customers (Scope 3)? Please answer the question “yes” or “no.” If “no,” please explain why not. If “yes,” please provide all such estimates.

**WASHINGTON GAS’ RESPONSE**

08/24/2023

- A.** Since 2021 the Company has tracked Scope 1 and Scope 2, but has never forecasted.

SPONSOR: James D. Wagner  
Senior Vice President, Regulatory Affairs

Before the Maryland Public Service Commission  
Case No. 9704

**Chesapeake Climate Action Network**

**Exhibit KR-29**

**Company response to CCAN DR 4-6**

MARYLAND PUBLIC SERVICE COMMISSION

WASHINGTON GAS LIGHT COMPANY

Case No. 9704

WASHINGTON GAS COMPANY RESPONSE  
AND/OR NOTICE OF OBJECTION/UNAVAILABILITY  
DIRECTED TO CHESAPEAKE CLIMATE ACTION NETWORK

CCAN DATA REQUEST NO. 4

QUESTION NO. 4-6

**Q.** Has the Company estimated the CO<sub>2</sub> or CO<sub>2</sub>-equivalent emissions reductions and the cost per unit of emissions reductions for any of the below items/programs? Please answer the question “yes” or “no,” for each. If “no,” please explain why not. If “yes,” please provide those estimates.

- a. EmPOWER programs, by program
- b. RNG Program
- c. CtNG Program
- d. Direct Emission Measurement Program
- e. Methane Capture and Reinjection Program
- f. Gas Appliance Incentives (if not addressed in EmPOWER programs)
- g. STRIDE spending
- h. Fleet Decarbonization
- i. Proposed Hydrogen Hub participation
- j. Rate design (flat rate)

**WASHINGTON GAS' RESPONSE**

08/24/2023

**A.** Please see corresponding responses below:

- a. Yes. Please see table shown in attached Microsoft Excel spreadsheet labeled “CCAN DR 4-6(a) – EmPOWER Programs”. The table is comprised of performance data from the most recent EmPOWER Maryland semiannual report filed with Commission on August 15, 2023 (ML 304577).
- b. No. The Company is engaged with a number of counterparties on a range of different commercial RNG discussions. While emissions reductions is a factor in these discussions, the transactions have not matured to a point where the specific CO<sub>2</sub> reductions and costs have been calculated.

- c. No, the Company has not estimated the CO<sub>2</sub> or CO<sub>2</sub>-equivalent emissions reductions and the cost per unit of emissions reductions for CtNG. The cost of supply has been purchased at market value, so the incremental cost associated with this purchase and reductions in emissions is \$0.00 per therm. The Company requests CtNG with a methane intensity of less than 0.10% or less as part of its' competitive bidding process. The purchases transacted to date had a methane intensity equal to or less than 0.0375%. The reduction in emissions could be calculated in comparison to a baseline emission intensity. Utilizing the EIA's production data and the EPA's Greenhouse Gas Emission data, the production sector's emission intensity is 0.5024%. This would result in a reduction in methane intensity of over 0.4649%.
- d. No. The Company has not determined the emissions reduction that could occur through direct measurement. The Company has not, therefore, determined a program cost per ton.

The Company has participated in and continues to monitor an industry effort to identify protocols and approaches to directly measure LDC emissions. This effort is in its early stages and continues to be refined.

- e. Yes, this program has resulted in the avoidance of 1,255 metric tons CO<sub>2</sub>-equivalent emissions. Based on costs to date, the cost per metric tons CO<sub>2</sub>-equivalent avoided is \$338. This cost will decrease as program equipment continues to be used.
- f. N/A
- g. No, the Company has not calculated the cost per emissions reductions relating to the Maryland STRIDE program. The purpose of the Company's STRIDE program is to enhance safety and improve the reliability of the Washington Gas system. While STRIDE has successfully reduced GHG emissions by over 105,000 metric tons of carbon dioxide (or CO<sub>2</sub> equivalent), this metric is an additional benefit, not the primary goal.
- h. No.
- i. No. The reason we have not calculated those direct estimates at this point is that the design to this point in the hydrogen hub process has remained high level, conceptual, and preliminary.
- j. The change to a flat rate design proposed in this case results from Commission Order No. 89799 in WGL rate case No. 9651. The Commission stated that "When the Company files its next rate case, its application shall include the elimination of this rate structure (declining block rate) in its proposed rate design". This change relates to only the

distribution portion of the customer's bill. The reduction to therm usage cannot be estimated based on this rate design change. Washington Gas residential customers bills also include the cost of commodity gas, which comprises approximately one-half of their total bill. The fact that customers will continue to pay the commodity gas portion of the bill will also contribute to the level of therm usage of residential customers.

SPONSOR: James D. Steffes  
Senior Vice President, Regulatory Affairs

Washington Gas EmPOWER Maryland Programs - January 2015 - June 2023					
Program	Reported Total Program Expenditures (\$)	Reported Lifecycle Energy Savings (Therms)	Cost per Lifecycle Energy Savings (Therms)	Lifecycle CO2e (metric tons)	Cost per Lifecycle CO2e (metric tons)
<b>Residential EE&amp;C Programs</b>					
Residential Existing Home	\$ 14,851,412	15,820,790	\$ 0.94	99,643	\$ 149.05
<i>Equipment</i>	\$ 1,132,312	215,839	\$ 5.25	1,359	\$ 832.94
<i>HVAC</i>	\$ 2,460,779	3,010,566	\$ 0.82	18,961	\$ 129.78
<i>Energy Conservation Kits</i>	\$ 297,953	663,050	\$ 0.45	4,176	\$ 71.35
Residential New Construction	\$ 23,264,345	39,955,616	\$ 0.58	251,650	\$ 92.45
Behavior Based Program	\$ 6,761,453	5,443,923	\$ 1.24	34,287	\$ 197.20
Residential Retrofit Coordinated	\$ 16,350,927	10,000,958	\$ 1.63	62,989	\$ 259.59
<b>Residential Energy Efficiency Programs Subtotal</b>	<b>\$ 61,228,137</b>	<b>71,221,287</b>	<b>\$ 0.86</b>	<b>448,569</b>	<b>\$ 136.50</b>
<b>Commercial and Industrial EE&amp;C Programs</b>					
C&I Prescriptive	\$ 9,552,902	13,692,751	\$ 0.70	86,240	\$ 110.77
Custom	\$ 4,134,583	7,816,655	\$ 0.53	49,231	\$ 83.98
<b>Large Industrial and Commercial Programs Subtotal</b>	<b>\$ 13,687,485</b>	<b>21,509,406</b>	<b>\$ 0.64</b>	<b>135,472</b>	<b>\$ 101.04</b>
<b>Total EE&amp;C Programs</b>					
<b>Energy Efficiency and Conservation Programs Subtotal</b>	<b>74,915,622</b>	<b>92,730,693</b>	<b>\$ 0.81</b>	<b>584,041</b>	<b>\$ 128.27</b>
<b>Limited Income Programs (Utility Costs Only)</b>					
DHCD Implemented Limited Income Programs	\$ 16,695,049	10,094,329		63,577	
<b>Limited Income Programs Subtotal</b>	<b>\$ 16,695,049</b>	<b>10,094,329</b>	<b>\$ 1.65</b>	<b>63,577</b>	<b>\$ 262.60</b>
<b>EmPOWER Maryland Portfolio</b>					
<b>All Program Totals</b>	<b>\$ 91,610,671</b>	<b>102,825,022</b>	<b>\$ 0.89</b>	<b>647,618</b>	<b>\$ 141.46</b>

Sierra Club Exhibit (A)-4

Formal Case No. 1180

Witness Karl R. Rábago

## ANNUAL INFORMATION FORM

For the year ended December 31, 2023  
March 7, 2024

**AltaGas**





## TABLE OF CONTENTS

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<u>GENERAL INFORMATION</u>	<u>2</u>
<u>FORWARD-LOOKING INFORMATION AND STATEMENTS</u>	<u>2</u>
<u>CORPORATE STRUCTURE</u>	<u>4</u>
<u>OVERVIEW OF THE BUSINESS</u>	<u>6</u>
<u>ALTAGAS' GEOGRAPHIC FOOTPRINT</u>	<u>7</u>
<u>GENERAL DEVELOPMENT OF ALTAGAS' BUSINESS</u>	<u>8</u>
<u>DEVELOPMENT OF THE UTILITIES BUSINESS OF ALTAGAS</u>	<u>8</u>
<u>DEVELOPMENT OF THE MIDSTREAM BUSINESS OF ALTAGAS</u>	<u>11</u>
<u>DEVELOPMENT OF THE CORPORATE/OTHER BUSINESS OF ALTAGAS</u>	<u>12</u>
<u>BUSINESS OF THE CORPORATION</u>	<u>13</u>
<u>UTILITIES BUSINESS</u>	<u>13</u>
<u>MIDSTREAM BUSINESS</u>	<u>26</u>
<u>CORPORATE/OTHER SEGMENT</u>	<u>44</u>
<u>CAPITAL STRUCTURE</u>	<u>47</u>
<u>GENERAL</u>	<u>50</u>
<u>EMPLOYEES</u>	<u>50</u>
<u>DIRECTORS AND OFFICERS</u>	<u>50</u>
<u>EXECUTIVE OFFICERS</u>	<u>53</u>
<u>AUDIT COMMITTEE</u>	<u>53</u>
<u>RISK FACTORS</u>	<u>55</u>
<u>ENVIRONMENTAL, SOCIAL, AND GOVERNANCE</u>	<u>72</u>
<u>DIVIDENDS</u>	<u>76</u>
<u>MARKET FOR SECURITIES</u>	<u>77</u>
<u>CREDIT RATINGS</u>	<u>79</u>
<u>MATERIAL CONTRACTS</u>	<u>80</u>
<u>INTEREST OF MANAGEMENT AND OTHERS IN MATERIAL TRANSACTIONS</u>	<u>80</u>
<u>LEGAL PROCEEDINGS</u>	<u>80</u>
<u>REGULATORY ACTIONS</u>	<u>81</u>
<u>INTERESTS OF EXPERTS</u>	<u>81</u>
<u>ADDITIONAL INFORMATION</u>	<u>81</u>
<u>TRANSFER AGENTS AND REGISTRARS</u>	<u>81</u>
<u>METRIC CONVERSION</u>	<u>82</u>
<u>GLOSSARY</u>	<u>82</u>
<u>SCHEDULE A: AUDIT COMMITTEE MANDATE</u>	<u>92</u>

## GENERAL INFORMATION

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Unless otherwise noted, the information contained in this AIF is stated as at December 31, 2023 and all dollar amounts in this AIF are in Canadian dollars. Financial information is presented in accordance with United States generally accepted accounting principles. For an explanation of certain terms and abbreviations used in this AIF, see the "Glossary" of this AIF.

## FORWARD-LOOKING INFORMATION AND STATEMENTS

---

This AIF contains forward-looking information ("forward-looking statements"). Words such as "may", "can", "would", "could", "should", "will", "intend", "plan", "anticipate", "believe", "aim", "seek", "propose", "contemplate", "estimate", "focus", "strive", "forecast", "expect", "project", "target", "potential", "objective", "continue", "outlook", "vision", "opportunity", and similar expressions suggesting future events or future performance, as they relate to the Corporation or any affiliate of the Corporation, are intended to identify forward-looking statements. In particular, this AIF contains forward-looking statements with respect to, among other things, business objectives, expected growth, results of operations, performance, business projects and opportunities and financial results.

Specifically, such forward-looking statements included in this document include, but are not limited to, statements with respect to the following: AltaGas' strategy, priorities and focus with regard to its Utilities and Midstream segments; expected financial impact of requested rates; timing of material regulatory filings, proceedings and decisions in the Utilities business; Washington Gas' ability to maintain NGQSS levels; proposed expenditures on energy waste reduction; penalties for breaching merger commitments associated with the WGL Acquisition; expected delivery of additional VLGCs and the anticipated benefits of the seven-year time charter including reduced maritime shipping costs and lower pricing volatility; Washington Gas' potential remediation obligations related to real property; SEMCO potential obligations related to environmental, health and safety regulations; AltaGas' belief in the role and importance of global resource exports; expected in-service and completion dates for current projects and transactions in the Midstream business, including REEF, the carbon capture opportunity at Harmattan, the Mountain Valley pipeline, the MVP Southgate Project, Pipestone Phase II and the Dimsdale expansion project and the anticipated benefits of such projects and transactions; REEF reaching a positive FID, the timing thereof and AltaGas' responsibilities with respect to the construction and operation of REEF; AltaGas' 2024 strategic priorities, including its competitive advantage, export capabilities and logistics optimization; AltaGas' expectations for continued North American natural gas development, LPG supply/demand imbalance in North America, strong Asian demand and a robust pricing differential; the percentage of contracted volumes expected to be shipped from the Ferndale terminal and RIPET in 2024; anticipated timing and impact of material environmental legislation and regulations on AltaGas' businesses; expected impacts of conflicts, including the Eastern European conflict, on AltaGas' business and operations; anticipated timing and impact of court and regulatory proceedings on AltaGas' businesses, including with respect to Indigenous and treaty rights; expectation that existing credit facilities are sufficient for operations and AltaGas' ability to refinance on commercially reasonable terms; and AltaGas' ESG commitments, strategies, policies, priorities and goals, AltaGas' ability to achieve and implement them into its businesses and operations, and any expected outcomes therefrom.

These statements involve known and unknown risks, uncertainties and other factors that may cause actual results, events, and achievements to differ materially from those expressed or implied by such statements. Such statements reflect AltaGas' current expectations, estimates, and projections based on certain material factors and assumptions at the time the statement was made. Material assumptions include: effective tax rate of approximately 21 percent, U.S./ Canadian dollar exchange rates; inflation; interest rates, credit ratings, regulatory approvals and policies; expected commodity supply, demand and pricing; volumes and rates; propane price differentials; degree day variance from normal; pension discount rate; financing initiatives; the performance of the businesses underlying each sector; impacts of the

hedging program; weather; frac spread; access to capital; future operating and capital costs; timing and receipt of regulatory approvals; seasonality; planned and unplanned plant outages; timing of in-service dates of new projects and acquisition and divestiture activities; taxes; operational expenses; returns on investments; dividend levels; and transaction costs.

AltaGas' forward-looking statements are subject to certain risks and uncertainties which could cause results or events to differ from current expectations, including, without limitation: health and safety risks; operating risks; infrastructure; natural gas supply risks; volume throughput; service interruptions; transportation of petroleum products; market risk; inflation; general economic conditions; cybersecurity, information, and control systems; climate-related risks; environmental regulation risks; regulatory risks; litigation; changes in law; Indigenous and treaty rights; dependence on certain partners; political uncertainty and civil unrest; risks related to conflict, including the conflicts in Eastern Europe and the Middle East; decommissioning, abandonment and reclamation costs; reputation risk; weather data; capital market and liquidity risks; interest rates; internal credit risk; foreign exchange risk; debt financing, refinancing, and debt service risk; counterparty and supplier risk; technical systems and processes incidents; growth strategy risk; construction and development; underinsured and uninsured losses; impact of competition in AltaGas' businesses; counterparty credit risk; composition risk; collateral; rep agreements; market value of the Common Shares and other securities; variability of dividends; potential sales of additional shares; labor relations; key personnel; risk management costs and limitations; commitments associated with regulatory approvals for the acquisition of WGL; cost of providing retirement plan benefits; failure of service providers; risks related to pandemics, epidemics or disease outbreaks; and the other factors discussed under the heading "Risk Factors" in this AIF.

Many factors could cause AltaGas' or any particular business segment's actual results, performance, or achievements to vary from those described in this AIF, including, without limitation, those listed above and the assumptions upon which they are based proving incorrect. These factors should not be construed as exhaustive. Should one or more of these risks or uncertainties materialize, or should assumptions underlying forward-looking statements prove incorrect, actual results may vary materially from those described in this AIF as intended, planned, anticipated, believed, sought, proposed, estimated, forecasted, expected, projected, or targeted and such forward-looking statements included in this AIF should not be unduly relied upon. The impact of any one assumption, risk, uncertainty, or other factor on a particular forward-looking statement cannot be determined with certainty because they are interdependent and AltaGas' future decisions and actions will depend on management's assessment of all information at the relevant time. Such statements speak only as of the date of this AIF. AltaGas does not intend, and does not assume any obligation, to update these forward-looking statements except as required by law. The forward-looking statements contained in this AIF are expressly qualified by these cautionary statements.

Financial outlook information contained in this AIF about prospective results of operations, financial position, or cash flow is based on assumptions about future events, including economic conditions and proposed courses of action, based on management's assessment of the relevant information currently available. Readers are cautioned that such financial outlook information contained in this AIF should not be used for purposes other than for which it is disclosed herein.

Additional information relating to AltaGas, including its quarterly and annual MD&A and Consolidated Financial Statements and press releases are available through AltaGas' website at [www.altagas.ca](http://www.altagas.ca) or through SEDAR+ at [www.sedarplus.ca](http://www.sedarplus.ca).

## CORPORATE STRUCTURE

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### Incorporation

AltaGas is a Canadian corporation amalgamated pursuant to the CBCA on January 1, 2020. AltaGas and/or its predecessors began operations in Calgary, Alberta on April 1, 1994 and AltaGas continues to maintain its head, principal, and registered office in Calgary, Alberta currently located at 1700, 355 – 4th Avenue SW, Calgary, Alberta T2P 0J1. AltaGas is a public company, the Common Shares of which trade on the TSX under the symbol "ALA".

### Amended Articles

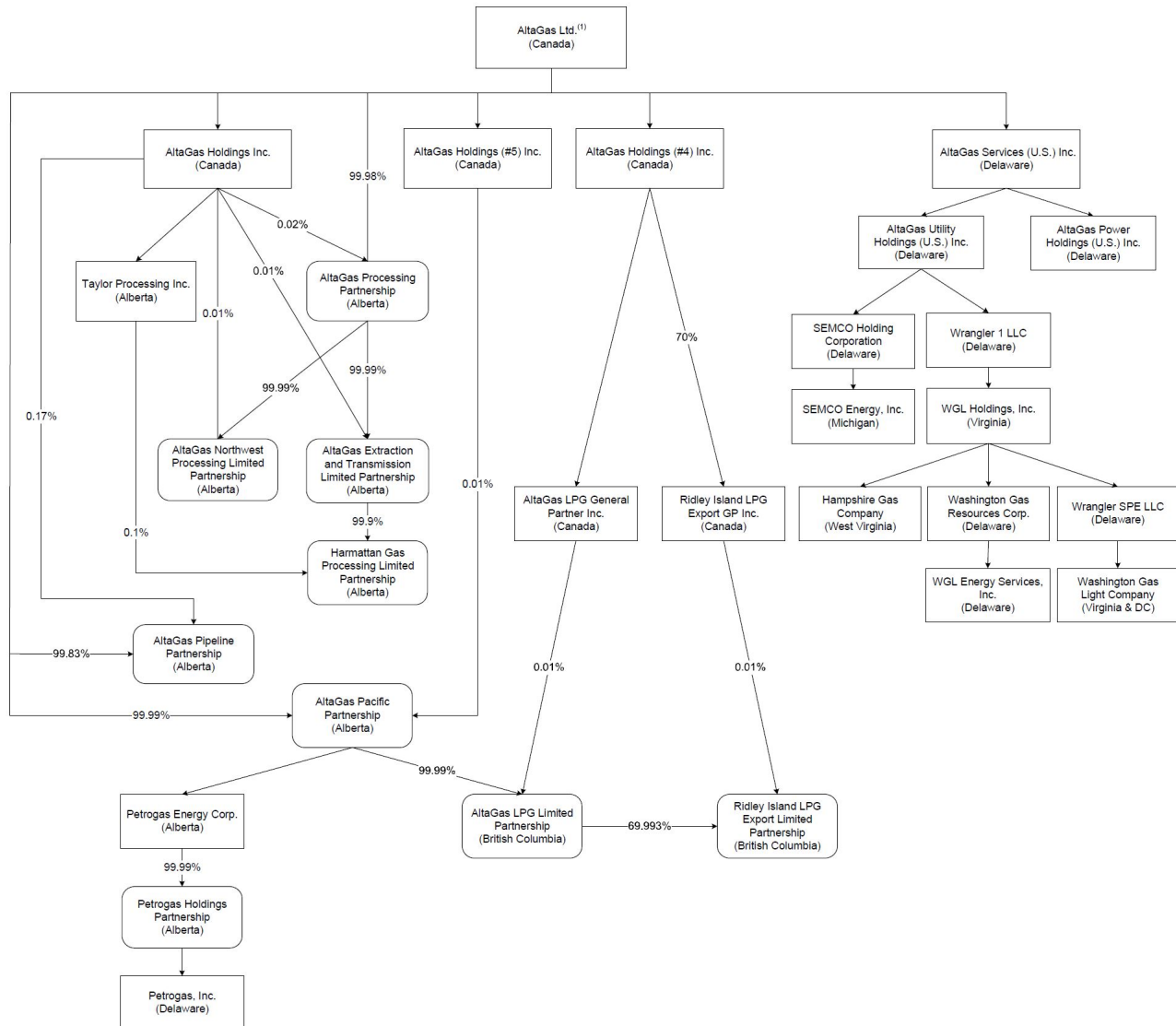
On July 1, 2010, AltaGas filed articles of arrangement under the CBCA to effect a corporate arrangement and the amalgamation of AltaGas Ltd., AltaGas Conversion Inc., and AltaGas Conversion #2 Inc. to form AltaGas. Subsequent to the filing of the articles of arrangement, AltaGas filed articles of amendment on the following dates in connection with the creation of each series of Preferred Shares: (i) August 13, 2010 to create the first series of Preferred Shares, Series A Shares and the second series of Preferred Shares, Series B Shares; (ii) June 1, 2012 to create the third series of Preferred Shares, Series C Shares and the fourth series of Preferred Shares, Series D Shares; (iii) December 9, 2013 to create the fifth series of Preferred Shares, Series E Shares and the sixth series of Preferred Shares, Series F Shares; (iv) June 27, 2014 to create the seventh series of Preferred Shares, Series G Shares and the eighth series of Preferred Shares, Series H Shares; (v) November 17, 2015 to create the ninth series of Preferred Shares, Series I Shares and the tenth series of Preferred Shares, Series J Shares; and (vi) February 15, 2017 to create the eleventh series of Preferred Shares, Series K Shares and the twelfth series of Preferred Shares, Series L Shares. On January 1, 2020, AltaGas filed articles of amalgamation to effect the amalgamation of AltaGas with its non-operating subsidiaries AltaGas Investment Ltd., 11801376 Canada Ltd., and Northwest Triumph Contracting Ltd. On January 7, 2022, AltaGas filed articles of amendment to create the thirteenth series of Preferred Shares, Series 2022-A Shares, on August 15, 2022, AltaGas filed articles of amendment to create the fourteenth series of Preferred Shares, Series 2022-B Shares, and on November 8, 2023, AltaGas filed articles of amendment to create the fifteenth series of Preferred Shares, Series 2023-A Shares.

### Subsidiary Entities

The businesses of AltaGas are operated by the Company and a number of its subsidiaries including, without limitation, AltaGas Services (U.S.) Inc., AltaGas Utility Holdings (U.S.) Inc., WGL Holdings, Inc. ("WGL"), Wrangler 1 LLC, Wrangler SPE LLC, Washington Gas Resources Corp., WGL Energy Services, Inc. ("WGL Energy Services"), and SEMCO Holding Corporation; in regard to the Utilities business, Washington Gas Light Company ("Washington Gas"), Hampshire Gas Company, and SEMCO Energy, Inc. ("SEMCO Energy"); and in regard to the Midstream business, AltaGas Extraction and Transmission Limited Partnership, AltaGas Pipeline Partnership, AltaGas Processing Partnership, AltaGas Northwest Processing Limited Partnership, Harmattan Gas Processing Limited Partnership, Ridley Island LPG Export Limited Partnership, AltaGas Pacific Partnership, AltaGas LPG Limited Partnership, Petrogas Energy Corporation ("Petrogas"), Petrogas Holdings Partnership, and Petrogas, Inc. In the Corporate/Other segment the main subsidiary is AltaGas Power Holdings (U.S.) Inc. SEMCO Energy conducts its Michigan natural gas distribution business under the name SEMCO Energy Gas Company ("SEMCO").

## Intercorporate Relationships

The following organization diagram presents the name and the jurisdiction of incorporation of certain of AltaGas' subsidiaries as at the date of this AIF. The diagram does not include all of the subsidiaries of AltaGas. The assets and revenues of those subsidiaries omitted from the diagram individually did not exceed 10 percent, and in the aggregate did not exceed 20 percent, of the total consolidated assets or total consolidated revenues of AltaGas as at and for the year ended December 31, 2023.



(1) Updated as of the date of this Annual Information Form.

(2) Unless otherwise stated, ownership is 100%.

## OVERVIEW OF THE BUSINESS

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AltaGas is a leading North American energy infrastructure company that connects customers and markets to affordable and reliable sources of energy. The Company operates a diversified, lower-risk, high-growth energy infrastructure business that is focused on delivering resilient and durable value for its stakeholders.

AltaGas' operating segments include the following:

- Utilities, which owns and operates franchised, cost-of-service, rate regulated natural gas distribution and storage utilities that focus on providing safe, reliable, and affordable energy to approximately 1.6 million residential and commercial customers. This includes operating two utilities that operate across four major U.S. jurisdictions with a rate base of approximately US\$5.1 billion. The Utilities business also includes storage facilities and contracts for interstate natural gas transportation and storage services, as well as WGL Energy Services, an affiliated retail energy marketing business, which sells natural gas and electricity directly to residential, commercial, and industrial customers located in Maryland, Virginia, Delaware, Pennsylvania, Ohio, and the District of Columbia; and
- Midstream, which is a leading North American platform that connects customers and markets from wellhead to tidewater. The three pillars of the Midstream business include: 1) global exports, which includes AltaGas' two operational LPG export terminals and one prospective development terminal; 2) natural gas gathering, processing, and extraction; and 3) fractionation and liquids handling. AltaGas' Midstream segment also includes its natural gas and NGL marketing businesses, domestic logistics, trucking and rail terminals, and liquid and natural gas storage capability.

AltaGas' Corporate/Other segment consists of the Company's corporate activities and a small portfolio of gas-fired power generation and distribution assets capable of generating 508 MW of power primarily in California.

## ALTAGAS' GEOGRAPHIC FOOTPRINT



**AltaGas**

**Utilities**

### Breakdown

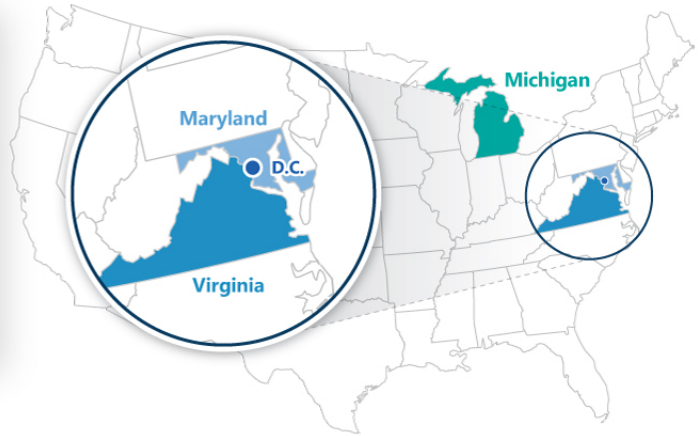


Customers <sup>1</sup>	Rate Base (US\$MM)	Allowed ROE
Maryland	515,000	1,569
Virginia	553,000	1,860
D.C.	165,000	777



Michigan	328,000	894
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1) Numbers are rounded/approximate.



**AltaGas**

**Midstream**

NGL Fractionation

Gas Processing

Processing and Fractionation

LPG Export Terminal

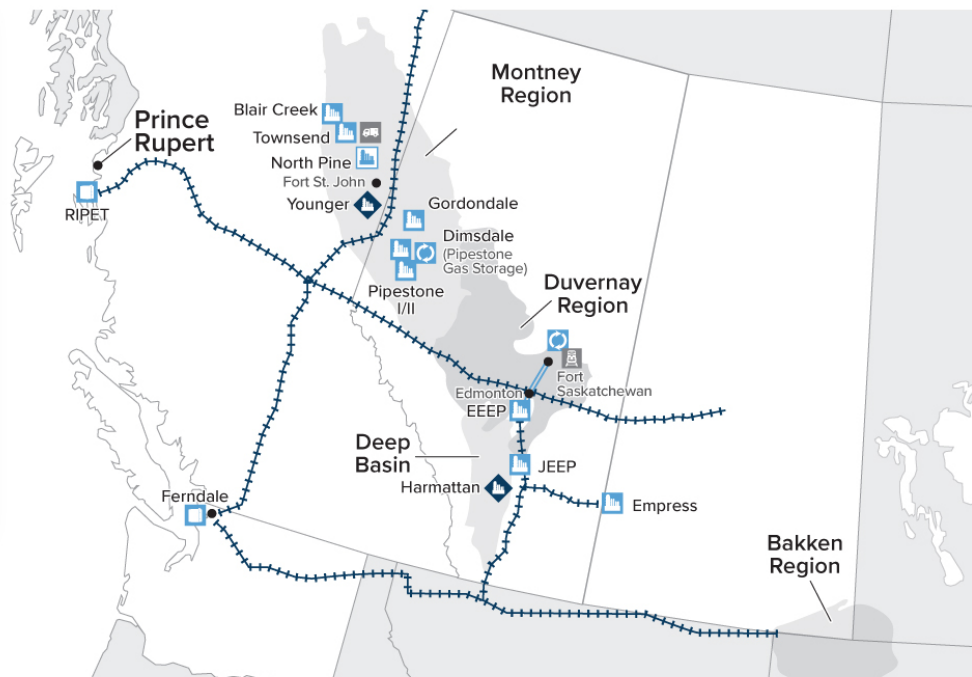
Storage Facility

Truck Terminal

Rail Transport

Rail

Pipeline



## GENERAL DEVELOPMENT OF ALTAGAS' BUSINESS

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Below is a summary of key developments, acquisitions and dispositions, construction projects and other commercial arrangements broken down by business segment, which have influenced the development of the business segments of the Corporation over the last three completed fiscal years.

### Utilities

- On February 24, 2021, the PSC of DC approved Washington Gas' settlement agreement in its recent rate case, reflecting a base rate increase of approximately US\$20 million effective April 1, 2021.
- On April 9, 2021, the PSC of MD issued a Final Order affirming the PULJ in Washington Gas' recent rate case, reflecting a base rate increase of approximately US\$13 million effective on March 26, 2021. See "Business of the Corporation - Utilities Business - Washington Gas - Recent Material Regulatory Developments and Approvals".
- On July 1, 2021, SEMCO Energy submitted its 2022-2023 EWRP plan, a form of energy efficiency program for its customers, for approval by the MPSC. SEMCO Energy proposed to spend approximately US\$30 million on energy waste reduction over 2022 and 2023 to achieve a combined first year energy savings goal of approximately 10.1 million therms. On April 25, 2022, the MPSC approved the EWRP plan.
- On September 15, 2021, the PSC of DC issued an Order directing Washington Gas to submit a corrective action plan to bring Washington Gas into compliance with the NGQSS regarding call response time standards. Washington Gas was in compliance with the call answering and call abandonment NGQSS service metrics as of January 2022, and expects to maintain NGQSS levels for these metrics going forward.
- On September 30, 2021, the MD OPC filed a motion to establish a corrective action plan and impose civil penalties or, alternatively, to order Washington Gas to show cause why the Commission should not impose civil penalties in regards to violation of Condition 11, relating to customer service requirements, of the PSC of MD Order in the Washington Gas Merger proceeding with AltaGas. On March 17, 2022, the PSC of MD issued an Order imposing a civil penalty of approximately US\$1.1 million on Washington Gas, which was paid in full on March 31, 2022. On March 27, 2023, Washington Gas filed with the PSC of MD a Joint Motion for Approval of a Revised Corrective Action Plan. On April 6, 2023, the PSC of MD approved the Plan, which allows for dunning activities and late fee assessments to recommence in Maryland. See "Business of the Corporation - Utilities Business - Washington Gas - Recent Material Regulatory Developments and Approvals".
- On December 1, 2021, Washington Gas filed its proposed amendment for the 2023 to 2027 SAVE program, proposing to invest approximately US\$889 million from 2023 to 2027 to replace higher risk pipeline and facilities in Virginia. On May 26, 2022, the SCC of VA approved the proposed amendment with a total five-year spending cap of approximately US\$878 million, which may be exceeded by up to 5 percent.
- On December 17, 2021, Washington Gas filed a proposed amendment for its CARE Plan for the period from May 2022 to April 2025, proposing to continue and expand its portfolio of energy efficiency programs to Virginia



customers with a total three-year budget of approximately US\$12 million. On April 13, 2022, the SCC of VA approved the proposed US\$12 million CARE Plan for residential and commercial customers for the three year period beginning May 1, 2022.

- On April 4, 2022, Washington Gas filed an application for authority to increase charges for gas service in the District of Columbia. The requested rates are designed to collect an incremental US\$48 million in revenues, net of approximately US\$5 million of costs collected through the PROJECT*pipes* surcharge. On December 22, 2023, the PSC of DC approved an incremental increase of approximately US\$20 million in revenues, net of approximately US\$5 million of costs collected through the PROJECT*pipes* surcharge. The new rates went into effect January 19, 2024. Requests for reconsideration of certain limited findings in the Commission's decision were filed by certain parties. On February 22, 2024, the PSC of DC issued an Order with parameters for an ACOSS, which would include the allocation and assignment of costs for services Washington Gas has provided to affiliated entities and has received payment for such services. Parties in the case have 20 days from the date of the order to file any additional information they believe should be included in the ACOSS. Washington Gas must file its ACOSS 90 days before filing its next base rate case. The Order denied other requests for reconsideration. See "Business of the Corporation - Utilities Business - Washington Gas - Recent Material Regulatory Developments and Approvals".
- On December 22, 2022, Washington Gas filed an application with the PSC of DC for the third phase of PROJECT*pipes* ("PROJECT*pipes* 3"), seeking approval of approximately US\$672 million for the five-year period from January 1, 2024 to December 31, 2028. On November 6, 2023, Washington Gas filed a request to extend PROJECT*pipes* 2 through December 31, 2024, while the PSC of DC continues to evaluate the PROJECT*pipes* 3 application. The DC OPC opposed the request, and Washington Gas responded. On December 20, 2023, the PSC of DC held Washington Gas' extension request in abeyance and directed the filing of additional information to justify the extension. On January 4, 2024, Washington Gas filed the requested information. Other parties subsequently filed comments responding to Washington Gas' submission. On February 23, 2024, the PSC of DC granted Washington Gas' request to extend PROJECT*pipes* 2 and the surcharge for 12 months, through February 2025, with a surcharge spending limit of US\$50 million. Washington Gas must also file a project list for the extension period within 15 days of the date of the Order. See "Business of the Corporation - Utilities Business - Washington Gas - Recent Material Regulatory Developments and Approvals".
- On March 1, 2023, AltaGas closed the Alaska Utilities Disposition for consideration of US\$800 million (approximately CAD\$1.1 billion) prior to closing adjustments, resulting in a pre-tax gain on disposition of approximately \$304 million.
- On May 18, 2023, Washington Gas filed an application for authority to increase charges for gas service in Maryland. The requested rates are designed to collect an incremental US\$28 million in revenues, net of approximately US\$21 million of costs collected through the STRIDE surcharge. On December 14, 2023, the PSC of MD approved a US\$10 million rate increase with a 9.5 percent return on equity and 52 percent equity thickness. The amount is comprised of approximately US\$12 million for costs currently recovered through the STRIDE plan surcharge and a US\$2 million decrease in base rates. The new rates went into effect December 14,

2023. See "Business of the Corporation - Utilities Business - Washington Gas - Recent Material Regulatory Developments and Approvals".

- On June 16, 2023, Washington Gas filed an application with the PSC of MD for the third phase of its modernization ARP program, seeking approval for approximately US\$495 million of modernization investments over the five-year period from January 1, 2024 to December 31, 2028. On October 25, 2023, a public law judge issued a proposed order to approve the STRIDE 3 plan, subject to a reduced number of replacement projects equal to a reduction to the five-year budget by at least one third. On November 13, 2023, Washington Gas notified the PSC of MD that it accepts the order. Two other parties (MD OPC and Sierra Club) appealed, with Sierra Club arguing for a greater reduction. On December 13, 2023, the PSC of MD affirmed the public law judge's proposed order in part, and directed Washington Gas to negotiate the terms of a notice to be sent to impacted customers. On January 10, 2024, the PSC of MD issued a memorandum explaining its December 13, 2023 decision. On February 9, 2024, the MD OPC filed a motion for rehearing with the PSC of MD. Washington Gas filed a response on February 22, 2024 and a PSC of MD decision for rehearing is pending. See "Business of the Corporation - Utilities Business - Washington Gas - Recent Material Regulatory Developments and Approvals".
- On June 29, 2022, Washington Gas filed an application for authority to increase rates in the Commonwealth of Virginia. On August 29, 2023, the SCC of VA adopted the Hearing Examiner's report for the Virginia rate case, approving approximately US\$41 million of incremental base rates plus approximately US\$32 million of SAVE surcharges for a total rate increase of approximately US\$73 million. See "Business of the Corporation - Utilities Business - Washington Gas - Recent Material Regulatory Developments and Approvals".
- On June 30, 2023, SEMCO submitted its 2024-2025 EWRP proposing to spend approximately US\$35 million on energy waste reduction over the two-year period. On December 21, 2023 the MPSC approved the EWRP settlement agreement. See "Business of the Corporation - Utilities Business - SEMCO Energy - Recent Material Regulatory Developments and Approvals".
- On October 19, 2023, Washington Gas issued US\$200 million in private placement notes, which includes US\$150 million at 6.06 percent maturing on October 14, 2033 and US\$50 million at 6.43 percent maturing on October 15, 2053.
- On October 20, 2023, Washington Gas executed a definitive agreement with Opal Fuels Inc. to support a RNG project at the Prince William County Landfill in Virginia. As part of the agreement, Washington Gas will become an offtake customer for RNG production and purchase key interconnect infrastructure for approximately US\$25 million and continue to advance long-term climate goals.
- Effective January 1, 2024, the PSC of MD approved Washington Gas' three-year plan modifying and expanding the existing portfolio of programs for residential, commercial, industrial, and low-income customers with a total three-year budget of approximately US\$64 million. See "Business of the Corporation - Utilities Business - Washington Gas - Recent Material Regulatory Developments and Approvals".

## Midstream

- On April 23, 2021, AltaGas completed the sale of the U.S. transportation and storage business for cash proceeds of approximately \$341 million (US\$275 million), resulting in a pre-tax gain on disposition of approximately \$3 million.
- On April 12, 2022, AltaGas closed the sale of its interest in the Aitken Creek processing facilities for cash consideration of approximately \$224 million, net of closing adjustments, resulting in a pre-tax gain of \$1 million.
- On June 23, 2022, the Canada Energy Regulator issued AltaGas a 25-year export license for an additional 46,000 Bbls/d of butane.
- On July 5, 2022, AltaGas announced the purchase of the remaining equity ownership of Petrogas from Idemitsu for total cash consideration of approximately \$285 million.
- In February 2023, AltaGas reached an agreement with an investment grade counterparty to extend the existing throughput and marketing agreement at the Ferndale terminal by five years through 2033. The extension is aligned with AltaGas' long-term focus of de-risking the global exports business and operating in strong partnership with its customers to drive the best collective outcomes for all parties.
- In April 2023, AltaGas entered a seven-year time charter with two one-year optional extensions for a new 545 Mbbbl dual fuel VLGC with delivery expected in the first half of 2026. The agreement is expected to further reduce AltaGas' maritime shipping costs by approximately 25 percent relative to current Baltic freight forward pricing, while lowering pricing volatility.
- On April 2023, AltaGas and Vopak entered into a 50/50 joint venture to develop REEF, a large-scale LPG and bulk liquids terminal and marine infrastructure on Ridley Island near Prince Rupert, British Columbia. Should REEF reach a positive FID, which is expected in the second quarter of 2024, the facility is planned to be developed and brought online in phases. In November 2023, site clearing work including logging, clearing, and draining activities commenced which further solidify the project's readiness prior to reaching an FID. See "Business of the Corporation - Midstream Business - Global Exports - REEF".
- On December 22, 2023, AltaGas closed the previously announced acquisition of natural gas processing and storage infrastructure assets in the Pipestone area of the Alberta Montney (the "Pipestone Acquisition") with Tidewater Midstream and Infrastructure Ltd. ("Tidewater") for consideration upon close of \$328 million in cash and approximately 12.5 million AltaGas common shares, inclusive of working capital and other adjustments. The Pipestone Acquisition includes the Pipestone natural gas processing facility Phase I, the Pipestone Phase II expansion project which is being developed, the Dimsdale natural gas storage facility, the Pipestone condensate truck-in/truck-out terminal, and the associated gathering pipeline systems required to operate these assets. Following the completion of key de-risking milestones in December 2023, AltaGas declared a positive final investment decision ("FID") on the Pipestone Phase II expansion project.

Corporate/Other

- On January 11, 2022, AltaGas closed an offering of \$300 million aggregate principal amount of Subordinated Notes, Series 1. The Subordinated Notes, Series 1 were offered under the Corporation's base shelf prospectus dated February 22, 2021, as supplemented by a prospectus supplement dated January 5, 2022. In connection with the offering, 300,000 Series 2022-A Shares were issued to Computershare Trust Company of Canada to satisfy AltaGas' obligations under the Series 1 Indenture. The proceeds from the offering were used to redeem the Corporation's outstanding Series K Shares on March 31, 2022.
- On February 9, 2022, AltaGas closed the sale of a 60 MW stand-alone energy storage development project in Goleta, California for total proceeds of approximately \$20 million (US\$15 million), subject to certain contingencies. In February 2023, the parties reached an agreement on outstanding contingencies and as a result, the buyer paid AltaGas an additional payment of approximately \$11 million (US\$8 million) which was recognized as a pre-tax gain on disposition.
- On May 27, 2022, AltaGas closed the stock sale of its 70 MW combined cycle power plant in Brush, Colorado for total proceeds of approximately \$1 million, net of closing adjustments, resulting in a pre-tax loss of \$2 million.
- On August 17, 2022, AltaGas closed its offering of \$250 million aggregate principal amount of Subordinated Notes, Series 2. The Subordinated Notes, Series 2 were offered under the Corporation's base shelf prospectus dated February 22, 2021, as supplemented by a prospectus supplement dated August 4, 2022. In connection with the offering, 250,000 Series 2022-B Shares were issued to Computershare Trust Company of Canada to satisfy AltaGas' obligations under the Series 2 Indenture. The proceeds from the offering were used to redeem the Corporation's outstanding Series C Shares on September 30, 2022.
- Effective July 1, 2023, Vern Yu joined AltaGas as President and Chief Executive Officer and was appointed to the Board of Directors. Mr. Yu has over three decades of experience in energy infrastructure, including the Utilities and Midstream sectors across North America.
- In February 2023, AltaGas reached an agreement with SCE for the purchase of resource adequacy attributes from the Blythe facility for the period from January 1, 2024 through December 31, 2027.
- On May 15, 2023, AltaGas closed its offering of \$400 million senior unsecured MTNs with a coupon rate of 4.638 percent, due May 15, 2026. The net proceeds were used to pay down existing indebtedness under AltaGas' credit facility and refinance the senior unsecured MTNs that matured in June 2023.
- On November 10, 2023, AltaGas closed its offering of \$200 million aggregate principal amount of Subordinated Notes, Series 3 due November 10, 2083. The Subordinated Notes, Series 3 were offered under AltaGas' short form base shelf prospectus dated March 31, 2023, as supplemented by a prospectus supplement dated November 7, 2023. In connection with the offering, 200,000 Series 2023-A Shares were issued to Computershare Trust Company of Canada to satisfy AltaGas' obligations under the Series 3 Indenture. The proceeds from the offering were used to redeem the Corporation's outstanding Series E Shares on December 31, 2023.

- On January 8, 2024, AltaGas closed its offering of \$400 million of senior unsecured MTNs with a coupon rate of 4.672 percent, due on January 8, 2029. The net proceeds were used to pay down existing indebtedness under AltaGas' credit facilities, to fund working capital, and for general corporate purposes. A portion of the current indebtedness under AltaGas' credit facilities was incurred to fund the debt portion of the Pipestone Acquisition.

## BUSINESS OF THE CORPORATION

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AltaGas' revenue for the year ended December 31, 2023 was approximately \$13.0 billion compared to \$14.1 billion for the year ended December 31, 2022. In 2023, 63 percent of revenue from AltaGas' operating segments (excluding Corporate/ Other and intercompany eliminations) was from the Midstream segment and 37 percent was from the Utilities segment, compared to 64 percent and 36 percent, respectively, in 2022.

## UTILITIES BUSINESS

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The Utilities business contributed revenue of approximately \$4.8 billion for the year ended December 31, 2023 (2022 - \$5.0 billion), representing approximately 37 percent (2022 - 36 percent) of AltaGas' total revenue before the Corporate/ Other segment and intersegment eliminations.

### Utilities Business

The Utilities segment owns utility assets that deliver natural gas to end-users in the United States and operates a retail energy marketing business. The Utilities business is comprised of Washington Gas (in the District of Columbia, Maryland, and Virginia); Hampshire Gas, a regulated natural gas storage utility in West Virginia; SEMCO in Michigan; and WGL Energy Services, which sells natural gas and electricity to retail customers on an unregulated basis.

### Regulatory Process

The Utilities business predominantly operates in regulated marketplaces where, as franchise or certificate holders, regulated utilities are allowed by the regulator to charge regulated rates that provide the utilities the opportunity to recover costs and earn a return on capital. The return on capital is to reflect a fair rate of return on approved utility investments (i.e. rate base) based on a regulatory deemed or targeted capital structure. The ability of a regulated utility to recover prudently incurred costs of providing service and earn the regulator-approved rate of return on equity depends on the utility achieving the cost levels established in the rate-setting processes.

SEMCO and Washington Gas have accelerated pipe and infrastructure replacement programs in place in Michigan and in the District of Columbia, Maryland, and Virginia, respectively. These long-term programs are subject to both changing conditions and regulatory review and approval in multi-year increments. These programs enable SEMCO and Washington Gas to accelerate pipe and infrastructure replacement to further enhance the safety and reliability of the natural gas delivery system. SEMCO and Washington Gas are allowed to begin recovering the cost, including a return, for these investments immediately through approved surcharges for each accelerated pipe or infrastructure replacement program outside of a normal rate case process, mitigating regulatory lag. Once new base rates are put into effect in a given jurisdiction following approval of an application to increase rates, expenditures previously being recovered through the surcharge will be collected through the new base rates.

The Utilities business is subject to regulation over, among other things, rates, accounting procedures, and standards of service. The MPSC has jurisdiction over the regulatory matters related, directly or indirectly, to the services that SEMCO provides to its Michigan customers. Washington Gas is regulated by the PSC of DC, the PSC of MD, and the SCC of VA, which approve its terms of service and the billing rates that it charges to its customers, regulate interactions with affiliates, and regulate retail competition for natural gas supply service. In all jurisdictions, the regulators approve distribution rates based on a cost-of-service regulatory model. In the District of Columbia and Maryland, rates are set using the results from a historical test year plus known and measurable changes. In Michigan and Virginia, rates are set using a projected test year. In all jurisdictions, the rates charged to utility customers are designed to provide the distribution utility with an opportunity to recover all prudently incurred operating, depreciation, income tax, and financing costs and to earn a reasonable return on its investment in the net assets used in its gas sales and delivery service.

### Utilities Business Key Utility Metrics

The following table summarizes the average rate base for the Utilities business for the years ended December 31, 2023 and 2022:

<i>(US\$ millions)</i>	2023	2022
Rate base <sup>(1) (2)</sup>	<b>5,100</b>	5,211

- (1) Rate base is indicative of the earning potential of each utility over time. Approved revenue requirement for each utility is typically based on the rate base as approved by the regulator for the respective rate application, but may differ from the rate base indicated above.
- (2) 2023 rate base excludes ENSTAR and SEMCO Energy's 65 percent interest in CINGSA, which were sold on March 1, 2023 pursuant to the Alaska Utilities Disposition.

The following table summarizes the nature of regulation applicable to each utility:

Regulated Utility	Regulated Authority	% of AltaGas' Consolidated Rate Base as at December 31, 2023	Allowed Common Equity (%)	Allowed ROE (%) 2022	Allowed ROE (%) 2023	Significant Features/ Material Regulatory Developments
<b>Washington Gas</b>	PSC of MD SCC of VA PSC of DC	82%	52.0 - 52.5	9.2 - 9.7	9.3 - 9.7	<ul style="list-style-type: none"> <li>■ Rate case filed in August 2020 with the PSC of MD for an increase in rates. Evidentiary hearing took place January 2021 and the final order was issued in April 2021. On August 11, 2023, the Supreme Court of Maryland granted MD OPC's petition. On February 23, 2024, the Supreme Court of Maryland issued a decision upholding the PSC of MD's decision in the rate case regarding merger synergy savings.</li> <li>■ Rate case filed in April 2022 with the PSC of DC for an increase in rates. A legislative style hearing took place September 13, 2023 and final brief was filed October 11, 2023. On December 22, 2023, the PSC of DC approved an incremental increase of approximately US\$20 million in revenues, net of approximately US\$5 million of costs collected through the PROJECTpipes surcharge.</li> <li>■ Application for authority to increase rates filed in June 2022 with the SCC of VA. On August 29, 2023, the SCC of VA approved approximately \$41 million incremental base rate increase plus approximately \$32 million SAVE surcharges for total rate increase of approximately \$73 million.</li> <li>■ Application for authority to increase rates filed in May 2023 with the PSC of MD. On December 14, 2023, the PSC of MD approved a US\$10 million rate increase. The amount is comprised of US\$12 million for costs currently recovered through the STRIDE plan surcharge and a US\$2 million decrease in base rates. The new rates were effective on December 14, 2023.</li> </ul>
<b>SEMCO</b>	MPSC	18%	45.86	9.87	9.87	<ul style="list-style-type: none"> <li>■ Distribution rates approved under cost of service model.</li> <li>■ Use of projected test year for rate cases with 10-month limit to issue a rate order.</li> <li>■ Rate rider provides recovery relating to the MRP which allows SEMCO to accelerate the replacement of older portions of its system. IRIP was approved in the 2019 rate case for the years 2020 - 2025. Customers were billed a surcharge beginning in 2021 for the IRIP.</li> </ul>
<b>Hampshire Gas</b>	FERC	n/a	n/a	n/a	n/a	<ul style="list-style-type: none"> <li>■ Pass through cost of service tariff approved by FERC.</li> </ul>

## Washington Gas

Washington Gas has been engaged in the natural gas distribution business since 1848 and provides regulated gas distribution services to end users in the District of Columbia, Maryland and Virginia. The utility has approximately 1.2 million customers across these three jurisdictions: District of Columbia (~165,000; 13 percent), Maryland (~515,000; 42 percent), and Virginia (~553,000; 45 percent). Washington Gas operations are such that the loss of any one customer or group of customers would not have a significant adverse effect on its business.

The average number of customers at Washington Gas has increased by approximately 1 percent annually during the past three years, with an increase of 1 percent in 2023. While there may occasionally be variations in this pattern, average per customer annual gas consumption at Washington Gas over the longer-term has been gradually decreasing because of, among other things, the availability of utility programs and resources for customers to reduce consumption through: (1) investing in high-efficiency equipment and appliances; (2) optimizing home and building energy use; and (3) becoming more conscious of high energy usage and making changes to habits and routines.

### **Operations**

Washington Gas obtains natural gas supplies that originate from multiple regions throughout the U.S. At December 31, 2023, it had service agreements with four pipeline companies that provided firm transportation and storage services, with contract expiration dates ranging from 2024 to 2044. Washington Gas has also contracted with various interstate pipeline and storage companies to add to its storage and transportation capacity.

The following table sets out, by customer category, Washington Gas' deliveries:

	2023	2022
<b>Deliveries: (MDth)</b>		
Residential	60,815	70,121
Commercial	19,699	21,675
Transport	84,832	82,615
<b>Total deliveries</b>	<b>165,346</b>	<b>174,411</b>

	2023	2022
<b>Customers at Year End:</b>		
Residential	1,024,800	1,007,600
Commercial	49,812	50,503
Transport	158,145	168,707
<b>Total customers</b>	<b>1,232,757</b>	<b>1,226,810</b>

### **Seasonality**

The natural gas distribution business in the District of Columbia, Maryland, and Virginia is seasonal, as the majority of natural gas demand occurs during the winter heating season that extends from November to March. Accordingly, annualized individual quarterly revenues and earnings are not indicative of annual results.

Forecasted volumes in the District of Columbia are set based on the 30-year average Degree Days expected for the period. In Maryland and Virginia, there are billing mechanisms in place which are designed to eliminate the effects of variance in customer usage caused by weather and other factors such as conservation. In the District of Columbia, there is no weather normalization billing mechanism, nor does Washington Gas hedge to offset the effects of weather. As a result, colder or warmer weather will result in variances to financial results.



## Recent Material Regulatory Developments and Approvals

### ***District of Columbia Jurisdiction***

Washington Gas has an Accelerated Pipe Replacement Plan ("PROJECT*pipes*") for the replacement of higher-risk pipe associated with an aging infrastructure in its distribution system in the District of Columbia. On December 22, 2022, Washington Gas filed an application with the PSC of DC for PROJECT*pipes* 3, seeking approval of approximately US\$672 million for the five-year period from January 1, 2024 to December 31, 2028. Parties comment to Washington Gas filing was filed on June 16, 2023 and reply comment from Washington Gas was filed on July 17, 2023. On November 6, 2023, Washington Gas filed a request to extend PROJECT*pipes* 2, through December 31, 2024, while the PSC of DC continues to evaluate the PROJECT*pipes* 3 application. The DC OPC opposed the request, and Washington Gas responded. On December 20, 2023, the PSC of DC held Washington Gas' extension request in abeyance and directed the filing of additional information to justify the extension. On January 4, 2024, Washington Gas filed the requested information. Other parties subsequently filed comments responding to Washington Gas' submission. On February 23, 2024, the PSC of DC granted Washington Gas' request to extend PROJECT*pipes* 2 and the surcharge for 12 months, through February 2025, with a surcharge spending limit of US\$50 million. Washington Gas must also file a project list for the extension period within 15 days of the date of the Order.

On April 4, 2022, Washington Gas filed an application for authority to increase charges for gas service in the District of Columbia. The requested rates are designed to collect approximately US\$53 million in total annual revenues requesting a 10.4 percent rate of return on equity. Of the requested revenue increase, approximately US\$5 million represents costs currently collected through the PROJECT*pipes* surcharge; therefore, the incremental amount of the base rate increase is approximately US\$48 million. On June 23, 2023, the PSC of DC amended the procedural schedule. The DC OPC and Intervenor surrebuttal testimony was filed on May 19, 2023, Washington Gas' rejoinder testimony was filed on June 28, 2023. The PSC of DC determined that an evidentiary hearing will not be held in this case; however, a hearing was held on September 13, 2023 for oral arguments, with limited briefs addressing the issues presented in oral arguments filed on September 1, 2023. On December 22, 2023, the PSC of DC approved approximately a US\$25 million revenue increase of which approximately US\$5 million is the rolling in of the PROJECT*pipes* 2 surcharge (net revenue increase of approximately US\$20 million), based on 9.65 percent return on equity and 52 percent equity thickness. The new rates went into effect January 19, 2024. Requests for reconsideration of certain limited findings in the Commission's decision were filed by certain parties. On February 22, 2024, the PSC of DC issued an Order with parameters for an ACOSS, which would include the allocation and assignment of costs for services Washington Gas has provided to affiliated entities and has received payment for such services. Parties in the case have 20 days from the date of the order to file any additional information they believe should be included in the ACOSS. Washington Gas must file its ACOSS 90 days before filing its next base rate case. The Order denied other requests for reconsideration.

On August 9, 2023, the PSC of DC determined that AltaGas had failed to fulfill Term No. 5 Commitment of the PSC of DC's merger approval order related to the June 2018 merger of AltaGas, WGL, and Washington Gas. On reconsideration, the PSC of DC confirmed, in relevant part, that it had credited AltaGas with causing the development of 2.4 MW of Tier one renewable resources by the July 6, 2023 deadline, and that the Company had breached its Term No. 5 Commitment only for the remaining 7.6 MW. As directed by the PSC of DC, AltaGas, the District of Columbia Government ("DCG"), and the District of Columbia Office of People's Counsel ("DC OPC") conducted negotiations in good faith to reach agreement on a penalty. On November 14, 2023, DCG reported that DCG and AltaGas believed that further negotiations would be fruitless. In a November 21, 2023 motion, AltaGas confirmed that it will specifically perform its Term No. 5 obligations by continuing to cause the development of the remaining 7.6 MW of solar renewable energy. AltaGas also proposed a penalty of approximately US\$0.5 million if the Company fulfills the balance of its renewable development obligation before the end of 2024, or US\$0.6 million if the balance is not completed until after the end of 2024. On December 19, 2023, DCG proposed that AltaGas pay a penalty of approximately US\$8 million. OPC proposed a penalty not less than DCG's proposed penalty, to be paid before September 30, 2024. Management believes that the likelihood of a civil penalty is probable however, is unable to estimate the maximum possible penalty.

## ***Maryland Jurisdiction***

In August 2020, Washington Gas filed an application with the PSC of MD to increase its base rates by approximately US\$27 million, including approximately US\$6 million collected through the STRIDE surcharges for system upgrades. On April 9, 2021, a final order was received from the PSC of MD related to this rate increase application, authorizing Washington Gas to increase its Maryland natural gas distribution rates by approximately US\$13 million (including US\$6 million currently collected through the STRIDE surcharge), reflecting a return on equity of 9.70 percent. The revenue increase became effective on March 26, 2021. On May 14, 2021, the MD OPC filed a petition for re-hearing of the PSC of MD's finding on merger synergy savings and certain rate base additions. The request was denied and on August 31, 2021, the MD OPC filed an appeal of the PSC of MD's denial of their petition for a re-hearing with the Circuit Court of Baltimore City ("Circuit Court"). On June 30, 2022, the MD OPC appealed the Circuit Court's new order on merger synergy savings to the Appellate Court of Maryland (formerly the Maryland Court of Special Appeals). On August 11, 2023, the Supreme Court of Maryland granted OPC's petition. On February 23, 2024, the Supreme Court of Maryland issued a decision upholding the PSC of MD's decision in the rate case regarding merger synergy savings.

On September 2, 2022, Washington Gas filed a request with the PSC of MD seeking permission to resume collections, late fees, and terminations. On March 27, 2023, Washington Gas filed with the PSC of MD a Joint Motion for Approval of a revised corrective action plan ("Revised Corrective Action Plan"). The Joint Movants include the Company, the MD OPC and the Technical Staff of the PSC of MD. The Revised Corrective Action Plan allows Washington Gas to return to normal customer care activities, including resumption of dunning and disconnection, subject to enhanced customer notifications and offering of payment arrangements and reference to public assistance. The Revised Corrective Action Plan reduces the number of reportable call center metrics and establishes a self-assessed penalty system should Washington Gas miss newly defined quarterly metrics. On April 6, 2023, the PSC of MD approved the Joint Motion and Revised Corrective Action Plan, which allows for dunning activities and late fee assessments to recommence in Maryland over the next 60 days and disconnections over the next 90 days, subject to enhanced customer notifications.

On May 18, 2023, Washington Gas filed an application for authority to increase charges for gas service in Maryland. The requested rates are designed to collect approximately US\$49 million in total annual revenues requesting a 10.75 percent return on equity. Of the requested revenue increase, approximately US\$21 million represents costs currently collected through the STRIDE surcharge; therefore, the incremental amount of the base rate increase is approximately US\$28 million. On December 14, 2023, the PSC of MD approved a US\$10 million rate increase with a 9.5 percent return on equity and 52 percent equity thickness. The amount comprised of approximately US\$12 million for costs currently recovered through the STRIDE plan surcharge and a US\$2 million decrease in base rates. Two parties, the PSC of MD Staff and the General Service Administration, filed motions for clarification. The PSC of MD Staff motion for clarification recommended that the PSC of MD amend its finding to adopt a revised revenue increase of approximately US\$8 million to address inconsistencies it believes exist in the order. Washington Gas was the only party to file a petition for rehearing, on January 16, 2024. The MD OPC, the Apartment and Office Building Association of Greater Washington, and the Chesapeake Climate Action Network filed responses to the Washington Gas petition for rehearing. PSC of MD action on the motions is pending. The new rates went into effect December 14, 2023.

On June 16, 2023, Washington Gas filed an application with the PSC of MD for the third phase of its modernization ARP program, seeking approval for approximately US\$495 million in modernization investments on behalf of customers over the five-year period from January 1, 2024 to December 31, 2028. On October 25, 2023, a public law judge issued a proposed order to approve the STRIDE 3 plan, subject to a reduced number of replacement projects equal to a reduction to the five-year budget by at least one third. On November 13, 2023, Washington Gas notified the PSC of MD that it accepts the order. Two other parties (MD OPC and Sierra Club) appealed, with Sierra Club arguing for a greater reduction. On December 13, 2023, the PSC of MD affirmed the public law judge's proposed order in part, and directed Washington Gas to negotiate the terms of a notice to be sent to impacted customers. On January 10, 2024, the PSC of MD issued a memorandum explaining its December 13, 2023 decision. On February 9, 2024, the MD OPC filed a motion

for rehearing with the PSC of MD. Washington Gas filed a response on February 22, 2024 and a PSC of MD decision for rehearing is pending.

Effective January 1, 2024, the PSC of MD approved Washington Gas' three-year plan modifying and expanding the existing portfolio of programs for residential, commercial, industrial, and low-income customers with a total three-year budget of approximately US\$64 million. The approved EmPOWER Plan also includes a new Demand Response program for eligible residential customers and a pilot to test and monitor Energy Management Systems for commercial buildings with centralized boiler heating systems.

In connection with the WGL Acquisition, AltaGas made certain merger commitments including causing the development of 5 MW of either electric grid energy storage or tier one renewable resources in Maryland within five years of the WGL Acquisition. Washington Gas agreed with Maryland Staff to provide a semi-annual update starting on February 1, 2024, informing the PSC of MD about progress of completing that merger condition.

### ***Virginia Jurisdiction***

On June 29, 2022, Washington Gas filed an application for authority to increase rates in the Commonwealth of Virginia. The requested rates are designed to collect an incremental US\$48 million in total annual revenues requesting a 10.75 percent return on equity. In addition to the incremental revenues requested, the base rate increase also includes the transfer of US\$39 million in revenues currently collected in the form of a surcharge relating to Washington Gas' SAVE program. Washington Gas implemented the proposed rates (on an interim basis subject to refund) on the first billing cycle date for December 2022, which was 150 days after its application was filed, as permitted by Virginia law. On April 23, 2023, Washington Gas, SCC of VA staff and the Office of the Attorney General filed a proposed stipulation for a settlement that includes a revenue increase of US\$73 million and return on equity of 9.65 percent. On July 17, 2023, the Hearing Examiner report was issued and recommended the SCC of VA approve the proposed stipulation with certain recommendations. On August 29, 2023, the SCC of VA adopted the Hearing Examiner's report, approving approximately US\$41 million of incremental base rates plus approximately US\$32 million of SAVE surcharges for a total rate increase of approximately US\$73 million. Amounts refundable to customers were paid with interest by December 15, 2023, per the extension granted by the SCC of VA.

On December 4, 2023, Washington Gas filed an application with the SCC of VA seeking approval for a biogas supply investment plan and rate adjustment clause. Washington Gas seeks approval to purchase, own, operate, and maintain an eight-mile pipeline, associated interconnection facilities and other necessary equipment to transport RNG from a biogas production facility located at the Prince William County Landfill. Washington Gas also proposes to purchase a portion of the facilities output, a subset of which will be accompanied by marketable environmental attributes. Washington Gas is seeking recovery of the project costs and RNG costs through a RNG rider. Evidentiary hearing is set for March 19, 2024 and a decision is expected around early June 2024.

### **Hampshire Gas**

Hampshire owns underground natural gas storage facilities, including pipeline delivery facilities located in and around Hampshire County, West Virginia, and operates these facilities to serve Washington Gas. Hampshire is regulated by the FERC. Washington Gas purchases all of the storage services of Hampshire, and includes the cost of the services in the commodity cost of its regulated energy bills to customers. Hampshire operates under a "pass-through" cost-of-service based tariff approved by FERC.

## SEMCO Energy

SEMCO Energy's head office is located in Port Huron, Michigan. SEMCO Energy's primary business is a gas utility business. It operates regulated natural gas transmission and distribution divisions in Michigan, doing business as SEMCO. The gas utility business accounts for approximately 99 percent of SEMCO Energy's 2023 consolidated revenues. The gas utility business purchases, transports, distributes, stores and sells natural gas and related gas distribution services to residential and C&I customers and is SEMCO Energy's largest business segment.

On March 1, 2023, AltaGas closed the Alaska Utilities Disposition for consideration of approximately US\$800 million (approximately CAD\$1.1 billion) prior to closing adjustments.

## SEMCO

In Michigan, SEMCO distributes natural gas to approximately 320,000 regulated customers located in both southern Michigan and Michigan's Upper Peninsula, approximately 92 percent of which are residential. The remaining customers include power plants, food production facilities, furniture manufacturers, and other industrial customers.

The average number of customers at SEMCO has increased by an average of approximately 1 percent annually during the past three years, with an increase of approximately 1 percent in 2023. While there may occasionally be variations in this pattern, average per customer annual gas consumption in Michigan over the longer-term has been gradually decreasing because of, among other things, the availability of utility programs and resources for customers to reduce consumption through: (1) investing in high-efficiency equipment and appliances; (2) optimizing home and building energy use; and (3) becoming more conscious of high energy usage and making changes to habits and routines.

SEMCO pursues opportunities to develop service areas that are not currently served with natural gas. Expansion opportunities that currently exist represent relatively minor asset growth, but SEMCO remains committed to its strategy of pursuing expansion projects that meet management's target return on investment.

## Operations

The SEMCO natural gas transmission and delivery system in Michigan includes approximately 197 miles of gas transmission pipelines and 6,619 miles of gas distribution mains. The pipelines and mains are located throughout the southern half of Michigan's Lower Peninsula (including in and around the cities of Albion, Battle Creek, Holland, Niles, Port Huron, and Three Rivers) and also in the central, eastern, and western areas of Michigan's Upper Peninsula.

SEMCO has access to natural gas supplies throughout the U.S. and Canada via interstate and intrastate pipelines in and near Michigan. To provide gas to SEMCO sales customers, SEMCO has negotiated standard terms and conditions for the purchase of natural gas under the NAESB form of agreement with a variety of suppliers.

The following table sets out, by customer category, SEMCO's deliveries:

	2023	2022
<b>Deliveries: (MDth)</b>		
Residential	23,592	27,030
Commercial	14,465	16,462
Transport	19,028	20,460
Gas Customer Choice <sup>(1)</sup>	2,495	2,937
<b>Total deliveries</b>	<b>59,580</b>	<b>66,889</b>

	2023	2022
<b>Customers at Year End <sup>(2)</sup>:</b>		
Residential	275,632	274,989
Commercial	25,179	25,302
Transport	278	265
Gas Customer Choice <sup>(1)</sup>	18,929	19,397
<b>Total customers</b>	<b>320,018</b>	<b>319,953</b>

(1) In Michigan, the MPSC has a program known as the Gas Customer Choice Program, under which gas sales customers may choose to purchase natural gas from third-party suppliers, while SEMCO continues to charge these customers applicable distribution charges and customer fees, plus a balancing fee.

(2) Excludes customers from SEMCO's non-regulated business.

### **Seasonality**

The natural gas distribution business in Michigan is seasonal, as the majority of natural gas demand occurs during the winter heating season that extends from November to March. Accordingly, annualized individual quarterly revenues and earnings are not indicative of annual results.

Forecasted volumes for SEMCO are set based on the 15-year rolling average Degree Days expected for the period. Temperature fluctuations impact the operating results of SEMCO.

### **Recent Material Regulatory Developments and Approvals**

SEMCO is required by Michigan law (Public Acts of 2008 Act No. 295, amended by Public Acts of 2016 Act No. 342) to establish and maintain an EWRP for its customers and to implement and fund various energy efficiency and conservation matters. The costs of the EWRP are recovered through surcharges imposed on all customers of SEMCO. EWRP plans and reconciliations are subject to review and approval by the MPSC. SEMCO also has the ability to earn a performance incentive if certain EWRP goals and objectives are met annually. On May 1, 2023, SEMCO submitted its 2022 EWRP reconciliation filing which demonstrated it achieved the goals and parameters established in the 2022 EWRP and requested that it receive a performance incentive of approximately US\$3 million, which the MPSC approved on August 30, 2023. On June 30, 2023, SEMCO submitted its 2024-2025 EWRP seeking approval to spend approximately US\$35 million on energy waste reduction over 2024 and 2025. SEMCO reached an in-principle settlement agreement with the MPSC staff and the Michigan Department of Attorney General. The MPSC formally approved the settlement agreement on December 21, 2023.

### **Retail Energy Marketing**

AltaGas' retail energy marketing business consists of the operations of WGL Energy Services, which sells natural gas and electricity directly to residential, commercial, and industrial customers located in Maryland, Virginia, Delaware, Pennsylvania, Ohio, and the District of Columbia.

WGL Energy Services has a secured supply arrangement with Shell Energy North America (US), L.P. ("Shell Energy"). Under this arrangement, WGL Energy Services has the ability to purchase the majority of its power, natural gas, and

related products from Shell Energy in a structure that reduces WGL Energy Services' cash flow risk from collateral posting requirements. While Shell Energy is intended to be the majority provider of natural gas and electricity, WGL Energy Services retains the right to purchase supply from other providers. The supply arrangement with Shell Energy expires in March 2026.

#### Natural Gas

As of December 31, 2023, WGL Energy Services served approximately 79,680 residential, commercial and industrial natural gas customers located in Maryland, Virginia, Delaware, Pennsylvania, and the District of Columbia. WGL Energy Services is subject to regulation by the public service regulatory commission of the jurisdictions in which it is authorized as a competitive service provider. WGL Energy Services contracts for storage and pipeline capacity to meet its customers' needs primarily through transportation releases and storage services allocated from the utility companies in the various service territories through several interstate natural gas pipelines. To supplement WGL Energy Services' natural gas supplies during periods of high customer demand, WGL Energy Services maintains gas storage inventory in storage facilities that are assigned by natural gas utilities such as Washington Gas. This storage inventory enables WGL Energy Services to meet daily and monthly fluctuations in demand and to minimize the effect of market price volatility.

#### Electricity

As of December 31, 2023, WGL Energy Services served approximately 87,598 residential, commercial, and industrial electricity customer accounts located in Maryland, Delaware, Pennsylvania, Ohio, and the District of Columbia. WGL Energy Services does not own or operate any electric generation, transmission, or distribution assets.

#### **Competition**

WGL Energy Services competes with wholesale energy suppliers, regulated natural gas and electric utilities, and other third-party marketers to sell natural gas and electricity to customers. Marketers of natural gas and electric supply compete largely on price; therefore, volumes are relatively high compared to margins.

Operations can be positively or negatively affected by significant volatility in the wholesale price of natural gas and electricity. Accordingly, risk management policies and procedures are designed to minimize the risk that purchase commitments and the related sales commitments do not closely match. Additionally, WGL Energy Services has optimization opportunities that arise from the price volatility of natural gas and renewable energy credits.

To provide competitive pricing to its retail customers and in adherence to its risk management policies and procedures, WGL Energy Services manages its contract portfolios by attempting to closely match the commitments for deliveries from suppliers with requirements to serve sales customers. WGL Energy Services' residential and small commercial electric customer growth opportunities are significantly affected by the price for SOS offered by electric utilities. These rates are periodically reset for each customer class based on the regulatory requirements in each jurisdiction. Customer growth opportunities either expand or contract due to the relationship of these SOS rates to current market prices.

#### **Environmental Considerations Impacting the Utilities Business**

##### Washington Gas

Washington Gas is subject to federal, state, and local laws and regulations related to environmental matters. These laws and regulations may require sustained expenditures over time to control environmental effects. The cost of compliance associated with environmental laws and regulation can be significant and is subject to change. Almost all environmental liabilities associated with Washington Gas operations are costs expected to be incurred to remediate sites where Washington Gas or a predecessor affiliate operated MGPs or gas holder sites. Estimates of liabilities for environmental

response costs are difficult to determine with precision because of the various and variable factors that can affect eventual remediation costs for a given site. These factors include, but are not limited to, the following:

- the complexity of the site;
- changes in environmental laws and regulations at the federal, state, and local levels;
- the number of regulatory agencies or other parties involved;
- new technology that renders previous technology obsolete or experience with existing technology that proves ineffective;
- the level of remediation required; and
- variations between the estimated and actual time required to remediate an environmentally contaminated site.

Washington Gas has identified up to ten sites where it or its predecessors may have operated MGPs. Washington Gas last used any such plant in 1984. In connection with these operations, Washington Gas is aware that coal tar and certain other by-products of the gas manufacturing process are present at or near some former sites and may be present at others.

#### East Station

Washington Gas is currently remediating its East Station property located in Washington, D.C., which is adjacent to the Anacostia River, under a 2012 Consent Decree with the District of Columbia and federal government. Remedial measures include ground water pump and treat, tar recovery, soil encapsulation, and other treatment. The Draft Remedial Investigation Report was submitted to the NPS and the DOEE on June 12, 2020. Additional remediation may be required at this property.

At another adjoining property known as the "Eastern Power Boat Club Property", located to the east of the property owned by the District of Columbia, Washington Gas agreed to perform a site investigation and report the findings pursuant to oversight by the DOEE. The property was subject to a July 12, 2019 Administrative Order from the DOEE. That Administrative Order was withdrawn, and Washington Gas entered into a negotiated Administrative Order on Consent with the DOEE that was effective on March 11, 2020. Under the terms of the Administrative Order on Consent, Washington Gas submitted a Remedial Investigative Report on February 26, 2021. On March 11, 2021, Washington Gas received an Administrative Order related to the alleged presence of sheens in the Anacostia River. Washington Gas filed an appeal of the Administrative Order with the District of Columbia Office of Administrative Hearings on March 26, 2021. The appeal is pending.

#### Anacostia River Sediment Project

Washington Gas may be responsible for environmental cleanup and government costs associated with the ARSP. In February 2016, Washington Gas received a letter from the DOEE and NPS regarding the ARSP, indicating that the District of Columbia is conducting a separate remedial investigation and feasibility study of the Anacostia River to determine if and what cleanup measures may be required and to prepare a natural resource damage assessment. Subsequently, the DOEE issued an Interim ROD for remediation of "Early Action Areas" in the Anacostia River. Although the Interim ROD identifies East Station as one of fifteen potential environmental cleanup sites, the DOEE is proposing to continue the remediation of East Station under Washington Gas' existing Consent Decree rather than as part of the ARSP. On June 14, 2021, Washington Gas received letters from the DOEE and NPS notifying the Company that it may be responsible for environmental cleanup and government costs associated with the ARSP. On November 12, 2021, Washington Gas was notified by DOEE, the U.S. Department of Interior, and the National Oceanic and Atmospheric Administration that those agencies, as trustees, will perform a Natural Resource Damage Assessment of the Anacostia River and that Washington Gas was identified as a potentially responsible party. Washington Gas is not able to estimate the total amount of potential damages or timing associated with the District of Columbia's environmental investigation on the Anacostia River at this

time. While an allocation method has not been established, Washington Gas has accrued an amount based on a potential range of estimates for its share of the feasibility study costs.

#### Chillum

On May 27, 2021, Washington Gas submitted an application to the VCP for a former gas holder site located in Chillum, Maryland. Based upon the VCP application, Washington Gas has accrued an amount for the Chillum site based on the potential costs of a range of remedial options.

#### West Station

On September 8, 2023, Washington Gas received a Directive Letter from DOEE related to a MGP that was formerly owned by Washington Gas known as the “West Station Gas Works.” The Directive Letter requests certain information and a site investigation. The Company is not able to estimate the total amount of potential costs or timing associated with a site investigation at this time. Washington Gas has accrued an amount for estimated information request response costs based on a potential range of estimates.

Regulatory orders issued by the PSC of MD allow Washington Gas to recover the costs associated with the sites applicable to Maryland over the period ending in 2035. Rate orders issued by the PSC of DC allow Washington Gas a three-year recovery of prudently incurred environmental response costs and allow Washington Gas to defer additional costs incurred between rate cases. Regulatory orders from the SCC of VA have generally allowed the recovery of prudent environmental remediation costs to the extent they were included in the underlying financial data supporting an application for rate change.

If revisions to applicable environmental laws or regulations require further investigation and remediation to be performed at the sites in the future, Washington Gas could incur a material liability. This liability would be offset by a corresponding regulatory asset. To the extent that any costs are not fully recoverable from customers through regulatory proceedings or from insurance or other potentially responsible persons in any of Washington Gas' jurisdictions, these costs would reduce its earnings and results of operations.

#### Climate Regulation

In certain jurisdictions where Washington Gas operates, legislation and other forms of regulation driven by climate goals or other policies intended to reduce carbon or decarbonize — including policy-driven electrification, renewable fuel requirements, building code revisions that reduce or eliminate natural gas in residential or commercial buildings, building performance standards that eliminate natural gas, efficiency standards or other measures — may be, or have been, enacted at the federal, state or local level. For example, D.C. Act 24-528 requires the Mayor to issue final regulations by December 31, 2026 that require all new construction or substantial improvements of commercial buildings (with limited exceptions) to be constructed to a net-zero-energy standard, which is defined to prohibit on-site fuel combustion. In Montgomery County, Maryland, Bill 13-22 will require regulations that establish all-electric building standards for all new construction (with limited exceptions) by December 31, 2026.

This current or future legislation or regulation may impose additional requirements, restrictions, or costs on Washington Gas' operations or may adversely impact customer growth or usage or may impact Washington Gas' ability to recover costs and maintain reasonable rates. Additionally, current or pending environmental laws and regulations could restrict or impact AltaGas' business operations, financial conditions, and operating expenses (which may or may not be recoverable in customer rates) by providing a cost or other competitive advantage to energy sources other than natural gas, reducing demand for natural gas service and/or the amount of potential new customers, passing on additional costs or restrictions to end users of natural gas, negatively impacting the price of natural gas, increasing the likelihood of litigation, requiring



new infrastructure and technology development and implementation, and negatively impacting the overall public perception of AltaGas' services or products that negatively diminishes the value of its brand.

## SEMCO

SEMCO had completed its investigation and remediation at the two MGP sites it was responsible for and has received NFA letters from the Michigan Department of Environment, Great Lakes, and Energy for both sites. SEMCO will continue to monitor these sites in the future as required by the NFA letters.

In accordance with an MPSC accounting order, SEMCO's environmental investigation and remediation costs associated with these MGP sites are deferred and amortized over ten years. Rate recognition of the related amortization expense does not begin until the costs are subject to review by the MPSC in a base rate case. To the extent that any costs are not fully recoverable from customers through regulatory proceedings or from insurance or other potentially responsible persons, these costs would reduce SEMCO's earnings and results of operations.

As a result of the NFA letters received to date, SEMCO believes that the likelihood of any further liability at either of these sites is remote. However, if applicable environmental laws change that require further investigation and remediation to be performed at the sites in the future, SEMCO could incur a material liability. This liability would be offset by a corresponding regulatory asset.

Environmental, health, and safety regulations may also require SEMCO to install pollution control equipment, modify its operations, or perform other corrective actions at its facilities.

## **U.S. Federal Air and GHG Regulations**

### Greenhouse Gas Reporting Program

The U.S. GHGRP requires reporting of GHG data and other relevant information from large GHG emission sources, fuel, and industrial gas suppliers, and CO<sub>2</sub> injection sites in the United States. A total of 41 categories of reporters are covered by the GHGRP. Facilities determine whether they are required to report based on the types of industrial operations located at the facility, their emission levels, or other factors. Facilities are generally required to submit annual reports under Part 98 of the GHGRP if:

- GHG emissions from covered sources exceed 25,000 metric tons CO<sub>2</sub>e per year;
- Supply of certain products would result in over 25,000 metric tons CO<sub>2</sub>e of GHG emissions if those products were released, combusted, or oxidized; or
- The facility receives 25,000 metric tons or more of CO<sub>2</sub> for underground injection.

All of AltaGas' operating facilities and utilities located in the U.S. operate under and comply with the requirements set forth by the GHGRP.

For further discussion of the U.S. federal and state air emission regulations, please see "Business of the Corporation – Corporate/Other Segment – Environmental Considerations Impacting the Corporate/Other Segment".

## MIDSTREAM BUSINESS

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AltaGas' Midstream business contributed revenue of \$8.1 billion for the year ended December 31, 2023 (2022 - \$9.0 billion), representing approximately 63 percent (2022 – 64 percent) of AltaGas' total revenue before the Corporate/Other segment and intersegment eliminations.

### Midstream Business

AltaGas' Midstream segment is a leading North American platform that connects customers and markets. From wellhead to tidewater, the Company is focused on providing its customers with safe and reliable service and connectivity that facilitates the best outcomes for their businesses. This includes global market access for North American LPGs, which provides North American producers and aggregators with attractive netbacks for propane and butane while delivering diversity of supply and supporting stronger energy security in Asia to AltaGas' downstream customers.

Throughout AltaGas' Midstream operations, the Company is playing a vital role within the larger energy ecosystem that keeps the global economy moving forward in a safe, reliable, and affordable manner.

AltaGas' Midstream platform is heavily focused on the Montney and Deep Basin resource plays and centers around global exports, which is where the Company believes the market is headed for Canadian resource development over the long-term. AltaGas also operates a broader set of midstream infrastructure assets across the WCSB and select regions in the U.S., which are all focused on connecting customers and markets in the most efficient manner possible.

There are three core pillars to AltaGas' Midstream platform that are integral to each other and facilitate the Company's wellhead to tidewater value chain. These include:

- **Global Exports**, which includes AltaGas' two operational LPG export terminals where the Company has capacity to export up to 150,000 Bbl/d of propane and butane to key markets in Asia;
- **Natural Gas Gathering, Processing and Extraction**, which includes 1.2 Bcf/d of extraction processing capacity and approximately 1.2 Bcf/d of raw field gas processing capacity, which is heavily focused on the Montney and Deep Basin; and
- **Fractionation and Liquids Handling**, which includes 85 MBbl/d of fractionation capacity and a sizable liquids handling footprint.

The Midstream segment also consists of natural gas and NGL marketing business, domestic logistics, trucking and rail terminals, and approximately 3.2 million barrels of liquid storage capability through a network of underground salt caverns through the Company's Strathcona Storage Joint Venture with ATCO Energy Solutions Ltd., 15 Bcf of natural gas storage through the recently acquired Dimsdale natural gas storage facility, as well as AltaGas' 10 percent interest in MVP.

### Global Exports

AltaGas' global export assets are focused on providing North American producers global market access and incremental value for NGLs. Global export assets extend AltaGas' integrated value chain and attract additional volumes to the AltaGas system, supporting future growth of the overall Midstream infrastructure platform with current export capacity of up to 150,000 Bbls/d to Asian markets.

In April 2023, AltaGas entered into a seven-year time charter agreement with two one-year optional extensions for a new 545 MBbl dual-fuel VLGC with delivery expected in the first half of 2026. In December 2023, AltaGas accepted delivery of another VLGC under a seven-year time charter previously executed in 2021. The delivery of a third VLGC under a similar

seven-year time charter also previously executed in 2021 as well as a fourth VLGC under a two-year time charter are both expected in the first quarter of 2024.

### RIPET

On October 16, 2015, AltaGas entered into a project agreement with RTI (now Trigon) for RIPET, with construction commencing in April 2017. In May 2017, AltaGas entered into a joint venture agreement with Vopak pursuant to which Vopak acquired a 30 percent interest in RIPET. The commercial operations of RIPET commenced in May 2019, with the first propane shipment departing from the terminal to Asia.

Based on production at AltaGas' Midstream facilities and commercial contracts executed or under negotiation, RIPET ended the year with physical throughput of approximately 56,179 Bbls/d in December of 2023, with the ability to increase throughput to upwards of 80,000 Bbls/d.

The terminal leverages CN's existing railway network and the deepest harbor in North America to offer Canada's natural gas producers direct access to international markets and a 15-day shipping advantage versus the U.S. Gulf Coast. With RIPET being the closest North American LPG terminal to Asia, it allows Canadian natural gas and propane producers and aggregators to diversify their market access to Asia, a premium market for propane. RIPET is capable of storing 600,000 Bbls of propane. AltaGas expects to increase throughput from RIPET as it builds on the operational capabilities and global counterparty networks for RIPET.

### REEF

REEF is a proposed large-scale LPG and bulk liquids export terminal with supporting marine infrastructure that is planned to be constructed on Ridley Island, British Columbia. The project is being developed by AltaGas and Vopak Development Canada Holdings Inc. and is planned to be located adjacent to the partners' existing RIPET facility.

Should REEF reach a positive FID, the project is planned to be developed and brought online in phases. This approach will provide the most capital efficient build out of the project, match energy export supply with throughput capacity, mitigate the challenges that a large development project can have on the local community, and provide local construction and employment opportunities that would extend over longer time horizons.

AltaGas will hold a 50 percent working interest in REEF and will be the project operator with Vopak holding the other 50 percent interest. If a positive FID is made, Phase 1 is anticipated to begin construction in 2024 and will include construction of a new deep water marine jetty with significant capacity for potential future phases. During the fourth quarter of 2023, site clearing work including logging, clearing, and draining activities commenced, that will further solidify the project's readiness to reaching FID, which is expected during the second quarter of 2024.

### Ferndale LPG Export Facility

Located approximately 100 miles north of Seattle, the Ferndale terminal represents a strategic outlet point for North American LPG volumes. Like RIPET, it is competitively situated to serve the high-demand Far East market with shorter average shipping times and has a similar competitive arbitrage as RIPET compared to the U.S. Gulf Coast.

Terminal demand is supported through various long-term purchase agreements with Canadian and U.S. suppliers, primarily from key producing regions, processing facilities and refineries in parts of Western Canada and the Northern U.S., including the Bakken in North Dakota. AltaGas also maintains service agreements with numerous Tier 1 rail providers in order to leverage existing railway networks to take advantage of competitively priced product across North America. The terminal is also pipeline connected to two regional refineries, providing additional supply, sales and fee-for-

service opportunities for the terminal. The terminal is capable of handling upwards of 70,000 Bbls/d of throughput capability, with 800,000 Bbls of on-site storage capacity and rail siding capacity for up to 40 railcars.

### Natural Gas Gathering, Processing and Extraction

Midstream processing activities are comprised of gathering systems that move natural gas on behalf of producers from the wellhead to AltaGas plants where impurities and certain hydrocarbon components are removed, and the gas is compressed to meet the operating specifications of downstream pipeline systems. AltaGas' Midstream processing facilities serve customers primarily in the WCSB that deliver natural gas into downstream pipeline systems and can connect producers to the global export markets for LPG. AltaGas has a total net licensed processing capacity of approximately 2.4 Bcf/d, of which approximately 17 percent is capable of processing sour gas. All of AltaGas' processing facilities are capable of extracting NGLs. The main drivers of AltaGas' processing activities are throughput, inlet composition, gathering and processing fees, frac spreads, and operating costs, with several facilities having the benefit of take-or-pay contracts. Throughput is impacted by new well tie-ins, re-activations, re-completions, well optimizations performed by producers, natural production declines in areas served by AltaGas' processing facilities, and gas available on the main lines.

AltaGas' significant processing facilities are as follows:

2023 Licensed Capacity (Net)				
Facility	Location	Interest (%)	Operated / Non-Operated	Licensed Capacity Gas Processing - Net (Mmcfd)
Townsend	North of Fort St. John, BC	100 %	Operated	550
Pipestone Phase I	Grand Prairie, AB	100 %	Operated	110
Gordondale	Bonanza, AB	100 %	Operated	150
Blair Creek	North of Fort St. John, BC	100 %	Operated	120
JEEP	Joffre, AB	100 %	Operated	250
EEEEP	Edmonton, AB	100 %	Operated	390
Empress Pembina ("PEEP")	Empress, AB	11 %	Non-Operated	135
Harmattan	Sundre, AB	100 %	Operated	490
Younger	Taylor, BC	28 %	Non-Operated	213
Total				2,408

#### Townsend Complex

The Townsend complex, which is wholly owned by AltaGas, is a 550 Mmcfd gas processing facility located approximately 100 km north of Fort St. John and 20 km southeast of AltaGas' Blair Creek facility. The majority of the processing capacity is contracted with Montney producers in the area under long-term take-or-pay agreements. In addition, the Townsend complex is able to provide NGL handling, treatment, and storage services to producers. Refer to the "Fractionation and Liquids Handling" section below.

A 25 km gas gathering line connects the Blair Creek field gathering area to the Townsend complex.

In August 2018, AltaGas entered into definitive agreements with Kelt to provide an energy infrastructure solution for the liquids-rich Inga Montney development located in British Columbia. In the second quarter of 2020, Townsend 2B and a gas gathering pipeline that connects upstream fields to AltaGas facilities were commissioned, which added 198 Mmcfd C3+ deep cut gas processing capacity at the Townsend Complex. The expanded facility provided Kelt with firm processing of 75 Mmcfd of raw gas under an initial 10 year take-or-pay agreement. In the third quarter of 2020, ConocoPhillips acquired oil and gas assets in the Inga/Fireweed/Stoddart division in the Montney area from Kelt. All operating agreements of AltaGas remain in effect with ConocoPhillips since the acquisition.

### Pipestone

AltaGas owns 100 percent of Pipestone Phase I which is a high-quality operational sour deep-cut natural gas facility with 110 Mmcf/d of processing capacity and 20,000 Bbls/d of liquids handling capacity located in the heart of the Alberta Montney (see the "Fractionation and Liquids handling" section below). The facility is currently 100 percent contracted with approximately 85 percent of the volumes coming from long-term take-or-pay contracts with credit worthy customers. The facility includes 67km of natural gas gathering pipelines that are tied into key production regions and provides strategic egress connections to the NGTL and the Alliance pipeline systems. The facility also includes the Pipestone condensate truck-in/truck-out terminal for liquids handling and value maximization.

AltaGas also owns 100 percent of Pipestone Phase II for which a positive FID has been made. Pipestone Phase II is a fully permitted, shovel-ready expansion project that will provide an additional 100 MMcf/d of sour deep-cut natural gas processing capacity and an additional 20,000 Bbls/d of liquids handling capabilities. Pipestone Phase II is 100 percent contracted under long-term take-or-pay agreements with a combination of marquee independent and investment grade producers. All Pipestone Phase II customers who are existing Pipestone Phase I customers have also agreed to multi-year contract extensions, further improving the long-term commercial profile of the Pipestone Assets. The project will be adjacent to Pipestone Phase I, which AltaGas acquired in December 2023, and will be constructed on a fixed price turnkey basis for the majority of the capital costs. The project will begin construction in 2024 and when complete, will deliver critical gas processing and liquids handling capacity in the Pipestone region of Alberta, which is one of the fastest growing liquids-rich natural gas developments in Canada.

### Gordondale

AltaGas owns 100 percent of the Gordondale facility which has licensed capacity of 150 Mmcf/d for processing sour natural gas. AltaGas operates the facility which is located in the Gordondale area of the Montney reserve area approximately 100 km northwest of Grande Prairie, Alberta. The Gordondale facility processes gas gathered from Birchcliff's Gordondale Montney development under a long-term take-or-pay contract. The plant is equipped with liquids extraction facilities to capture the NGL value for the producer. The plant also has peaking power plant generators which serve as emergency back-up generation for the plant as well as power supply to the grid when demand is high or supply is low.

### Blair Creek

AltaGas owns 100 percent of the Blair Creek facility which has licensed capacity of 120 Mmcf/d of natural gas. AltaGas operates the facility which is located approximately 140 km northwest of Fort St. John, British Columbia. The facility processes gas gathered from Montney producers in the area. The plant is equipped with liquids extraction facilities to capture the NGL value for the producer.

### JEEP

AltaGas owns 100 percent of JEEP which has processing capacity of 250 Mmcf/d of natural gas and is capable of producing up to 10,400 Bbls/d of ethane and other NGLs.

The plant is adjacent to Nova Chemicals' Joffre petrochemical complex and recovers ethane and other NGLs from the fuel gas used at the complex and other nearby facilities. Ethane from JEEP is contracted under a long-term cost-of-service contract that expired on December 31, 2023. Ethane sales contract negotiations are expected to continue into 2024. AltaGas delivers its NGL production to the Harmattan fractionation plant for further processing. The resulting spec products are sold into markets throughout North America to maximize plant gate netbacks.

## EEEE

AltaGas owns 100 percent of EEEP. EEEP is directly connected to the Alberta Ethane Gathering System and to Plains Midstream Canada's Co-Ed NGL pipeline. The plant has a licensed gross inlet capacity of 390 Mmcf/d of natural gas and gross production capacity of 30,500 Bbls/d of ethane and other NGLs.

The processed gas from the facility supplies end-use markets in the city of Edmonton, Alberta. Almost all of EEEP ethane production capacity is currently sold to ethane buyers under long-term fee-for-service contracts. The NGL production is delivered to a Fort Saskatchewan fractionator for further processing. AltaGas takes the resulting spec products in-kind and sells to North American and global markets, through RIPET, to maximize plant gate netbacks.

Gas is supplied to EEEP under a gas supply agreement with NGTL which includes the right for AltaGas to extract liquids from all gas processed at EEEP.

## Harmattan

AltaGas owns a 100 percent interest in Harmattan located 100 km north of Calgary, Alberta. Harmattan has natural gas processing capacity of 490 Mmcf/d consisting of sour gas treating, co-stream processing, and NGL extraction. In addition, Harmattan has fractionation and terminalling facilities (see the "Fractionation and Liquids Handling" section below). Harmattan's raw natural gas supply is based on producer activity in the west-central region of Alberta. Harmattan is well-positioned as the high-volume, low-cost processing facility in its service area.

At Harmattan, natural gas processing services are provided to approximately 70 producers under contracts with a variety of commercial arrangements and terms. Approximately 17 percent of the natural gas volume processed at Harmattan is done under the terms of the Rep Agreements which have life-of-reserves dedications. The balance of the raw natural gas processed at Harmattan is processed under contracts with terms varying from one month to life-of-reserves. The majority of the contracts provide for fee escalation based on CPI.

The co-stream processing allows the extraction of NGLs from gas in the west leg of the NGTL system using unused capacity in the NGL recovery units at Harmattan. The co-stream processing has resulted in increased utilization at the plant, with the added benefit that the equipment installed for the co-stream process increases reliability and efficiency for both gas processing and co-streaming customers. AltaGas entered into a 250 Mmcf/d cost-of-service co-stream processing agreement with Nova Chemicals related to ethane and other NGL extraction at Harmattan in 2012 for an initial term of 20 years. AltaGas delivers all NGLs or co-stream gas products on a full cost-of-service basis to Nova Chemicals.

AltaGas has 45 MW of co-generation capacity in Alberta through three co-generation facilities, each of which can generate 15 MW of power. The co-generation facilities are located at AltaGas' Harmattan facility and have a heat recovery steam generator that is capable of producing all of the steam required to process gas at Harmattan from the waste heat in the exhaust gases from the turbine. Excess electricity from the co-generation units is delivered to the Alberta power market.

AltaGas is nearing the completion of the Harmattan Acid Gas Injection well, which is a project that will be capable of capturing up to 60,000 tonnes/year of carbon emissions at the Company's Harmattan gas plant. The project involves decommissioning Harmattan's existing sulfur plant, which significantly reduces the facility's operational complexity and extends the facility's turnaround cycle from 4 years to 5 years, which is expected to result in ongoing cost savings. The acid gas injection well was placed in service in January 2024.

Management identified environmental issues associated with the prior activities of Harmattan. An environmental allocation agreement is in place with the former operator that allocates the liability. This agreement significantly reduces soil and groundwater contamination liability to AltaGas. See "Risk Factors - Decommissioning, Abandonment, and Reclamation Costs" in this AIF.

## Younger

AltaGas owns a 28 percent interest in Younger processing and extraction assets and a 50 percent interest in Younger's fractionation and terminalling assets (see the "Fractionation and Liquids handling" section below). Younger has licensed capacity to process up to 750 Mmcfd of natural gas and AltaGas' share of such capacity is 213 Mmcfd. The remaining interest is held by Pembina, which has assumed plant operatorship. Younger processes natural gas transported on the West Coast transmission system and other regional transmission systems to recover NGLs. Natural gas supply to Younger is dependent on the amount of raw gas processed at the McMahon gas plant, which is based on the robust natural gas producing region of northeastern British Columbia.

## **Fractionation and Liquids Handling**

Fractionation production is a function of NGL mix volumes processed, liquids composition, recovery efficiency of the plants, and plant on-line time. Due to the integration and inter-connectivity of AltaGas' Midstream assets, the fractionation and liquids handling activities provide integral services to the other Midstream segments and customers by providing NGL products with access to North American and global markets through rail networks, pipelines, RIPET, and the Ferndale terminal.

AltaGas' liquids handling infrastructure consists of NGL pipelines, treating, storage, and truck and rail terminal infrastructure centered around AltaGas' key Midstream operating assets at RIPET, the Ferndale terminal, Harmattan, and in NEBC, the Townsend complex and the North Pine facility. In the NEBC area, a network of NGL pipelines connects upstream gas plant producers to the AltaGas North Pine facility. The NEBC NGL pipelines consist of three liquids egress lines, with the third line commissioned in the third quarter of 2020, connecting the Townsend complex to the truck terminal on the Alaska Highway (30 km) and AltaGas' North Pine facility (70 km). In addition, NGL and spec propane lines that connect the Townsend complex in the North to the Aitken Creek facilities through the 60 km Aitken Connector NGL pipeline, Canadian Natural Resources Limited's Nig plant through a lateral, and the Tourmaline Gundy facility in the West through a 15 km spec propane line were all commissioned in the first half of 2020. AltaGas' liquids handling infrastructure also consists of a 15,000 Bbls/d NGL treatment facility at the Townsend complex designed to process mercaptan rich NGL volumes delivered from the Townsend complex deep-cut plant and Aitken Connector pipeline.

AltaGas' significant fractionation facilities are as follows:

2023 Licensed Capacity (Net)					
Facility	Location	Interest (%)	Operated / Non-Operated	Licensed Capacity NGL Fractionation - Net (Bbls/d)	
Harmattan	Sundre, AB	100 %	Operated	35,000	
Younger	Taylor, BC	50 %	Non-Operated	9,750	
North Pine	Fort St. John, BC	100 %	Operated	20,000	
Pipestone Phase I	Grand Prairie, AB	100 %	Operated	20,000	
Total				84,750	

## Harmattan

Harmattan has NGL fractionation capacity of 35,000 Bbls/d, a 450 Bbls/d capacity frac oil processing facility, and a 200 tonnes/d capacity industrial grade CO<sub>2</sub> facility. Harmattan is the only deep-cut and full fractionation plant in its operating area. Fractionation services at Harmattan are provided under contracts with a variety of commercial arrangements and terms, typically fee-for-service revenues. Harmattan fractionation services include a truck terminal for NGL mix delivered from adjacent plants in the area, as well as a rail terminal at Didsbury with a loading capacity of approximately 10,000 Bbls/d.

## Younger

AltaGas owns a 50 percent interest in Younger's fractionation, storage, loading, treating and terminalling of NGL facility, with the remaining interest held by Pembina, which operates the plant. While Younger is the only straddle plant in its operating area, the Alliance pipeline competes for local natural gas supply. Pembina is responsible for sourcing AltaGas' gas supply and AltaGas markets its share of NGLs produced.

## North Pine Facility

The North Pine facility is the only custom fractionation plant in B.C., providing area producers with a lower cost, higher netback alternative for their NGLs than transporting and fractionating in Edmonton. Commissioning of the first train of the North Pine facility was completed in 2017. The first train of the North Pine facility is capable of processing up to 10,000 Bbls/d of NGL mix. The second train, commissioned in the first quarter of 2020, provides an additional 10,000 Bbls/d of NGL mix.

The North Pine facility is connected via the North Pine pipelines to the Townsend truck terminal which has a capacity of 10,000 Bbls/d and is contracted through long-term supply agreements with the producers at the Townsend complex. The North Pine facility is also connected to the Tourmaline Gundy facility, and has access to the CN rail network, allowing for the transportation of propane, butane, and condensate to North American markets and propane to global markets via RIPET.

## Pipestone

AltaGas owns 100 percent of Pipestone Phase I which includes 20,000 Bbls/d of liquids handling capacity located in the heart of the Alberta Montney.

## **Terminals and Storage Business**

AltaGas' Midstream segment also includes a terminals and storage business, which supports its marketing and distribution business by providing the ability to source, transport, process, store, and deliver products through strategically located fixed assets throughout North America. In addition, the business provides various terminalling services to third party customers through take-or-pay or fee-for-service agreements which provide earnings stability through volatile commodity price environments.

The terminals and storage business consists of strategically located crude oil, natural gas, and NGL assets which provide storage, blending, rail and truck logistical support and waterborne LPG export capabilities.

AltaGas' significant terminals are as follows:

2023 Licensed Capacity						
Facility	Location	Interest (%)	Operated / Non-Operated	Operational Capacity LPG/ NGL/Crude - Gross (Bbls/d)	Storage Capacity - Gross (Bbls)	
Griffith LPG Terminal	Griffith, IN	100 %	Operated	12,000	700,000	
Fort Sask. NGL Terminal	Fort Saskatchewan, AB	100 %	Operated	25,000	180,000	
Strathcona Storage JV	Fort Saskatchewan, AB	40 %	Non-Operated	—	3,215,500	
Crude Blending Terminals	Various	100 %	Operated	25,700	20,000	
<b>Total</b>				<b>62,700</b>	<b>4,115,500</b>	



#### Griffith LPG Terminal

Owned and operated by AltaGas, the Griffith LPG terminal directly supports domestic propane and butane marketing efforts. Equipped with inbound and outbound truck and rail infrastructure, the terminal is capable of handling approximately 12,000 Bbls/d, and can be easily expandable to 30,000 Bbls/d. Underground caverns provide 700,000 barrels of storage and rail siding capacity exists for up to 220 railcars. Storage services are provided on a fee for service basis including to pipeline connected refiners.

#### Fort Saskatchewan NGL Terminal

Owned and operated by AltaGas, this facility was built by Petrogas and provides multiproduct storage and handling support to the marketing business while also generating fee-for-service revenues through third party agreements.

Connected to a regional fractionation facility and to the Strathcona Storage Caverns through a 10 km AltaGas constructed and owned pipeline, the Fort Saskatchewan facility is equipped with truck and rail loading and offloading infrastructure, providing 25,000 Bbls/d of throughput capacity. The terminal has rail siding capacity for up to 265 railcars and on-site tank storage for 180,000 Bbls. The terminal is an important staging area for RIPET and Ferndale terminal destined product, providing key export exposure optionality to regional producers.

#### Strathcona Storage JV

The Strathcona Storage Joint Venture facility is a joint venture with ATCO Energy Solutions Ltd. which is located near Fort Saskatchewan, Alberta. AltaGas holds a 40 percent ownership interest in the facility. The facility is strategically positioned to help satisfy storage needs from increased liquids rich production from the Duvernay and Montney shale basins, while also supporting petrochemical requirements in the Edmonton area. The facility consists of five underground storage salt caverns in service, which have a combined storage capacity of 3,215,500 Bbls.

#### Crude Blending Terminals

Owned and operated by AltaGas, the crude blending terminals consist of five blending terminals located throughout Alberta and Southern Saskatchewan. These terminals blend heavier grade crude oil to meet pipeline specification requirements and are designed to operate at an average capacity of 25,700 Bbls/d. Feedstock is sourced through trucking infrastructure and pipeline connected batteries, with offloading capability through connections to regional pipelines.

#### Sarnia Storage and Crude Oil Terminal JV Agreement

The Sarnia storage and crude oil terminal is a joint venture agreement with Nova Chemicals, providing AltaGas with crude oil storage and crude-to-rail infrastructure accessibility. Situated in southern Ontario, this terminal provides the ability to service crude oil demand needs to eastern refiners and end users through regional rail networks and Enbridge pipeline infrastructure. The joint venture partner supplies and manages the terminal assets, while AltaGas manages the marketing and commercial agreements for the terminal. This terminal provides up to 2.1 million Bbls of crude oil and refined product storage capacity with outbound throughput supported by 10,000 Bbls/d of rail loading capacity. The terminal generates revenue through storage contracts and storage tank leases, rail loading, and term commitments for crude oil supply. The joint venture agreement expires in 2028 and can be renewed at the discretion of the parties. The right to access the terminal assets under the joint venture arrangement have been recorded as a lease by AltaGas.

AltaGas' significant storage facilities are as follows:

2023 Licensed Capacity				
Facility	Location	Interest (%)	Operated / Non-Operated	Storage Capacity - Gross (Bcf)
Sarnia Gas Storage	Sarnia, ON	50 %	Non-Operated	5.9
Dimsdale Natural Gas Storage	Grand Prairie, AB	100 %	Operated	15.0

#### Dimsdale Natural Gas Storage Facility

The Dimsdale natural gas storage facility is a premier operational natural gas storage facility located east of the Pipestone Phase I and Pipestone Phase II facilities. The facility has a current working gas capacity of 15 Bcf, which can be increased more than four-fold to 69 Bcf through the Dimsdale expansion project. The project is shovel-ready and has all the required regulatory approvals for construction and commissioning within 18 to 24 months. Connected to Alliance and NGTL pipeline systems, the storage facility provides customers with egress certainty and will be one of only three facilities able to serve the balancing needs of the Montney and Canadian LNG demand pulls mid-decade and will be the only integrated processing and storage facility in the Montney. The facility is located upstream of the James River bottleneck points.

#### Sarnia Natural Gas Storage Facility

AltaGas' natural gas storage assets also include a 50 percent ownership of the 5.9 Bcf Sarnia natural gas storage facility connected to the Dawn Hub in Eastern Canada.

#### Other

AltaGas maintains an assortment of ancillary owned and leased storage assets across North America to support marketing and distribution and terminal efforts. Locations include the Yahk, B.C. propane truck terminal, Scranton propane terminal, Guernsey and Edmonton leased crude tanks and various other strategic leased NGL storage at key hubs.

### ***Trucking and Wellsite Fluids***

#### Trucking Business

AltaGas' Midstream business includes three primary trucking entities, which provide transportation related services within the WCSB and the United States Pacific Northwest by hauling frac fluid, produced water, crude oil and NGLs between producers, terminals, customers and end users. Trucking operations are instrumental in connecting suppliers and customers to either the AltaGas infrastructure assets, third party terminals, or long-haul transportation to domestic wholesale markets.

In addition to first party volumes, the trucking business maintains various agreements with regional oil and gas production companies for hauling services from remote drilling locations. Agreements could include master service agreements, evergreen term contracts or spot loadings. Third party hauling rates are determined by receipt location, delivery point and length of haul.

#### Wellsite Fluids and Fuels

Enerchem is a Canadian corporation which focuses on the production of drilling and wellsite fluids, and consumer fuels. Through the fractionation of crude oil feedstock, Enerchem produces and distributes proprietary hydrocarbon fluids for drilling oil and gas wells to improve productivity and to resolve oilfield production challenges for downstream producers.

Enerchem operates two primary facilities located in Sundre and Slave Lake, Alberta, which are capable of processing over 1.5 million Bbls of finished products per year. These plants are supported by various ancillary storage and distribution facilities located across the WCSB providing over 150,000 Bbls of storage capacity, strategically placed within the vicinity of active drilling regions.

### Other Liquids Handling Services

To support LPG and NGL handling, AltaGas manages a rail logistics network consisting of more than 4,000 rail cars. AltaGas is active in identifying opportunities to buy and resell NGLs for producers and exchange, reallocate, or resell pipeline capacity and storage to earn a profit. Net revenues from these activities are derived from low risk opportunities based on transportation cost differentials between pipeline systems and differences in commodity prices from one period to another. Margins are earned by locking in buy and sell transactions in compliance with AltaGas' credit and commodity risk policies. AltaGas also provides energy procurement services for utility gas users and manages the third-party pipeline transportation requirements for many of its gas marketing customers.

AltaGas' marketing business is focused on the purchase, sale, exchange, and distribution of NGLs and crude oil, primarily in proximity to its strategically owned and leased asset base. By leveraging AltaGas' fully integrated infrastructure base and extensive logistical capabilities, the marketing team is able to source competitively priced supply at the key hubs and across various hydrocarbon basins in order to capture arbitrage opportunities derived through regional pricing differentials. Marketing efforts are driven by two primary focuses: 1) domestic NGL and crude oil wholesale, and 2) LPG waterborne exports. AltaGas supports its distribution efforts by maintaining an extensive leased rail fleet. Leases are on a full-service basis and are established on a staggered maturity schedule with multiple lessors to ensure railcar integrity and up-to-date DOT classification.

### Mountain Valley

AltaGas owns a 10 percent equity interest in Mountain Valley. The proposed FERC regulated interstate natural gas pipeline, which is being developed, constructed, and owned by Mountain Valley (a venture of EQT and other entities), is planned to transport approximately 2.0 Bcf/d of firm transmission capacity to markets in the Mid- and South Atlantic regions of the United States and has throughput expansion opportunities. and to extend 300 miles from Equitrans LP's system in Wetzel County, West Virginia to Transco's Station 165 in Pittsylvania County, Virginia.

MVP has obtained all necessary permits and full construction activities have recommenced, with a targeted in-service date for the second quarter of 2024. The total project costs are estimated to be US\$7.6 billion. AltaGas' exposure is contractually capped to the original estimated contributions of approximately US\$352 million, which was met as of December 31, 2021.

In April 2018, AltaGas entered into a separate agreement with EQM to acquire a 5 percent equity stake in the MVP Southgate Project, which is an interstate natural gas pipeline that will extend MVP by approximately 75 miles from southern Virginia into central North Carolina.

In December 2023, MVP announced it entered into precedent agreements with two counterparties to collectively provide 550,000 Dth per day of firm capacity commitments for 20-year terms with two potential five-year extensions. The precedent agreements contemplate a redesigned project, which would extend 31-miles from the terminus of MVP in Pittsylvania County, Virginia to planned new delivery points in Rockingham County, North Carolina using a 30-inch diameter pipe, substantially fewer water crossings, and would not require a new compressor station. MVP expects to finalize the redesigned project scope after it conducts an open season and executes any additional agreements for firm capacity. The redesigned MVP Southgate Project is expected to cost approximately US\$370 million, of which approximately US\$19 million will be AltaGas' portion. In the fourth quarter of 2021, AltaGas impaired its equity investment

in the MVP Southgate project to a carrying value of \$nil as a result of legal and regulatory challenges the project has encountered.

## Competition

As a leading provider of LPG services connecting producers to domestic and global markets, AltaGas has refined its strategy and realigned its assets to increase the utilization of its existing assets and attract future growth while facilitating the delivery of affordable and reliable sources of energy for today and tomorrow. AltaGas' unique integrated value chain from wellhead to tidewater offers customers egress solutions and higher netbacks as a result of access to higher value global energy markets, including Asia.

Through its integrated infrastructure value chain, AltaGas is able to connect North American producers from the wellhead to the global LPG markets via RIPET and the Ferndale terminal. With three VLGC time charters currently in use and the addition of one new VLGC commencing in the first half of 2026, AltaGas' integrated value proposition is a unique offering that is challenging to replicate. Regardless, ensuring consistent cost competitiveness and the highest netbacks is critical as AltaGas is competing for LPG supply from the WCSB. Currently, RIPET and the Ferndale terminal, at upwards of 150,000 Bbls/d of throughput capacity, account for approximately one quarter of the LPG demand in the WCSB. The expectation of continued North American natural gas development and the resulting LPG supply/demand imbalance in North America, combined with strong Asian demand, is expected to maintain a robust pricing differential between North America and Asia. AltaGas' structural and locational advantage through RIPET and the Ferndale terminal, as well as the advancement of REEF, will enhance producers' netbacks and be highly competitive with other North American LPG exports for LPG supply as AltaGas' global export operations continue to be optimized. To protect and enhance our competitive advantage, logistics optimization is one of AltaGas' top priorities.

On the upstream side of the value chain, AltaGas competes with large, sophisticated integrated upstream natural gas exploration and production entities, as well as other midstream entities operating in the WCSB for natural gas processing services. AltaGas' core natural gas processing facilities are strategically located in liquids rich basins and offer additional services such as extraction, LPG fractionation, liquids handling and rail loading. These facilities provide AltaGas' producers and other customers with access to lower cost and higher netback alternatives for their NGLs, the opportunity to market their LPGs regionally and most importantly, attracts supply to AltaGas' export terminals. In 2023, AltaGas processed an average of 1.5 Bcf/d, which is approximately 13 percent of volumes produced in the WCSB. The majority of WCSB processing capacity generally continues to be provided by the upstream natural gas exploration and production companies. With the ability to provide Western Canadian producers a fully integrated value chain, supported by liquids processing and handling and global export capabilities, AltaGas is well positioned to compete for incremental throughput for its existing processing facilities and attract future growth.

## Midstream Utilization

AltaGas strives for continued improvement, operational excellence, and maximum utilization of all facilities over which it has operational control and to consistently exceed WCSB average utilization rates. Volume additions at plants, which come from new well tie-ins and from re-activations, re-completions, and well optimizations performed by producers, are offset by natural production declines. Global export volumes are driven by production at AltaGas' Midstream facilities, LPG supply from the WCSB, and various long-term purchase agreements with Canadian and American suppliers.

## Global Exports

Average global exports utilization increased to 73 percent in 2023 from 69 percent in 2022, and throughput volumes increased to 106,071 Bbls/d during the year ended December 31, 2023, compared to 101,654 Bbls/d in 2022. There were 71 shipments and 1 partial shipment to Asia during the year ended December 31, 2023, compared to 68 shipments in the same period of 2022. Higher export volumes and shipments were primarily the result of increased offtake demand, higher available supply, and improved logistics.

## Gas Processing

Average processing facility utilization of core assets increased to 57 percent in 2023 from 55 percent in 2022 primarily due to higher processed volumes at the Townsend complex and at Harmattan.

## Fractionation

Average fractionation utilization decreased to 60 percent in 2023 from 65 percent in 2022 primarily due to the impact of the 2023 wildfires at the NEBC facilities, partially offset by additional liquids volumes from the NEBC facilities, higher volumes at Younger, and higher trucked-in volumes at Harmattan.

## ***Significant Operating Areas and Customers***

### Global Exports

As two of the only three LPG terminals operating on the west coast of North America and the only two able to ship with VLGCs and Large Gas Carriers, RIPET and the Ferndale terminal offer significantly reduced shipping times to the Asian LPG markets compared to the other North American LPG terminals that are not located on the west coast. Both terminals are connected to the key North American hubs with rail networks.

### Processing and Fractionation

Approximately 51 percent of AltaGas' processing volumes are processed through the Townsend complex, Blair Creek facility, Gordondale facility, and the Younger facility located in the liquids-rich Montney resource play in NEBC.

AltaGas has also fractionation capacity in NEBC through the North Pine facility and Younger facility. The North Pine facility is interconnected to the Townsend complex and is the only custom fractionation plant in British Columbia, providing area producers with a lower cost, higher netback alternative for their NGLs than fractionating in Edmonton.

The JEEP and EEEP facilities are strategically located and take advantage of the gas consumption by the petrochemical industry and the City of Edmonton. Harmattan is a significant service provider with a large capture area in west central Alberta. Many other facilities in the Harmattan area are currently underutilized, providing AltaGas with opportunities to consolidate and increase asset utilization and profitability.

Pipestone Phase I includes 67 km of natural gas gathering pipelines that are tied into key production regions and provides strategic egress connections to the NGTL and the Alliance pipeline systems.

### Terminals and Storage

The Fort Saskatchewan NGL terminal is strategically located in the Fort Saskatchewan petrochemical hub, near Edmonton. It is pipeline connected to a regional fractionator with long-term agreements to ship LPGs. The terminal is also pipeline connected to the Strathcona Storage Joint Venture which is located in the same area. The LPG caverns are supporting the supply and logistics capabilities required for the global export business.

The Dimsdale natural gas storage facility is strategically located north of the upstream James Rover constraints within the NGTL system and provides unconstrained access to the Montney gas volumes during periods of AECO volatility. It is also one of only three facilities able to serve the balancing needs of the Montney and Canadian LNG demand pulls mid-decade and will be the only integrated processing and storage facility in the Montney.

### ***Midstream Contractual Arrangements***

#### Global Exports

RIPET and Ferndale terminal annual capacity is currently managed through a combination of merchant supply agreements and tolling arrangements for both propane and butane. AltaGas' plans are to have an increasing amount of RIPET and Ferndale terminal's capacity underpinned by tolling arrangements with focus on creating an integrated value chain for AltaGas' customers and suppliers in the WCSB from the wellhead to the global export markets.

In 2024, AltaGas has in place agreements for the purchase of approximately 36 percent of the propane expected to be shipped from RIPET. Approximately 71 percent of RIPET propane volumes are exported under term and semi-term contracts, while 29 percent are under current year strip or spot contracts.

In 2024, AltaGas also has in place agreements for propane and butane offtake volumes for the purchase of approximately 67 percent of the product expected to be shipped from the Ferndale terminal. Approximately 90 percent of Ferndale terminal propane and butane volumes are exported under term and semi-term contracts, while 10 percent are under current year strip or spot contracts.

#### Processing and Fractionation

AltaGas gathers, processes, and fractionates natural gas and NGL under contracts with natural gas producers. There are approximately 219 active processing contracts with approximately 108 counterparties. These contracts, in general:

- Establish fees for the gathering and processing services offered by AltaGas;
- Establish operating costs flow through to the producers for a significant portion of the contracts;
- Define the producers' access rights to gathering and processing services;
- Establish minimum throughput commitments with producers and use appropriate fee structures to recover invested capital early in the life of the contract where capital investment is required by AltaGas;
- Define the terms and conditions under which future production is processed at an AltaGas facility; and
- Establish processing fees at several facilities on a take-or-pay basis.

The majority of contracts in place at December 31, 2023 were subject to annual price escalation related to changes in CPI.

Where natural gas reserves have been dedicated under a contract, the contract normally extends beyond one year and up to the life of the reserves, depending on the amount of capital AltaGas has invested in the facility. Where reserves have not been dedicated under a contract or AltaGas has not made a significant capital investment, the contracts are normally subject to termination by either party upon one to three months' notice. Producing wells typically remain connected to a processing system for their entire productive lives.

Natural gas processing facility owners have the right to extract liquids from the natural gas stream, either directly as the owner of the natural gas, or through NGL extraction agreements. The typical commercial arrangement involves the ethane and NGL extraction plant owner contracting with the gas shipper on a natural gas transmission system for the right to

extract NGL from the transporter's natural gas. Ethane and NGL are extracted from the energy content of the shipper's natural gas.

The value of ethane and NGL extraction is a function of the difference between the value of the ethane, propane, butane and condensate as separate marketable commodities and their heating value as constituents of the natural gas stream. If the components are not extracted and sold at prices that reflect the value for each of the individual commodities, they are sold as part of natural gas and generate revenue for their heating value at the prevailing natural gas price.

Fractionation facilities charge a fee to separate NGL mix into specification propane, butane, and condensate.

### Terminals and Storage

The Fort Saskatchewan terminal offloads NGLs from the nearby fractionator and loads propane and butane onto tank trucks and railcars. A portion of the terminal's capacity is dedicated under a long-term agreement to the fractionation facility and provides egress capability for its customers. AltaGas enters into annual and long-term loading agreements with customers in the Fort Saskatchewan hub at the current competitive market based rates.

The Strathcona Storage Joint Venture currently handles propane, butane, and ethylene for customers/owners of the Fort Saskatchewan petrochemical hub. The two ethylene caverns store products under long-term lease agreements underpinned by cost of service models with creditworthy counterparties. The NGL caverns are leased under long-term agreements at market rate storage fees plus reimbursement of operating and maintenance costs.

The Dimsdale natural gas storage facility is contracted with multiple investment grade counterparties with contracts over an average 5 year term.

### **Environmental Considerations Impacting the Midstream Business**

The Midstream business is subject to the following environmental regulations:

#### ***Canadian Jurisdictions***

##### Multi-Sector Air Pollutants Regulations

The Multi-Sector Air Pollutants Regulation promulgated under the Canadian EPA was passed on June 17, 2016. The regulation requires owners and operators of specific industrial facilities and equipment types to meet consistent performance standards across the country. The objectives of the regulations are to limit the amount of NOx emitted from modern (new) and pre-existing (existing), gaseous-fuel-fired engines and non-utility boilers and heaters used in many industrial facilities.

AltaGas is currently focused on evaluating and implementing air emissions reductions opportunities to reduce NOx emissions associated with its engine, heater, and boiler fleet.

##### Federal Carbon Pricing

On December 9, 2016, the Government of Canada formally announced the "Pan-Canadian Framework on Clean Growth and Climate Change". As a result, on June 21, 2018, the federal government enacted the GGPPA to implement a carbon pollution pricing system that took effect beginning in 2019, to be applied in provinces and territories that do not have a carbon pricing system that aligns with the federal benchmark.

On October 11, 2022, the Government of Canada amended the GGPPA to establish the federal benchmark carbon price post-2022. These amendments formally set the national minimum price on carbon pollution to 2030. The Government of Canada has also over time strengthened the criteria that all provincial pricing systems across Canada must meet.

The federal carbon pollution pricing scheme is composed of two elements, both of which may impact AltaGas' business: (1) a carbon levy applied to the distribution of fossil fuels, priced at \$65 per tonne in 2023, \$80 per tonne beginning April 2024, and then increasing by \$15 per year, reaching \$170 per tonne of carbon emitted in 2030; and (2) an output-based pricing system for industrial facilities that emit 50,000 tonnes of CO<sub>2</sub>e per year or more, with an opt-in capability for smaller facilities with emissions below the threshold.

The output-based pricing system applies to a covered facility's emissions from fuel combustion as well as any emissions of synthetically produced GHG's from industrial processes and products, provided the facility is in a designated province that does not have an equivalent carbon pricing system. As of December 31, 2023, AltaGas has three processing facilities that would exceed the 50,000 tonnes of CO<sub>2</sub>e per year threshold, including two facilities in Alberta and one facility in British Columbia. These facilities will continue to be regulated by the carbon pricing and reporting systems within those provinces because the federal government currently considers the carbon pricing schemes in both Alberta and British Columbia as equivalent to the federal output-based pricing system. The B.C. scheme is also deemed equivalent to the federal carbon levy. In contrast, the federal carbon levy applies in Alberta, which does not have an equivalent regime applicable to the distribution of fossil fuels.

Provincial and territorial carbon pollution pricing systems will continue to be required to meet the strengthened 2023 to 2030 benchmark criteria to be a federally recognized carbon pollution pricing system. The federal government will continue to assess, on an annual basis, whether provinces and territories meet these criteria and whether they can continue to implement their own carbon pollution pricing regimes in lieu of the GGPPA.

#### Federal Greenhouse Gas Reporting Program

The GHGRP collects information on GHG emissions annually from facilities across Canada. It is a mandatory program for those who meet the requirements. Facilities that emit 10,000 tonnes or more of GHGs, in CO<sub>2</sub>e per year, must report their emissions to Environment and Climate Change Canada. As of June 1, 2023, nine facilities within the Midstream segment reported to the GHGRP.

#### Methane Reduction Regulation

ECCC methane reduction regulations that detail requirements to reduce methane emissions through operational and equipment modifications came into effect in January 2020. ECCC's methane reduction regulations aim to reduce the oil and gas sector emissions by 40 to 45 percent below 2012 levels by 2025. ECCC has also pledged to develop a plan to reduce the sector's methane emissions by at least 75 percent below 2012 levels by 2030, as discussed further below. Alberta and British Columbia have drafted their own methane regulations that supersede the current federal regulation for provincially regulated assets.

The Alberta methane regulations ("AER Directives 060 and 017") set out requirements for flaring, incinerating, and venting in Alberta at all upstream petroleum industry wells and facilities, with specific operational requirements to address fugitive emissions and venting. These operational requirements could result in equipment retrofit, equipment replacement, advanced planning, and investment to ensure compliance. In addition, companies are required to have a fugitive emissions management program that must be designed to reduce fugitive emissions over time and conduct leak detection surveys at their facilities at a prescribed frequency (annually or tri-annually) based on equipment or facility type.

In British Columbia, oil and gas facilities under the *Energy Resource Activities Act* - Drilling and Production Regulation are required to conduct leak detection surveys at their facilities at a prescribed frequency (annually or tri-annually) based on



equipment or facility type. In addition to the leak detection surveys, natural gas vent limits have been established for various types of oil and gas equipment, which could result in equipment retrofit, equipment replacement, advanced planning, and investment to ensure compliance.

## TIER

The TIER regulation in Alberta requires established industrial facilities with GHG emissions above a certain threshold to reduce their emissions. Emission reduction obligations under TIER are determined according to a facility specific benchmark approach, which initially required facilities to reduce emissions intensity by 10 percent relative to the facility's historical production weighted average emissions intensity and increased the stringency of the facility specific benchmark by 1 percent annually. Effective January 1, 2023, the benchmarks for most sectors will increase by 2 percent annually until the benchmark meets a designated high-performance benchmark, which is calculated as the average emissions intensity of the most emissions-efficient facilities in the sector. The Government of Alberta has also announced it will be increasing the price of fund credits under the TIER regulation to match the national minimum price on GHG emissions between 2023 and 2030.

AltaGas' Harmattan, Gordondale and Pipestone facilities are mandatory participants in the TIER program.

## Greenhouse Gas Industrial Reporting and Control Act

On January 1, 2016, the B.C. *Greenhouse Gas Industrial Reporting and Control Act* came into force to, among other things, ensure LNG facilities in B.C. have an emissions cap. The legislation replaced the previous *Greenhouse Gas Reduction (Cap and Trade) Act*.

AltaGas' Blair Creek facility, Townsend complex, North Pine facility, RIPET, and other assets in B.C. are subject to the reporting obligations and as of December 31, 2023, are in compliance with the Greenhouse Gas Emission Reporting Regulation.

## Carbon Tax Act

AltaGas' operating facilities in B.C. operate under and comply with requirements set forth by the Carbon Tax Act of B.C. While AltaGas is subject to this tax, some of the compliance costs are recovered through contract recovery mechanisms with its customers. British Columbia established the CleanBC program which provides incentive payments or tax rebates for industrial operations that meet an established emission intensity benchmark. AltaGas participates in these programs and receives carbon tax rebates at its facilities that meet or exceed the emission intensity benchmarks. The CleanBC rebate program will end in 2024, as the province transitions to an output-based pricing system starting in April 2024. This system will apply to covered industrial emitters and will price emissions that exceed specified output-based limits, as discussed further below.

## ***Anticipated Policies***

### Methane Emissions Reduction Plan

On October 11, 2021, the ECCC committed to developing a plan to reduce oil and gas sector methane emissions by at least 75 percent below 2012 levels by 2030. In 2022, Canada released its proposed framework on how it intends to reach this goal. The framework proposes to expand the scope of existing methane regulations to apply to a wider set of sources, eliminate exclusions, and drive as many individual sources as possible toward zero emissions. On December 16, 2023, ECCC published draft regulations to implement the proposed framework. If implemented as drafted, these regulations would aim to reduce the sector's methane emissions in line with the 2030 target described above. While AltaGas would not be directly impacted by these regulations, provincial regulations must obtain equivalency in order to supersede the federal regulations. As such, the federal regulation will guide how the methane requirements within the provinces of B.C.

and Alberta may change. AltaGas will continue to monitor and assess the impacts of the amendments on its businesses and operations as more information becomes available.

#### GHG Emissions Reduction Plan and Oil and Gas Sector Emissions Cap

On June 29, 2021, the federal government enacted the Net-Zero Act, which legislated a federal commitment to achieve net-zero GHG emissions by 2050 and a nearer-term target of the federal government's Nationally Determined Contribution under the Paris Climate Agreement, which currently is a 40 - 45 percent GHG emissions reduction by 2030. The upstream crude oil and natural gas industry is expected to contribute a significant amount of the reduction needed to achieve these goals. On March 29, 2022, the federal government released the first plan under the Net-Zero Act, the "2030 Emissions Reduction Plan".

In the 2030 Emissions Reduction Plan and a discussion paper which followed, the federal government has proposed to cap and reduce oil and gas sector GHG emissions in order to achieve an overall reduction of GHG emissions from the sector of 32 percent below 2005 levels by 2030. On December 7, 2023, the federal government published a proposed regulatory framework for this cap. According to this proposal, the federal government would introduce a cap-and-trade system that would limit 2030 emissions from covered sources in the oil and gas sector to 20 to 23 percent below 2019 levels (or 35 to 38 percent below 2019 levels, without the use of certain compliance flexibility mechanisms). The cap-and-trade system would apply to emissions from certain oil and gas facilities, including LNG, conventional oil, offshore, oil sands, and natural gas production and processing facilities. The federal government has indicated that it plans to publish final regulations establishing the cap-and-trade system in 2025. The details of this cap and reduction strategy are still in development and AltaGas continues to actively monitor such developments.

#### **Clean Electricity Regulations**

ECCC is advancing CER to achieve a net-zero electricity grid by 2035. On August 10, 2023, the federal government released a draft of the CER, which if implemented as drafted would cover all generating units that generate electricity using fossil fuels, have a capacity of 25 MW or greater, and are connected to an electricity system that is subject to North American Electric Reliability Corporation standards. With certain exceptions, the CER would impose a performance standard of 30 tonnes of CO<sub>2</sub> per gigawatt hour of electricity generated by covered units, measured on an annual average basis, provided the unit is a net exporter of electricity to the grid in the applicable year. AltaGas will continue to monitor development of CER to assess potential implications to our cogeneration facilities.

#### **British Columbia Output-Based Pricing System/Emission Cap**

B.C. implemented a carbon price in 2008 administered by a charge on consumed fuels and supplemented by the CleanBC Program for Industry. In 2024, B.C. will transition industry over to OBPS which is intended to ensure a price incentive for industrial GHG reductions. The B.C. OBPS will be made more stringent for the oil and gas industry as the mechanism for government to implement its Oil and Gas Emissions Cap, which is targeting 33 to 38 percent emissions reductions by 2030. AltaGas will continue to monitor the B.C. government's implementation strategy and evaluate the impact on AltaGas facilities.

AltaGas' Blair Creek facility, Townsend complex, North Pine facility, RIPET, and other assets in B.C. are expected to be subject to the B.C. OBPS.

## **United States Jurisdictions**

### **Washington State**

#### Department of Ecology Reporting of Emissions of Greenhouse Gases

The Department of Ecology has established Greenhouse Gas Reporting requirements for any facility that exceeds the threshold of 10,000 metric tonnes of CO<sub>2</sub>e or more per calendar year in total GHG emissions from applicable source categories. If the reporting threshold is exceeded, an annual GHG report must be filed with the Department of Ecology.

As of December 31, 2023, the Ferndale terminal was in material compliance with its GHG emissions reporting requirements.

#### Cap-and-Invest Program

In 2021, the Washington State Legislature passed the Climate Commitment Act which establishes a comprehensive, market-based cap-and-invest program to reduce carbon pollution and achieve the GHG limits set in state law. Generally, businesses are subject to the program if they generate covered emissions that exceed 25,000 metric tons of CO<sub>2</sub>e per year. Covered business types include, but are not limited to, fuel suppliers, natural gas and electric utilities, waste-to-energy facilities (starting in 2027), and railroads (starting in 2031).

The cap-and-invest program commenced January 2023. Fuel supplied by AltaGas within Washington State for combustion purposes is a covered activity under this program. AltaGas expects all incremental costs associated with the Cap-and-Invest program to be passed through to its customers.

### **U.S. Federal Air and GHG Regulations**

The U.S. GHGRP requires reporting of GHG data and other relevant information from large GHG emission sources, fuel, and industrial gas suppliers, and CO<sub>2</sub> injection sites in the United States. A total of 41 categories of reporters are covered by the U.S. GHGRP. Facilities determine whether they are required to report based on the types of industrial operations located at the facility, their emission levels, or other factors. Facilities are generally required to submit annual reports under Part 98 if:

- GHG emissions from covered sources exceed 25,000 metric tons CO<sub>2</sub>e per year;
- Supply of certain products would result in over 25,000 metric tons CO<sub>2</sub>e of GHG emissions if those products were released, combusted, or oxidized; or
- The facility receives 25,000 metric tons or more of CO<sub>2</sub> for underground injection.

All of AltaGas' operating facilities located in the U.S. operate under and comply with requirements set forth by the U.S. GHGRP.

### **Anticipated Policies**

#### **California Climate Disclosure Bills**

On October 7, 2023, the state of California signed into law two climate disclosure bills which will require many companies doing business in California to make broad-based climate-related disclosures starting as early as 2026. The two bills are:

- Senate Bill 253, *Climate Corporate Data Accountability Act* ("SB 253"): This bill will require certain companies to disclose their total GHG emissions on an annual basis beginning with scope 1 and scope 2 emissions in 2026

and phasing in scope 3 emissions in 2027. As part of SB 253, the California State Air Resources Board ("CARB") must develop and adopt regulations on or before January 1, 2025 outlining the specific requirements of the *Climate Corporate Data Accountability Act*.

- Senate Bill 261, *Greenhouse Gases: Climate-Related Financial Risk* ("SB 261"): This bill will require certain companies to disclose climate-related financial risks, and measures to mitigate such risks, pursuant to the TCFD recommendations.

Reporting obligations under the two bills are expected to commence in 2026 and continue thereafter on an annual basis for SB 253 and a biennial basis for SB 261; however, the details regarding implementation are still in development and AltaGas continues to actively monitor such developments.

## CORPORATE/OTHER SEGMENT

The Corporate/Other business consists of power assets and AltaGas' corporate activities, including general corporate investments and other revenue and expense items, such as general corporate overhead and interest expense, which are not directly attributable to AltaGas' operating business segments. For the year ended December 31, 2023, the revenue for the Corporate/Other business was \$99 million excluding intersegment eliminations and risk management and trading activities (2022 – \$100 million).

### Power Assets

AltaGas' power assets are engaged in the generation and sale of capacity, electricity, ancillary services, and related products, primarily in California. AltaGas has 508 MW of installed power capacity from a combination of gas-fired and remaining distributed generation assets, as more particularly set forth in the below table:

Facility	Interest (%)	Capacity (MW)	Type	Geographic Region	Contracted Expiry Date
Blythe	100 %	507	Gas-fired	California, U.S.	2027
Distributed Generation	100 %	1	Various	Various regions in the U.S.	Various
Total		508			

### Gas-Fired Generation

- Blythe Energy Center, located in southern California, utilizes gas-fired generation to produce power and serves the transmission grid, which is operated by the CAISO, to cover periods of high demand primarily driven by the Los Angeles area. The facility is directly connected to an El Paso Gas Company natural gas pipeline for its primary gas supply and a Southern California Gas Company pipeline as a secondary gas supply, and also interconnects to SCE and CAISO via a 67-mile transmission line which is also owned by Blythe Energy Center.

### Competition

The Blythe Energy Center was contracted under a PPA until December 31, 2023. Under the tolling agreement(s), SCE had exclusive rights to all capacity, energy, ancillary services, and resource adequacy benefits during the PPA term. In February 2023, AltaGas reached an agreement with SCE for the purchase of resource adequacy attributes from the Blythe facility for the period from January 1, 2024 through December 31, 2027.

## Environmental Considerations Impacting the Corporate/Other Segment

AltaGas' power assets included in the Corporate/Other segment are subject to the following environmental regulations:

### U.S. Federal Air and GHG Regulations

#### Clean Air Act

Under the *Clean Air Act*, the USEPA has the authority to set federal ambient air quality standards for certain air pollutants which apply throughout the U.S. The *Clean Air Act* could increase regulatory burdens for AltaGas' natural gas-fired power plants, which emit volatile organic compounds and NO<sub>2</sub>, by leading to additional control requirements, obligations to obtain emission offsets, or permitting delays.

Individual states must ensure that, at a minimum, their air quality meets the ambient federal standards set by the USEPA. In general, states may choose to impose stricter performance requirements than does the USEPA.

In addition, the *Clean Air Act* requires certain facilities to obtain construction and operating permits for their air emissions.

As of December 31, 2023, AltaGas' operating natural gas-fired power generation facility in California was in compliance with its air permit requirements, which are issued in accordance with federal and state emissions standards.

### California GHG Regulations

#### Clean Energy Targets

In late 2022, California passed SB 1020. SB 1020 updates the clean electricity goals and targets previously set by SB 100 in 2018. SB 1020 has added interim targets to SB 100's policy framework to require renewable and zero-carbon resources to supply 90 percent of all retail electricity sales by 2035 and 95 percent of all electricity retail sales by 2040. SB 1020 also requires that all state agencies must source their energy from 100 percent renewable sources by 2035, ten years sooner than the current law requires. AltaGas will continue to monitor and assess the impacts of SB 1020 on its operations as more information becomes available.

#### Cap-and-Trade Program

In late 2022, the CARB adopted its SP, California's roadmap for reducing GHG emissions and achieving carbon neutrality. The SP contemplates the continuation, and revisions, to the Cap-and-Trade Program. As of December 31, 2023, AltaGas' Blythe Energy Center in California was in compliance with the Cap-and-Trade Program requirements. Costs associated with meeting AB 32 and California's cap-and-trade program have been passed through to the utilities pursuant to the applicable PPA. The SP does not provide specifics as to amendments to the Cap-and-Trade Program, but does suggest the possibility of revisions to allowance supply and other potential changes. Regulated entities should expect revisions to the Cap-and-Trade Program which may impact their operations, although the extent of the revisions and any resulting impacts remains unknown at this time.

## California Groundwater Regulation

In California, water supply availability can be volatile, particularly as implementation moves forward on the SGMA. SGMA will require adoption of new mandatory requirements with the aim of managing groundwater "sustainably" over the long term. SGMA gives primary responsibility for regulating groundwater to local agencies referred to as GSAs. GSAs must develop plans that allow the maximum quantity of groundwater to be withdrawn without causing the lowering of groundwater levels, reduction of storage, seawater intrusion, degraded water quality, land subsidence, or depletion of interconnected surface water. Although SGMA focuses on groundwater supplies, reduced availability of groundwater might increase surface water demands, whether originating from local or imported surface water supply sources. It is uncertain whether or how SGMA may impact water supplies for Blythe Energy Center. Blythe Energy Center was designed to operate with wastewater capture and other water recycling techniques. Water is reused at Blythe Energy Center in steam generation, reducing the amount of water used by the facility.

## ***Anticipated Policies***

### **New Source Performance Standards for Greenhouse Gas Emissions from New, Modified, and Reconstructed Fossil Fuel-Fired Electric Generating Units**

On May 23, 2023, the USEPA published a proposed rule to (i) revise the new source performance standards ("NSPS") under the *Clean Air Act* section 111(b) for GHG emissions from new fossil fuel-fired stationary combustion turbine electric generating units ("EGUs"); (ii) revise the NSPS for GHG emissions from fossil fuel-fired steam generating units that undertake a large modification; (iii) establish emission guidelines pursuant to the *Clean Air Act* section 111(d) for GHG emissions from existing fossil fuel-fired steam generating EGUs, including coal-fired and oil/gas-fired steam generating EGUs; (iv) establish emissions guidelines pursuant to the *Clean Air Act* section 111(d) for GHG emissions from the largest, most frequently operated stationary combustion turbines; and (v) repeal the Affordable Clean Energy Rule, which was introduced by the USEPA in 2019 in an effort to reduce GHG emissions from existing coal-fired EGUs. Specifically, for existing natural gas EGUs with a combustion turbine larger than 300 MW and a capacity factor greater than 50 percent, EPA is proposing a best system of emission reduction of highly efficient generation coupled with co-firing 30 percent low-GHG hydrogen by 2032 and 96 percent low-GHG hydrogen by 2038 or highly efficient generation coupled with 90 percent capture of CO<sub>2</sub> by 2035.

The final rule is still under development and the specific requirements as to fossil fuel-fired EGUs are subject to change. AltaGas continues to actively monitor such developments.

## **California Climate Disclosure Bills**

Please refer to "Business of the Corporation - Midstream Business - Environmental Considerations Impacting the Midstream Business - United States Jurisdictions - Anticipated Policies".

## CAPITAL STRUCTURE

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### Description of Capital Structure

The authorized share capital of AltaGas consists of an unlimited number of Common Shares and such number of Preferred Shares issuable in series at any time as have aggregate voting rights either directly or on conversion or exchange that in the aggregate represent less than 50 percent of the voting rights attaching to the then issued and outstanding Common Shares. At December 31, 2023, AltaGas had 294,903,763 outstanding Common Shares, 6,746,679 outstanding Series A Shares, 1,253,321 outstanding Series B Shares, 6,885,823 outstanding Series G Shares, 1,114,177 Series H Shares, 300,000 outstanding Series 2022-A Shares, 250,000 outstanding Series 2022-B Shares, and 200,000 outstanding Series 2023-A Shares.

On March 31, 2022, AltaGas redeemed all of its 12,000,000 issued and outstanding Series K Preferred Shares for a redemption price equal to \$25.00 per Series K Share, together with all accrued and unpaid dividends to, but excluding, the redemption date.

On September 30, 2022, AltaGas redeemed all of its 8,000,000 issued and outstanding Series C Preferred Shares for a redemption price equal to US\$25.00 per Series C Share, together with all accrued and unpaid dividends to, but excluding, the redemption date.

On December 31, 2023, AltaGas redeemed all of its 8,000,000 issued and outstanding Series E Preferred Shares for a redemption price equal to \$25.00 per Series E Share, together with all accrued and unpaid dividends to, but excluding, the redemption date.

The summary below of the rights, privileges, restrictions and conditions attaching to the Common Shares and the Preferred Shares is subject to, and qualified by reference to, AltaGas' articles and by-laws.

### Common Shares

Holders of Common Shares are entitled to one vote per share at meetings of Shareholders, to receive dividends if, as and when declared by the Board of Directors and to receive the remaining property and assets of AltaGas upon its dissolution or winding-up, subject to the rights of shares having priority over the Common Shares.

## Preferred Shares <sup>(1)</sup> <sup>(8)</sup> <sup>(9)</sup> <sup>(10)</sup>

The following table summarizes AltaGas' Preferred Shares outstanding as at December 31, 2023:

	Current Yield	Annual dividend per share <sup>(2)</sup>	Redemption price per share <sup>(7)</sup>	Redemption and conversion option date <sup>(3)</sup> <sup>(7)</sup>	Right to convert into <sup>(4)</sup>
Series A Shares <sup>(5)</sup>	3.060%	\$0.76500	\$25	September 30, 2025	Series B
Series B Shares <sup>(6)</sup> <sup>(7)</sup>	Floating	Floating	\$25	September 30, 2025	Series A
Series G Shares <sup>(5)</sup>	4.242%	\$1.06050	\$25	September 30, 2024	Series H
Series H Shares <sup>(6)</sup> <sup>(7)</sup>	Floating	Floating	\$25	September 30, 2024	Series G

- The Corporation is authorized to issue up to 8,000,000 of Series F Shares, subject to certain conditions, upon conversion by the holders of the applicable currently issued and outstanding series of Preferred Shares noted opposite such series in the table on the applicable conversion option date. If issued upon the conversion of the applicable series of Preferred Shares, Series F Shares are also redeemable for \$25.50 on any date after the applicable conversion option date, plus all accrued but unpaid dividends to, but excluding, the date fixed for redemption.
- The holders of Series A Shares and Series G Shares are entitled to receive a cumulative quarterly fixed dividend as and when declared by the Board of Directors. The holders of Series B Shares and Series H Shares are entitled to receive a quarterly floating dividend as and when declared by the Board of Directors. If issued upon the conversion of the applicable series of Preferred Shares, the holders of Series F Shares will be entitled to receive a quarterly floating dividend as and when declared by the Board of Directors.
- AltaGas may, at its option, redeem all or a portion of the outstanding shares for the redemption price per share, plus all accrued and unpaid dividends on the applicable redemption option date and on every fifth anniversary thereafter.
- The holder will have the right, subject to certain conditions, to convert their preferred shares of a specified series into preferred shares of that other specified series as noted in this column of the table on the applicable conversion option date and every fifth anniversary thereafter.
- Holders of Series A Shares and Series G Shares will be entitled to receive cumulative quarterly fixed dividends, which will reset on the redemption and conversion option date and every fifth year thereafter, at a rate equal to the sum of the then five-year Government of Canada bond yield plus 2.66 percent (Series A Shares) and 3.06 percent (Series G Shares).
- Holders of Series B Shares and Series H Shares will be entitled to receive cumulative quarterly floating dividends, which will reset each quarter thereafter at a rate equal to the sum of the then 90-day Government of Canada Treasury Bill rate plus 2.66 percent (Series B Shares) and 3.06 percent (Series H Shares). Each quarterly dividend is calculated as the annualized amount multiplied by the number of days in the quarter, divided by the number of days in the year. Commencing December 31, 2023, the floating quarterly dividend rate is \$0.47874 per share for Series B Shares and \$0.50361 per share for Series H Shares for the period starting December 31, 2023 to, but excluding, March 31, 2024.
- Series B Shares can be redeemed for \$25.50 per share on any date after September 30, 2015 that is not a Series B conversion date, plus all accrued and unpaid dividends to, but excluding, the date fixed for redemption. Series H Shares can be redeemed for \$25.50 per share on any date after September 30, 2019 that is not a Series H conversion date, plus all accrued and unpaid dividends to, but excluding, the date fixed for redemption.
- The Series 2022-A Shares were issued to Computershare Trust Company of Canada to be held in trust to satisfy AltaGas' obligations under the Series 1 Indenture, in connection with the issuance of the Subordinated Notes, Series 1. Holders of the Series 2022-A Shares shall not be entitled to receive any dividends, nor shall any dividends accumulate or accrue, on the Series 2022-A Shares prior to delivery to the holders of the Subordinated Notes, Series 1 following the occurrence of certain bankruptcy or insolvency events in respect of AltaGas. If at any time, AltaGas redeems, purchases for cancellation or repays the Subordinated Notes, Series 1 such number of Series 2022-A Shares with an aggregate issue price equal to the principal amount of Subordinated Notes, Series 1 redeemed, purchased for cancellation or repaid by AltaGas will be redeemed in accordance with the terms of the Series 2022-A Shares.
- The Series 2022-B Shares were issued to Computershare Trust Company of Canada to be held in trust to satisfy AltaGas' obligations under the Series 2 Indenture, in connection with the issuance of the Subordinated Notes, Series 2. Holders of the Series 2022-B Shares shall not be entitled to receive any dividends, nor shall any dividends accumulate or accrue, on the Series 2022-B Shares prior to delivery to the holders of the Subordinated Notes, Series 2 following the occurrence of certain bankruptcy or insolvency events in respect of AltaGas. If at any time, AltaGas redeems, purchases for cancellation or repays the Subordinated Notes, Series 2 such number of Series 2022-B Shares with an aggregate issue price equal to the principal amount of Subordinated Notes, Series 2 redeemed, purchased for cancellation or repaid by AltaGas will be redeemed in accordance with the terms of the Series 2022-B Shares.



(10) The Series 2023-A Shares were issued to Computershare Trust Company of Canada to be held in trust to satisfy AltaGas' obligations under the Series 3 Indenture, in connection with the issuance of the Subordinated Notes, Series 3. Holders of the Series 2023-A Shares shall not be entitled to receive any dividends, nor shall any dividends accumulate or accrue, on the Series 2023-A Shares prior to delivery to the holders of the Subordinated Notes, Series 3 following the occurrence of certain bankruptcy or insolvency events in respect of AltaGas. If at any time, AltaGas redeems, purchases for cancellation or repays the Subordinated Notes, Series 3 such number of Series 2023-A Shares with an aggregate issue price equal to the principal amount of Subordinated Notes, Series 3 redeemed, purchased for cancellation or repaid by AltaGas will be redeemed in accordance with the terms of the Series 2023-A Shares.

Preferred Shares may be used by AltaGas for any appropriate corporate purposes, including, without limitation, public or private financing transactions or issuance as a means of obtaining additional capital for use in AltaGas' business and operations or in connection with acquisitions of other businesses and properties. AltaGas does not intend to use Preferred Shares as a defensive tactic to block take-over bids.

The Board of Directors may divide any unissued Preferred Shares into series and fix the number of shares in each series and the designation, rights, privileges, restrictions, and conditions thereof. The Preferred Shares of each series will rank on parity with Preferred Shares of every other series with respect to accumulated dividends and return of capital and the holders of Preferred Shares will rank prior to the holders of Common Shares and any other shares of AltaGas ranking junior to the Preferred Shares with respect to the payment of dividends and the distribution of assets in the event of liquidation, dissolution or winding-up of AltaGas, whether voluntary or involuntary.

The rights, privileges, restrictions and conditions attaching to the Preferred Shares as a class may be repealed, altered, modified, amended or amplified or otherwise varied only with the sanction of the holders of the Preferred Shares given in such manner as may then be required by law, subject to a minimum requirement that such approval be given by resolution in writing executed by all holders of Preferred Shares entitled to vote on that resolution or passed by the affirmative vote of at least 66⅔ percent of the votes cast at a meeting of holders of Preferred Shares duly called for such purpose.

For the specific rights, privileges, restrictions, and conditions attaching to the currently issued and, as applicable, outstanding: (i) Series A Shares and the Series B Shares, reference should be made to the prospectus supplement of AltaGas dated August 11, 2010; (ii) Series F Shares, reference should be made to the prospectus supplement of AltaGas dated December 6, 2013; (iii) Series G Shares and Series H Shares, reference should be made to the prospectus supplement of AltaGas dated June 25, 2014; (iv) Series 2022-A Shares, reference should be made to the prospectus supplement of AltaGas dated January 5, 2022; (v) Series 2022-B Shares, reference should be made to the prospectus supplement of AltaGas dated August 4, 2022; and (vi) Series 2023-A Shares, reference should be made to the prospectus supplement of AltaGas dated March 31, 2023. The articles of the corporation and each of the prospectus supplements described herein have been filed with, and may be retrieved from, SEDAR+ at [www.sedarplus.ca](http://www.sedarplus.ca).

## **Debt**

AltaGas' total debt is primarily comprised of senior unsecured notes in the form of MTNs, WGL and Washington Gas long-term notes, SEMCO long-term notes, subordinated hybrid notes, draws under bank credit facilities, and short-term debt in the form of commercial paper. For a complete list of such notes and draws currently outstanding, please refer to Notes 14, 15, and 16 of AltaGas' audited Consolidated Financial Statements as at and for the year ended December 31, 2023 (which has been filed with, and may be retrieved from, SEDAR+ at [www.sedarplus.ca](http://www.sedarplus.ca)).

## GENERAL

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### Employees

At December 31, 2023, there were 2,893 individuals employed by AltaGas.

	December 31, 2023
Utilities	2,004
Midstream	664
Corporate/Other	225
Total	2,893

### Directors and Officers

As at March 1, 2024, the directors and executive officers of AltaGas, as a group, owned beneficially, directly or indirectly, or exercised control or direction over 2,232,827 of the outstanding Common Shares, or approximately 0.76 percent of the 295,327,138 Common Shares issued and outstanding.

### Directors

The number of directors of AltaGas is to be determined from time to time by resolution of the Board of Directors. The number of directors is currently 11, of which 10 are independent directors.

The term of office of any director continues until the next annual meeting of Shareholders following the director's election or appointment, unless the term ends earlier in the event of death, resignation, removal, disqualification or other reason in accordance with the constating documents of AltaGas. The Shareholders are annually entitled to elect the Board of Directors.

The following table sets forth the names of the directors of AltaGas on March 1, 2024, their municipalities of residence, and their principal occupations within the last five years.

Name of Director, Municipality of Residence, and Position	Principal Occupation During the Past Five Years	Director Since
<b>Victoria Calvert</b> <sup>(1)</sup> Calgary, Alberta, Canada Director	Ms. Calvert is a Corporate Director and a private consultant specializing in executive coaching. She is also Professor Emerita of Business at Mount Royal University in Calgary, where she taught from 1988 to 2018. Ms. Calvert was a Director of the Canadian Alliance of Community Service Learning from 2009 to 2017. Prior to this, she held corporate positions at Hudson's Bay Oil and Gas, the Bank of Nova Scotia and British Petroleum.	November 1, 2015
<b>David Cornhill</b> <sup>(1)</sup> Calgary, Alberta, Canada Director	Mr. Cornhill is a founding shareholder of AltaGas and its predecessors. Mr. Cornhill was Chief Executive Officer from 1994 to 2016 and served as interim Co-CEO from July to December 2018. He was Chairman of the Board from 1994 to April 2019. Prior to forming AltaGas, Mr. Cornhill served in various capacities with Alberta and Southern Gas Co. Ltd., including Vice President, Finance and Administration, Treasurer and President and Chief Executive Officer.	Director of AltaGas (and its predecessors) since April 1, 1994
<b>Jon-Al Duplantier</b> <sup>(1)(3)</sup> Houston, Texas, USA Director	Mr. Duplantier is a Corporate Director. He retired from Parker Drilling Company in July 2020, where he held a number of executive roles since joining in 2009, most recently as President, Rental Tools and Well Services from April 2018. Prior thereto, he served as Senior Vice President, Chief Administrative Officer and General Counsel from April 2014 to March 2018.	February 2, 2021
<b>Robert Hodgins</b> <sup>(1)</sup> Calgary, Alberta, Canada Director	Mr. Hodgins is a CA, CPA and has been an independent businessman since November 2004. Mr. Hodgins served as a non-executive part-time Senior Advisor, Investment Banking for Canaccord Genuity Corp. from September 2018 to May 2022. Mr. Hodgins also held the positions of Chief Financial Officer of Pengrowth Energy Trust, Vice President and Treasurer of Canadian Pacific Limited and Chief Financial Officer of TransCanada PipeLines Limited.	Director of AltaGas (and its predecessors) since March 2, 2005
<b>Cynthia Johnston</b> <sup>(1)</sup> Victoria, B.C., Canada Director	Ms. Johnston is a Corporate Director. She was Executive Vice President, Gas, Renewables and Operations Services at TransAlta Corporation from 2015 to 2017. From 2011 to 2015, she held various positions, including Executive Vice President, Enterprise Risk and Corporate Services and Executive Vice President Corporate Services. Prior thereto, Ms. Johnston held various executive leadership positions with TransAlta and FortisAlberta Inc.	July 25, 2018
<b>Pentti Karkkainen</b> <sup>(1)</sup> West Vancouver, B.C., Canada Chair of the Board	Mr. Karkkainen is the Chair of the Board. He was a co-founder and General Partner of KERN Partners from 2000 to 2014, and was the firm's Senior Strategy Advisor from 2014 until his retirement in 2015. Prior thereto, Mr. Karkkainen was the Managing Director and Head of Oil and Gas Equity Research at RBC Capital Markets.	July 25, 2018
<b>Phillip Knoll</b> <sup>(1)</sup> Kelowna, B.C., Canada Director	Mr. Knoll is a Corporate Director. He is a Professional Engineer and served as President of Knoll Energy Inc., a private consulting company from 2006 until 2021. Mr. Knoll served as interim Co-CEO of AltaGas from July to December 2018. He was CEO of Corridor Resources Inc. from October 2010 to September 2014. Prior thereto, Mr. Knoll held senior roles with a number of companies, including Duke Energy Gas Transmission, Maritimes & Northeast Pipeline, Westcoast Energy Inc., TransCanada Pipelines Limited and Alberta Natural Gas Company Ltd.	November 1, 2015

Name of Director, Municipality of Residence, and Position	Principal Occupation During the Past Five Years	Director Since
<b>Angela Lekatsas</b> <sup>(1)</sup> Calgary, Alberta, Canada Director	Ms. Lekatsas is a retired executive with over two decades of broad industry and corporate finance experience. She served as President and CEO of Cervus Equipment Corporation from 2019 to 2021 and prior thereto was a senior executive with Nutrien Ltd. and its predecessor company Agrium Inc. for 15 years, holding several Vice President positions, including Treasurer, Corporate Controller, Chief Risk Officer and Merger Integration. Ms. Lekatsas previously worked in public practice accounting for 15 years.	September 1, 2023
<b>Linda Sullivan</b> <sup>(1)</sup> Moneta, Virginia, USA Director	Ms. Sullivan is a Corporate Director. She was Executive Vice President and Chief Financial Officer at American Water Works Company, Inc. from 2016 until her retirement in August 2019, and prior thereto was Senior Vice President and Chief Financial Officer from 2014. Prior to joining American Water Works, she held various roles with the Edison International companies during her 22 years there, including Senior Vice President and Chief Financial Officer at Southern California Edison Company.	January 9, 2020
<b>Nancy Tower</b> <sup>(1)</sup> Halifax, N.S., Canada Director	Ms. Tower served as President and Chief Executive Officer of Tampa Electric Company, a regulated electric utility and a subsidiary of Emera Incorporated, from December 2017 until 2021. From 2014 to 2017, she was the Chief Corporate Development Officer of Emera. Since joining Emera in 1997, Ms. Tower held several senior positions in corporate finance and in operations at Emera and with its subsidiaries, including Controller and Vice President, Customer Operations of Nova Scotia Power Inc., Chief Financial Officer of Emera, and Chief Executive Officer of Emera Newfoundland and Labrador.	January 9, 2020
<b>Vern Yu</b> <sup>(2)</sup> Calgary, Alberta, Canada Director	Mr. Yu has been the President and Chief Executive Officer of AltaGas since July 1, 2023. Refer to the disclosure under "Executive Officers" for further information.	July 1, 2023

- (1) Independent director. The Board made this determination with reference to National Instrument 52-110 - *Audit Committees*.
- (2) Mr. Yu, as current CEO of the Corporation, is not considered independent.
- (3) Mr. Duplantier was an officer of Parker Drilling Company ("Parker") from 2009 until July 2020. Parker and certain of its U.S. subsidiaries (collectively, the Debtors) commenced voluntary Chapter 11 proceedings and filed a prearranged Joint Chapter 11 Plan of Reorganization under Chapter 11 of the United States *Bankruptcy Code* in the United States Bankruptcy Court for the Southern District of Texas, Houston Division. The Plan was subsequently amended and was confirmed by the Bankruptcy Court on March 7, 2019. The Plan became effective on March 26, 2019 and the Debtors emerged from the Chapter 11 Cases.

AltaGas has four standing committees of the Board of Directors: (1) Audit, (2) Governance, (3) Human Resources and Compensation (HRC), and (4) Environment, Health and Safety (EH&S). The members of each of these committees as of March 1, 2024 are identified below:

Director	Audit Committee	Governance Committee	HRC Committee	EH&S Committee
Victoria Calvert		■	■	
David Cornhill				■
Jon-Al Duplantier		■	■	
Cynthia Johnston	■			Chair
Pentti Karkkainen				
Robert Hodgins	■	■		
Phillip Knoll		Chair		■
Angela Lekatsas	■			
Linda Sullivan	Chair		■	
Nancy Tower	■		Chair	

## Executive Officers

The names, municipality of residence and position of each of the current executive officers of AltaGas are as follows:

Name of Officer, Municipality of Residence, and Position with AltaGas Ltd.	Principal Occupation During the Past Five Years
<b>Vern Yu</b> Calgary, Alberta, Canada President and Chief Executive Officer Director	President and Chief Executive Officer of AltaGas since July 1, 2023. Prior to joining AltaGas, Mr. Yu served a number of roles over his three decades at Enbridge Inc., most recently as Executive Vice President, Corporate Development, Chief Financial Officer, and President, New Energy Technologies.
<b>James Harbilas</b> Calgary, Alberta, Canada Executive Vice President and Chief Financial Officer	Executive Vice President and Chief Financial Officer of AltaGas from June 2019. Prior to joining AltaGas, Mr. Harbilas was the Executive Vice President and Chief Financial Officer of Enerflex Ltd. from 2007.
<b>Corine Bushfield</b> Airdrie, Alberta, Canada Executive Vice President, Chief Administrative Officer	Executive Vice President, Chief Administrative Officer of AltaGas from December 2016. Senior Vice President and Chief Financial Officer of Long Run Exploration Ltd. from March 2013 to September 2016. Vice President and Assistant Controller of Encana Corporation from 2010 to March 2013.
<b>Donald (Blue) Jenkins</b> McLean, Virginia, USA Executive Vice President and President Utilities, President of Washington Gas Light Company	Executive Vice President and President, Utilities of AltaGas from December 2019. President of WGL and Washington Gas from December 2019. Prior thereto, Mr. Jenkins was with EQT Corporation from 2012, most recently as Chief Commercial Officer.
<b>Randy Toone</b> Calgary, Alberta, Canada Executive Vice President and President, Midstream	Executive Vice President and President, Midstream from January 2019. From December 2016 served in a number of executive roles, including Executive Vice President and Acting President and Executive Vice President, Commercial and Business Development. Prior thereto, Chief Operating Officer of CSV Midstream Solutions from July 2014 to November 2016 and Country Manager of TAG Oil Ltd. Other roles with AltaGas prior to 2014 include President Utilities, President Gas, and Co-President Gas.
<b>Bradley Grant</b> Calgary, Alberta, Canada Executive Vice President and Chief Legal Officer	Executive Vice President and Chief Legal Officer of AltaGas since July 2018. Also served as Corporate Secretary of AltaGas from April 2022 to December 2023. Prior thereto, Vice President and General Counsel of AltaGas from May 2015. Partner with the law firm of Stikeman Elliott LLP from January 2004 to May 2015.

## Audit Committee

### Composition of the Audit Committee

The Committee is currently comprised of five members, Linda Sullivan (chair), Robert Hodgins, Cynthia Johnston, Nancy Tower, and Angela Lekatsas. Ms. Lekatsas joined the Committee on September 1, 2023. All of the members of the Committee are independent and financially literate as defined under Canadian securities law.

## Relevant Education and Experience

Ms. Sullivan was Executive Vice President and Chief Financial Officer at American Water Works Company, Inc. from 2016 until 2019, and prior thereto was Senior Vice President and Chief Financial Officer from 2014. Prior to joining American Water Works, she held various roles with the Edison International companies, last serving as Senior Vice President and Chief Financial Officer at Southern California Edison Company from 2009 to 2014. Ms. Sullivan began her career in public accounting as an auditor with Arthur Andersen. Ms. Sullivan has over 30 years of utility finance and regulatory experience. She received her Certified Public Accountant designation (inactive) and Certified Management Accountant designation in 1991 and 1996, respectively. Ms. Sullivan holds a Bachelor of Science in Business Administration and Accounting from Portland State University. Ms. Sullivan is the chair of the audit committee at NorthWestern Energy and a member of the audit and finance committees at PPL Corp., both U.S. public companies.

Mr. Hodgins was the Chief Financial Officer at Pengrowth Energy Trust from 2002 to 2004. Mr. Hodgins was Vice President and Treasurer at Canadian Pacific Limited from 1998 to 2002 and Chief Financial Officer of TransCanada PipeLines Limited from 1993 to 1998. Mr. Hodgins has an Honours Degree in Business from the Richard Ivey School of Business at the University of Western Ontario, and is a CPA, CA in Ontario and Alberta. He has served on a number of public company audit committees, and is currently chair of the audit committee of MEG Energy Corp. and serves on the audit committee of Gran Tierra Energy Inc.

Ms. Johnston was Executive Vice President, Gas, Renewables and Operations Services at TransAlta Corporation from 2015 to 2017. From 2011 to 2015, she held a number of other executive positions with TransAlta, including Chief Operating Officer of TransAlta Renewables Inc., President, TAMA Transmission, and Executive Vice President, Enterprise Risk and Corporate Services. Prior thereto, Ms. Johnston held various executive leadership positions with TransAlta and FortisAlberta Inc. In these roles, she had financial oversight responsibilities and actively supervised financial officers and public accountants. She also had executive accountability for the enterprise risk management function of a large publicly traded company. She is on the audit committee of Russel Metals Inc., a public company, and has served on the audit committees of other private entities, including as chair. She holds a Bachelor of Arts in Economics from the University of Calgary and a Masters in Applied Economics from the University of Victoria.

Ms. Tower served as President and Chief Executive Officer of Tampa Electric Company, a regulated electric utility and a subsidiary of Emera Incorporated in Tampa, Florida from 2017 until her retirement in 2021. Prior thereto, she was the Chief Corporate Development Officer of Emera Incorporated from 2014 to 2017. From 1997 until 2014, Ms. Tower held several senior positions in corporate finance and in operations at Emera Incorporated and with its subsidiaries, including Controller and Vice President, Customer Operations of Nova Scotia Power Inc., Chief Financial Officer of Emera Incorporated, and Chief Executive Officer of Emera Newfoundland and Labrador. Ms. Tower holds a Bachelor of Commerce from Dalhousie University and received her Fellow Chartered Accountant designation in 1985. She serves on the audit committee of Finning International Inc. and is the chair of the audit committee at Toronto-Dominion Bank.

Ms. Lekatsas served as President and CEO of Cervus Equipment Corporation until its acquisition in late 2021. Prior to her appointment as President and CEO, Ms. Lekatsas served as an Independent Director of Cervus, including Chair of its Audit Committee. From 2003 to 2018, Ms. Lekatsas was a senior executive with Nutrien Ltd. and its predecessor company Agrium Inc., where she held various roles spanning corporate development, operations, finance, and risk. Prior to that, Ms. Lekatsas worked in public practice accounting with a focus on financial institutions, large transactions, and cross border listed companies. Ms. Lekatsas has a Bachelor of Commerce Degree from the University of Saskatchewan. She received her Chartered Accountant designation from the Institute of Chartered Accountants of Alberta in 1990 and her Certified Public Accountant designation from the Illinois Institute of Certified Public Accountants in 2002. Ms. Lekatsas currently serves on the board of directors of Baytex Energy Corp.

## Pre-Approval Policies and Procedures

As set forth in the Committee's charter, the Committee must pre-approve services provided by the external auditor and has direct responsibility for overseeing the work of the external auditor.

## External Auditor Service Fees by Category

The fees billed by Ernst & Young LLP ("E&Y"), AltaGas' external auditor, during 2023 and 2022 were as follows:

Category of External Auditor Service Fee <sup>(1)</sup> (\$ millions)	2023	2022
Audit fees	\$ 3.4	\$ 3.5
Audit-related fees <sup>(2)</sup>	0.8	0.4
Tax compliance fees <sup>(3)</sup>	0.3	0.4
All other fees <sup>(4)</sup>	0.3	0.3
<b>Total</b>	<b>\$ 4.8</b>	<b>\$ 4.6</b>

(1) Due to the timing of invoices received, \$2.2 million of fees relating to 2022 were paid in 2023.

(2) Represents the aggregate fees billed by E&Y for assurance and related services that were reasonably related to the performance of the audit or review of AltaGas' financial statements and were not reported under "Audit fees". During 2023 and 2022, the nature of the services provided included: review of prospectuses and security filings; research of accounting and audit-related issues; specified audit procedures; costs associated with the debt defeasance at SEMCO, and cost allocation manual audits.

(3) During 2023 and 2022, the nature of the services provided was for tax consultations, tax compliance, and transfer pricing.

(4) Represents the aggregate fees billed by E&Y for products and services, other than those reported with respect to the other categories of service fees, as well as any out-of-pocket costs incurred. During 2023 and 2022, the nature of the services provided was for translation services, ESG related services, and strategic planning facilitation.

## RISK FACTORS

Set forth below is a summary of certain risk factors relating to AltaGas and the business of AltaGas. The risks described below are not an exhaustive list of all risks, nor should they be taken as a complete summary of all the risks associated with the applicable business being conducted. Security holders and prospective security holders of AltaGas should carefully review and consider the risk factors set out below as well as all other information contained and incorporated by reference in this AIF before making a decision on investment and should consult their own experts where necessary. Information regarding AltaGas' risk management activities can be found in AltaGas' management information circular dated March 8, 2023 and will also be included in AltaGas' management information circular for its 2024 annual meeting of Shareholders.

## Health and Safety

The ownership and operation of AltaGas' business is subject to hazards of gathering, processing, transporting, fractionating, storing, and marketing hydrocarbon products, including, without limitation, blowouts, fires, explosions, gaseous leaks, releases and migration of harmful substances, hydrocarbon spills, corrosion, and acts of vandalism and terrorism. Any of these hazards can interrupt operations, impact AltaGas' reputation, cause loss of life or personal injury, result in loss of or damage to equipment, property, information technology systems, related data and control systems, and cause environmental damage that may include polluting water, land or air.

Further, such ownership and operations carry the potential for liability related to worker health and safety, including, without limitation, the risk of any or all of government-imposed orders to remedy unsafe conditions, potential penalties for contravention of health and safety laws, licenses, permits and other approvals, and potential civil liability.

## **Operating Risk**

AltaGas' businesses are subject to the risks normally associated with the operation and development, and storage and transportation of natural gas, NGL, LNG, LPG, and power systems and facilities, including, without limitation, mechanical failure, transportation problems, physical degradation, operator error, manufacturer defects, constraints on natural resource development, delay of or restrictions for projects due to climate change policies and initiatives, protests, activist activity, sabotage, terrorism, failure of supply, weather, wind or water resource deviation, catastrophic events and natural disasters, fires, floods, explosions, earthquakes, and other similar events. These types of events could result in injuries to personnel, third parties including the public, damage to property and the environment, as well as unplanned outages or prolonged downtime for maintenance and repair. Among other things, these events typically increase operation and maintenance expenses and reduce revenues. The occurrence or continuation of any of these events could increase AltaGas' costs and reduce its ability to process, store, transport, deliver, or distribute natural gas, NGLs, LNG, and LPG, and result in significant losses for which insurance may not be sufficient or available. Environmental damage could also result in increased costs to operate and insure AltaGas' assets and have a negative impact on AltaGas' reputation and its ability to work collaboratively with stakeholders.

As AltaGas continues to grow and diversify its energy infrastructure businesses, the operating risk profile of AltaGas may change. Operating entities may enter into or expand business segments where there is greater economic exposure and more "at-risk" capital.

## **Aging Infrastructure**

As utilities infrastructure matures, several of AltaGas' utilities have implemented replacement programs to replace aging infrastructure. If certain pipelines and related infrastructure were to become unexpectedly unavailable for delivery of current or future volumes of natural gas because of repairs, damage, spills or leaks, or any other reason, it could have a material adverse impact on financial conditions and results of operation of the utilities business. Although the costs of infrastructure replacement programs are typically recovered in rates, ongoing capital is required to fund such programs. In addition, operating issues resulting from maturing infrastructure such as leaks, equipment problems and incidents, including, without limitation, explosions and fire, could result in injuries to personnel, third parties including the public, damage to property and the environment, as well as unplanned outages or prolonged downtime for maintenance and repair, legal liability, repair and remediation costs, increased operating costs, increased capital expenditures, regulatory fines and penalties, and other costs and a loss of customer confidence. Any liabilities resulting from the occurrence of these events may not be fully covered by insurance or rates.

## **Natural Gas Supply Risk**

Adequate supplies of natural gas and pipeline and storage capacity may not be available to satisfy committed obligations as a result of economic events, natural occurrences, and/or failure of a counterparty to perform under gas purchase, capacity, or storage contracts and, accordingly, could have a material adverse effect on AltaGas' business, financial conditions and cash flow.

In addition, Washington Gas and SEMCO must acquire additional interstate pipeline transportation or storage capacity and construct transmission and distribution pipe to deliver additional capacity into growth areas on its system. The specific timing of any larger customer additions to its market may not be forecasted with sufficiently long lead time and the availability of these supply options to serve any of its customer additions may be limited by market supply and demand, the timing of participation in new interstate pipeline construction projects, local permitting requirements, and the ability to acquire necessary rights of way. These limitations could result in an interruption in Washington Gas or SEMCO's ability to satisfy the needs of some of its customers.



## **Volume Throughput**

AltaGas' businesses process, transport, and store natural gas, ethane, NGLs, and other commodities. Throughput within the business is dependent on a number of factors, including the level of exploration and development activity within the WCSB, the long-term supply and demand dynamics for the applicable commodities, and the regulatory and stakeholder environment for market participants. Notably, as a result of the development of non-conventional shale gas supplies in North America, the price of natural gas in North America has declined and there has been a shift towards richer, wet gas with higher NGL content. Areas with dryer gas have seen depressed activity. Countering this impact has been the increase in LNG exports from the U.S. Gulf Coast which has produced a more international gas market where prices in North America are influenced by global trends more directly than before. These factors and industry trends may result in AltaGas being unable to maintain throughput in certain areas. Consequently, AltaGas may be exposed to declining cash flow and profitability arising from reduced natural gas, ethane, and NGL throughput and from rising operating costs.

## **Service Interruptions**

Service interruption incidents that may arise through unexpected major power disruptions to facilities or pipeline systems, third-party negligence or unavailability of critical replacement parts could cause AltaGas to be unable to safely and effectively operate its assets. This could adversely affect AltaGas' business, operations and financial condition.

## **Transportation of Petroleum Products**

AltaGas' operations include transportation by truck and rail of petroleum products, including NGLs, crude oil, and other refined products. NGLs are transported from natural gas producers to RIPET and the Ferndale terminal by rail and truck and are delivered to customers by marine transport. Shipments may be impacted by service delays, inclement weather, rail car availability, rail car derailment, other transport incidents, protests, activist activities, or strikes, and could adversely impact volumes or the price received for product or impact its reputation or result in legal liability, loss of life or personal injury, loss of equipment or property, or environmental damage. Costs for environmental damage, damage to property, and/or personal injury in the event of a transportation incident involving petroleum products have the potential to be significant. Major Canadian railways have adopted standard contract provisions designed to shift liability for third-party claims to shippers. In the event that AltaGas is ultimately held liable for any damages resulting from its activities relating to rail or marine transport of petroleum products, and for which insurance is not available, or increased costs or obligations are imposed on AltaGas as a result of new regulations, AltaGas' business, operations, and financial condition may be adversely impacted. In addition, in instances where transport is not available, AltaGas may not be able to procure substitute transportation and, as a result, may experience an adverse impact on its operations at RIPET, the Ferndale terminal or other assets.

## **Market Risk**

AltaGas is exposed to market risks resulting from fluctuations in commodity prices and interest rates, in both North American markets and, with respect to the export business, offshore markets. In these markets, commodity supply and demand is affected by a number of factors including, without limitation: the significant cost of inflation; the amount of the commodity available to specific market areas either from the wellhead or from storage facilities; demand for product; changing customer preferences and behaviours; prevailing weather patterns; the U.S., Canadian and Asian economies; the occurrence of natural disasters; and pipeline restrictions. In addition, the retail energy marketing business is exposed to pricing of certain ancillary services provided by the power pool in which it operates. The fluctuations in commodity prices are beyond AltaGas' control and, accordingly, could have a material adverse effect on AltaGas' business, financial condition, and cash flow.

## **General Economic Conditions and Inflation**

AltaGas' operations are affected by the condition and overall strength of the global economy and, in particular, the economies of Canada and the U.S. During economic downturns, the demand for the products and services that AltaGas provides and the supply of or demand for power, natural gas, and NGLs may be adversely affected. The occurrence of periods of poor economic conditions or low or negative economic growth could have an adverse impact on AltaGas' results and restrict AltaGas' ability to make dividends to Shareholders.

An inflationary economy over an extended period of time could increase certain operating and capital costs across AltaGas' operating businesses and throughout its supply chains. High inflation rates could also negatively impact AltaGas' key input costs, including labour and materials. Inflationary pressures could also increase the amount of capital that needs to be raised by the Company and the costs of such capital. Governmental action, such as the imposition of higher interest rates or wage controls, may also negatively impact AltaGas' costs and magnify the impacts of other risks identified in this AIF, including those relating to the Company's indebtedness, other financial risks and interest rate risks. Continued inflation, any governmental response thereto, and any corresponding significant increase in costs could adversely affect AltaGas' business, operations or financial results. Economic conditions can affect customers' demand and ability to pay for service, which could adversely affect the Company.

## **Cybersecurity, Information, and Control Systems**

AltaGas' business processes are increasingly reliant upon information systems and automation provided by infrastructure, technologies, and data. A failure of these information systems could lead to the impairment of business processes, and there is a risk of cascading failure of information systems leading to the impairment of multiple business processes. The risk of cyber-attacks is increasing, with strong evidence of the energy industry being specifically targeted. In addition, AltaGas collects and stores sensitive information in the ordinary course of business, including personal information in respect of its employees and proprietary information in respect of its stakeholders, including customers, suppliers, and investors.

The mode, volume, and sophistication of targeted cyber-attacks are increasing by various actors including state sponsored attackers. Work from home arrangements and remote access to the Corporation's systems pose heightened risk of cybersecurity and privacy breaches and may put additional stress on the Corporation's IT infrastructure. A failure of such infrastructure could severely limit AltaGas' ability to conduct ordinary operations. To date, AltaGas' systems have functioned capably, and it has not experienced a material impact to its operations as a result of an IT infrastructure issue.

Security breaches of AltaGas' information technology or operational technology infrastructure, including, without limitation, cyber-attacks and cyber-terrorism, or other failures of AltaGas' information technology and operational technology infrastructure could result in disruptions of natural gas distribution operations and other operational outages, ability to operate safely, delays, damage to assets, the environment or to AltaGas' reputation, diminished customer confidence, lost profits, lost data including, without limitation, the unauthorized release of customer, employee, financial, or company data that is crucial to AltaGas' operational security or could adversely affect the ability to deliver and collect on customer bills, increased regulation and other adverse outcomes, including, without limitation, material legal claims and liability or fines or penalties under applicable laws which adversely affect its business operations and financial results. If any of AltaGas' systems are damaged, fail to function properly, or otherwise become unavailable, AltaGas may incur substantial costs to repair or replace them.

AltaGas relies on third parties and managed service providers for various services. If these third parties undergo cyber-attacks, the services they provide AltaGas could be disrupted. The disruption could interfere with AltaGas' ability to conduct its business, which in turn could negatively affect AltaGas' financial condition and reputation. Additionally, the theft, damage, or improper disclosure of sensitive data held by these third parties may subject AltaGas to adverse consequences.

## Climate-Related Risks

AltaGas may be subject to both physical and transition risks related to climate change.

### Physical Risks

Acute physical risk exposure is associated with the frequency and severity of climate-related physical hazards such as wildfires, floods, and storms which may negatively impact AltaGas' assets, operations or supply chain by causing damages or interruptions that may require AltaGas to perform emergency repairs or incur material unplanned expenses. Extreme weather events may also impact AltaGas' ability to access its assets, cause operational difficulties or increase the risk of injury to employees or contractors as a result of dangerous weather conditions. Chronic climate-related physical risks arise from progressive shifts in climate patterns over the longer-term, such as increasing temperatures, sea level rise and changes in precipitation that may adversely impact AltaGas' assets, operations or supply chain or lower aggregate customer demand from affected markets. Any long-term physical climate-related impacts may have a material adverse effect on the business of the Company, its reputation, financial condition, results of operations and cash flows.

### Transition Risks

Climate-related transition risks arise as the global economy shifts to reduce GHG emissions and lower its impact on the environment. The pace and magnitude of climate change and associated impact on AltaGas' businesses varies in each operating jurisdiction. AltaGas is exposed to climate-related policy, market, technology, reputational and legal risks associated with the global transition to a lower carbon economy.

#### i. Climate-Related Legislation, Regulation and Policy

AltaGas' facilities and operations are, and may become subject to, current and emerging local, provincial, state, federal and international climate change legislation, regulation and policies designed to manage or limit GHG emissions or restrict natural gas usage. Carbon taxes, levies and various carbon abatement programs, among other legislation, regulation and policies, are active or may become active across some or all of AltaGas' operating areas and the scope, pricing and compliance requirements under these programs may continue to increase. The direct or indirect costs and obligations imposed on AltaGas and its customers to comply with these regulations, including carbon pricing regimes, may have a material adverse effect on AltaGas' business, financial condition or results of operations.

Additionally, AltaGas may become subject to emerging climate-related reporting requirements, including GHG emissions reporting, that could introduce mandatory disclosure for reporting issuers, and/or other entities if implemented. Reporting requirements governed by legislation and regulation in the jurisdictions where AltaGas operates could also impact AltaGas' disclosure requirements if broadly adopted by peer companies or required by stakeholders such as investors, credit agencies and lenders. These disclosure requirements, whether mandatory or voluntary, may also require significant investments in data collection, monitoring, reporting and verification, including in respect of data generated by third parties, and high quality data may not always be available. The direct or indirect cost of compliance with these climate-related reporting requirements, the inability to meet future regulatory reporting requirements, unexpected changes in reporting requirements and methodologies, the inability to collect comprehensive and high quality data or the current and future expectations of stakeholders, including investors, may adversely affect the Company's reputation, financial condition, ability to obtain regulatory permits or approvals and raise capital.

ii. Climate-Related Market Risk

AltaGas is exposed to market risks, including as a result of fluctuations in commodity prices, consumer preferences, foreign exchange rates and interest rates. Increased commodity prices or other market factors such as inflation could have a negative impact on customer affordability which, in turn, may reduce demand for AltaGas' natural gas products. Higher natural gas prices result in increased direct costs for AltaGas' utility businesses which, in turn, impacts the price customers pay. The increased costs may impact customer decisions in the short-term and reduce the amount of natural gas used. Over the longer-term, increased commodity prices may result in customers switching from natural gas to alternative energy sources, negatively impacting the long-term demand for AltaGas' services. Sustained long-term increases in commodity prices could shift customer behavior and encourage the transition away from natural gas to alternative energy sources. Such increases could also materially increase the costs of materials required for AltaGas to operate its business.

Changing customer preferences towards lower-carbon energy sources may reduce the demand for AltaGas' product and services over the longer-term. Government incentives and regulatory requirements to transition energy usage towards lower-carbon or alternative energy sources, such as electrification or renewable or low carbon fuels, may also impact the long-term purchasing behaviors of AltaGas' customers and adversely impact the demand for the Company's services.

iii. Climate-Related Technology Risk

Technology advancements and improvements may impact the pace of GHG emission reduction strategies that could affect AltaGas and its customers. Changes in energy consumption by customers as a result of the availability of and incentive to invest in energy efficient technologies have the potential to reduce customer demand and adversely impact AltaGas' business.

Emerging technologies that may be deployed in connection with GHG emission reduction strategies include the use of co-generation facilities, acid gas injection, carbon capture and storage, advanced leak detection and methane capture technologies. The cost to acquire and implement technology required to reduce the carbon intensity of AltaGas' assets and operations, and the availability of that technology in the future, is difficult to predict given the uncertainty and pace of change with respect to advancements in emerging technologies. Increasing costs to acquire or implement technologies, or an inability to procure and deploy such technologies, could negatively impact AltaGas' capital spending, operating costs or impact the rate of return on new projects.

iv. Climate-Related Reputational Risk

With increased public scrutiny of the energy industry related to climate change and reducing environmental impact, increasing public opposition to the energy industry may impact AltaGas' business and its reputation could become unfavorable. As governments and regulatory bodies increasingly focus on mitigating the risks associated with global climate change, there is reputational risk associated with AltaGas' ability to meet potential increasingly stringent regulatory requirements, achieve its emissions reduction targets and meet the expectation of its stakeholders. Climate-related reputational risk cannot be managed in isolation from other forms of climate-related risks.

Additionally, with the increased public focus on climate change and support for the energy transition, the energy industry is exposed to the risk of increased activism related to the continued processing, transportation and distribution of oil and natural gas products, even where such activities are conducted in compliance with applicable laws. Activism in the form of protests, demonstrations or blockades could result in temporary disruptions to AltaGas' operations. AltaGas may also be subject to opposition from special interest groups resulting in regulatory process delays, which can impact schedules and increase costs. Furthermore, activism may impact AltaGas' ability to obtain or maintain permits and regulatory approvals or negatively impact the anticipated timing and costs associated with capital projects.

Damage to AltaGas' reputation could result in negative investor sentiment towards the Company and could limit its ability to access capital or decrease the price and liquidity of AltaGas' shares.

v. Climate-Related Legal Risk

The energy sector has seen an increase in climate-related litigation in recent years from environmental groups, community members and shareholders. As such, in the course of its business, AltaGas may be subject to lawsuits and other claims related to GHG emissions, climate-related impacts of AltaGas' products and services, or the Company's climate-related commitments. In addition, AltaGas may be required to obtain legal or regulatory approval on projects from regulators or stakeholders in order to conduct its business, which may become the subject of legal proceedings seeking to overturn such approvals. Costs associated with the resolution of any climate-related legal proceedings, even with respect to claims that have no merit, or failure to obtain required approvals could result in delays or cancellation of projects, adversely impacting the financial position or operating results of the Company.

### **Environmental Regulation**

AltaGas is also subject to and may become subject to current and emerging environmental regulations beyond climate-related regulations. These regulations may apply to AltaGas' water usage, waste handling and disposal, air emissions, land use and other potential environmental-related impacts. AltaGas faces uncertainties related to future environmental laws and regulations affecting its business and operations. Existing environmental laws and regulations may be revised or interpreted more strictly, and new laws or regulations may be adopted or become applicable to AltaGas, which may result in increased compliance costs or additional operating restrictions, each of which could reduce AltaGas' earnings and adversely affect AltaGas' business. Compliance with these regulations could significantly increase capital spending, operating expenses, facility downtime or impact the affordability of rates charged to customers.

The Midstream and Utilities segments are subject to environmental regulation pursuant to local, provincial, state, territorial, and federal legislation. Environmental legislation places restrictions and prohibitions on land and water use as well as on various substances discharged to the air, land, and water in association with certain Utilities and Midstream operations. AltaGas' operations are required to obtain and comply with a variety of environmental licenses, permits, approvals, and registrations. In addition to the license and permit requirements, provincial, state, territorial, and federal legislation may require that end of life assets be abandoned, remediated, and reclaimed to the satisfaction of provincial, state, federal, or territorial authorities. Failure to comply with applicable environmental legislation can result in civil or criminal penalties, environmental contamination clean-up requirements, and government orders affecting future operations. It is possible that increasingly strict environmental laws, regulations, and enforcement policies, and potential claims for damages and injuries to property, employees, other persons, and the environment resulting from current or discontinued operations, could result in substantial costs and liabilities in the future. Environmental risks from AltaGas' operations can typically include, but are not limited to: air emissions, such as sulphur dioxide, nitrogen oxides, particulate matter and greenhouse gases; potential impacts on land; the use, storage, or release of chemicals or hydrocarbons; the generation, handling, and disposal of wastes and hazardous wastes; and water impacts.

See sections "Environmental, Social and Governance", "Business of the Corporation – Utilities Business – Environmental Considerations Impacting the Utilities Business", "Business of the Corporation – Midstream Business – Environmental Considerations Impacting the Midstream Business", "Business of the Corporation – Corporate/Other Segment – Environmental Considerations Impacting the Corporate/Other Segment" of this AIF.

### **Regulatory Approvals**

Many of our operations are regulated and failure to secure timely regulatory approval for our proposed projects, or loss of required approvals for our existing operations, could have a negative impact on our business, operations or financial results. The nature and degree of regulation and legislation affecting permitting and environmental review for energy

infrastructure companies in Canada and the US continues to evolve. Changes in the regulatory environment may be beyond AltaGas' control and may significantly affect AltaGas' businesses, results of operations, and financial conditions. Pipelines and facilities can be subject to common carrier and common processor applications and to rate setting by the regulatory authorities in the event an agreement on fees or tariffs cannot be reached with producers. The export and import of energy is also subject to regulatory approvals. Power facilities are subject to regulatory approvals and regulatory changes in tariffs, market structure, and penalties. Washington Gas and SEMCO operate in regulated marketplaces where regulatory approval is required to afford the utilities the opportunity to earn their regulated returns that provide for recovery of costs and a return on capital and may limit the ability to make and implement independent management decisions, including, without limitation, setting rates charged to customers, determining methods of cost recovery, and issuing debt. Earnings of AltaGas' regulated utilities may be impacted by a number of factors, including, without limitation, (i) changes in the regulator-approved allowed return on equity and common equity component of capital structure; (ii) changes in rate base; (iii) changes in gas delivery volumes; (iv) changes in the number and composition of customers; (v) variances between actual expenses incurred and forecast expenses used to determine revenue requirements and set customer rates; and (vi) recovery of unplanned costs through rate cases. Changes to regulations could increase AltaGas' operating costs and require enhanced disclosures. Increased expenditures could include capital expenditures, operating expenditures, and decommissioning, abandonment, and reclamation costs, which may not be recoverable in the marketplace or through rate cases. These changes could adversely affect AltaGas, resulting in current operations and projects becoming less profitable or uneconomic and could require significant investment to develop new technologies.

### **Changes in Laws and Regulations**

AltaGas' businesses are subject to extensive and complex laws and regulations in the jurisdictions in which they carry on business. Regulations and laws are subject to ongoing policy initiatives, and AltaGas cannot definitively predict the future course of regulations. Applicable laws, including, without limitation, international trade laws and tariffs, environmental laws, policies, or government incentive programs may be changed in a manner that adversely affects AltaGas through the imposition of restrictions on its business activities or by the introduction of regulations that increase AltaGas' operating costs. There can be no assurance that applicable laws, policies, or government incentive programs relating to energy infrastructure will not be changed in a manner which adversely affects AltaGas.

Income tax laws relating to AltaGas may be changed in a manner that adversely affects its shareholders. This includes, without limitation, taxation and tax policy changes, tax rate changes, new tax laws, and revised tax law interpretations that may individually or collectively cause an increase in AltaGas' effective tax rate.

AltaGas may face regulatory and financial risks related to pipeline safety legislation seeking to require increased oversight over pipeline operations and increased investment in and inspections of pipeline. Additional operating expenses and capital expenditures may be necessary to remain in compliance with the increased federal oversight resulting from such proposals. While AltaGas cannot predict with certainty the extent of these expenses and expenditures or when they will become effective, the adoption of such proposals could result in significant additional costs to AltaGas' businesses. AltaGas' utilities may be unable to recover from customers through the regulatory process all or some of these costs which could impact the ability to earn its authorized rate of return on these costs.

### **Litigation**

In the course of its business, AltaGas is subject to lawsuits and other claims. Defense and settlement costs associated with such lawsuits and claims can be substantial, even with respect to lawsuits and claims that have no merit. Due to the inherent uncertainty of the litigation process, the resolution of any particular legal proceeding could have a material adverse effect on the financial position or operating results of AltaGas.

## Indigenous and Treaty Rights

Indigenous peoples assert and claim, or have established, Aboriginal and/or Treaty rights and/or Aboriginal title in relation to a substantial portion of the lands and waters in Canada and the United States. Governments in Canada have a duty to consult with and, where appropriate, accommodate Indigenous peoples where the rights of Indigenous peoples may be affected by a government action or decision. AltaGas respectfully develops and operates in territories in which Indigenous groups have established and claimed Aboriginal and/or Treaty rights. Asserted claims, if successful, could have an impact on natural gas production, the development of natural gas and NGL extraction projects in Alberta and British Columbia, and the operations of RIPET in British Columbia and the Ferndale terminal in Washington State. The potential impacts of such matters could have a materially adverse effect on AltaGas' business and operations, including the volume of natural gas processed at AltaGas' facilities, and the operation or development of facilities for gathering and processing, energy exports, natural gas distribution, storage, power generation, or extraction and transmission.

It is uncertain to what extent, whether positive or adverse, the claims of Indigenous groups will affect AltaGas' ability to conduct its business and operations as currently undertaken or as may be undertaken in the future in such regions. Additionally, any failure of AltaGas to reach an agreement, seek alignment in interests, or resolve any conflict or disagreement that may arise with an Indigenous group could have a material adverse effect on AltaGas' business, financial condition, and results of operations.

The BRFN Implementation Agreement responds to the British Columbia Supreme Court ruling in June 2021 of *Yahey vs. British Columbia* which found that British Columbia had infringed upon BRFN's Treaty 8 rights due to the cumulative impacts of decades of industrial development which B.C. had authorized. The BRFN Implementation Agreement, signed on January 18, 2023, sets out a new approach to land, water, and resource-based decision making and stewardship that has the aim of ensuring that BRFN members can meaningfully exercise their Treaty 8 rights, while providing stability and predictability for industry. Effective June 30, 2023, a new consultation process for BRFN has provided clarity to a proponent of the engagement requirements in the BRFN claim area by requiring pre-application engagement with BRFN including identifying acceptable locations for oil and gas activities, ensuring these activities are consistent with land use plans that identify areas for protection, and the conditions under which new development may occur. AltaGas operates natural gas processing facilities in the Treaty 8 area located in B.C., and requires continued volumes of natural gas production in this region in order to grow and sustain these developments.

Halfway River First Nation and Doig River First Nation have filed petitions in respect of the BRFN Implementation Agreement with the Province of British Columbia on September 22, 2023 and October 5, 2023, respectively. The petitions seek recognition that British Columbia still owes them a duty to consult and, if necessary, accommodate, with respect to its decision to enter into the BRFN Implementation Agreement. The petitions do not seek to invalidate the whole BRFN Implementation Agreement. The Halfway River First Nation and Doig River First Nation court petitions, if successful, may potentially impact AltaGas' operations within the Treaty 8 area through reduced regulatory certainty provided by the BRFN Implementation Agreement, however, the extent of the impact, whether positive or adverse, on AltaGas' operations is unknown at this time.

On September 7, 2022, Duncan's First Nation initiated a claim with the Court of Queen's Bench of Alberta alleging that the cumulative effects of development activity have breached Alberta's obligations to Duncan's First Nation under Treaty 8. A ruling has not been made regarding the claim, however, a successful claim would require a re-examination of the regulatory processes governing land use and project approval to incorporate cumulative effect analysis. AltaGas operates natural gas processing facilities in the Treaty 8 area located in Alberta. AltaGas cannot predict the outcomes of any ruling in this claim or the potential impacts of any ruling on AltaGas' operations.

In addition, in May 2008, the Beaver Lake Cree Nation filed a lawsuit in Alberta against the Governments of Alberta and Canada alleging that the cumulative effects from oil, gas, forestry and mining activities violate the Beaver Lake Cree Nation's Treaty 6 rights to hunt and fish. Based on the location of AltaGas' facilities and operations outside the Treaty 6

area, the ultimate decision is not currently expected to directly impact AltaGas. However, any decision, or the Government of Alberta's response to same, may have an indirect impact on other areas of Alberta where AltaGas does have facilities and operations.

### **Dependence on Certain Partners**

AltaGas co-owns certain facilities with joint venture partners. Failure by the operators of these facilities to operate at the cost or in the manner projected by AltaGas could negatively affect AltaGas' results. In addition, for non-wholly owned subsidiaries, AltaGas relies on other investors to fulfill their commitments and obligations in respect of the project or facility. AltaGas has entered into various types of arrangements with joint venture partners for any or all of the construction, operation or ownership of certain facilities. Certain of these partners may have or develop interests or objectives which are different from or even in conflict with the objectives of AltaGas. AltaGas does not have the sole power to direct the business and operations of such facilities and AltaGas faces the risk of being impacted by partners' decisions and by potential disagreements regarding operations and other business decisions. Any such differences could have a negative impact on the success of such facilities.

### **Political Uncertainty, Activism, Civil Unrest, Terrorist Attacks and Threats, Escalation of Military Activity in Response to these Attacks, Acts of War**

Uncertainty exists with regard to the political climate in the jurisdictions where AltaGas operates. Changes in social, political, regulatory, or economic conditions, or in laws and policies governing environment, development, tax, foreign trade, investment or energy could materially adversely affect AltaGas' business and operations.

Public activism has increased against activities involving fossil fuels and could potentially result in work delays, reduced demand for AltaGas' products and services, increased legislation or denial or delay of permits and rights-of-way. In addition, there have been significant incidents of civil unrest in areas where AltaGas operates. To the extent that civil unrest is accompanied by disruption to transportation routes, damage to infrastructure, violence or destruction, AltaGas' personnel, physical facilities, and operations may be placed at risk and financial and operational results may be adversely impacted.

Terrorist attacks and threats, escalation of military activity or acts of war, or other civil unrest or activism may have significant effects on general economic conditions and may cause fluctuations in consumer confidence and spending and market liquidity, each of which could adversely affect AltaGas' business. Future terrorist attacks, tensions between states, threats of war, acts of war including conflicts involving the US or Canada, or military or trade disruptions may significantly affect AltaGas' operations and those of its customers. Strategic targets, such as energy related assets, may be at greater risk of future attacks than other targets in the US and Canada. Finally, the disruption or a significant increase in energy prices could result in government-imposed price controls. It is possible that any of these occurrences, or a combination of them, could adversely affect AltaGas' business, operations or financial results.

International conflicts also have the potential to adversely affect AltaGas' business, operations and results. For example, in February 2022, Russia sent troops into pro-Russian separatist regions in Ukraine. Ongoing military tension between Russia and Ukraine have the potential to threaten supply of oil and gas from the region and demand from other European countries as well as the possibility that other nations will impose certain tariffs and restrictions on oil from Russia. In addition, conflict and political uncertainty continues to progress in the Middle East, including the ongoing military conflict in Israel, the West Bank and Gaza Strip, as well as conflicts in other countries in the Middle East. While AltaGas' operations have not been, and are unlikely to be, directly impacted by them, the current conflicts between Ukraine and Russia and the Middle East, and the international response to them has, and may continue to have, potential wide-ranging consequences for global market volatility and economic conditions, including energy and commodity prices, which may, in turn, increase inflationary pressures and interest rates. Certain countries, including Canada and the United States, have imposed strict financial and trade sanctions against Russia, which have, and may continue to have, far-reaching effects on



the global economy and energy and commodity prices. The short-, medium- and long-term implications of the conflicts in Ukraine and the Middle East are difficult to predict with any certainty at this time. There remains uncertainty relating to the potential direct and indirect impact of the conflicts on AltaGas, and they could have a material and adverse effect on AltaGas' business, financial condition and results of operations. Depending on the extent, duration, and severity of the conflicts, they may have the effect of heightening many of the other risks described in this AIF.

## **Decommissioning, Abandonment, and Reclamation Costs**

AltaGas is responsible for compliance with all applicable laws and regulations regarding the decommissioning, abandonment and reclamation of its facilities at the end of their economic life, the costs of which may be substantial. It is not possible to predict these costs with certainty since they are a function of regulatory requirements at the time of decommissioning, abandonment and reclamation and the actual costs may exceed current estimates which are the basis of the asset retirement obligation shown in AltaGas' financial statements. In particular, management has identified environmental issues associated with the prior activities of Harmattan and the Utilities. There are indications of significant groundwater and soil contamination resulting from Harmattan's prior activities. There is a risk that the costs of addressing these environmental issues could be significant.

As well, Washington Gas has recorded environmental liabilities for costs expected to be incurred to remediate sites where Washington Gas or a predecessor affiliate operated manufactured gas plants. Estimates of liabilities for environmental response costs are difficult to determine with precision because of the various factors, including the likely effects of inflation, that can affect their ultimate level. See the section "Business of the Corporation – Utilities Business – Environmental Considerations Impacting the Utilities Business".

## **Reputation**

AltaGas places great importance on establishing and maintaining positive relationships with its stakeholders, including, without limitation, within the communities in which AltaGas operates, regulators, and local Indigenous peoples. There is an increasing level of public concern and scrutiny relating to the perceived effect of natural resources activities, including, without limitation: exploration, development, production, processing, and transportation; on certain environmental and social aspects such as overall environmental performance, emissions, air and water quality, noise, dust, land, and ecological disturbance; and employment and economic development opportunities. Opposition to natural resources activities by communities, special interest groups (including non-governmental organizations), or Indigenous peoples may ultimately impact AltaGas, including its ability to obtain or maintain permits, the anticipated timing and costs associated with capital projects, its operations, shareholder confidence, and its reputation. Recent and proposed regulatory changes could increase the ability of special interest groups to object to and/or delay certain capital projects. See "Changes in Laws" above. Publicity adverse to AltaGas' operations, AltaGas' partners, or others operating in the energy industry generally, could have an adverse effect on AltaGas and its operations. While AltaGas is committed to operating in a socially responsible manner, there can be no assurance that its efforts in this respect will mitigate this potential risk.

## **Weather Data**

The utilities and natural gas distribution business is highly seasonal, with the majority of natural gas demand occurring during the winter heating season, the length of which varies in each jurisdiction in which AltaGas' utilities operate. Natural gas distribution revenue during the winter typically accounts for the largest share of annual revenue in the Utilities business. There can be no assurance that the long-term historical weather patterns will remain unchanged. Annual and seasonal deviations from the long-term average can be significant. In Maryland and Virginia, Washington Gas has in place regulatory mechanisms and rate designs intended to stabilize the level of net revenues that it collects from customers by eliminating the effect of deviations in customer usage caused by variations in weather from normal levels and other factors such as conservation. If Washington Gas' rates and tariffs are modified to eliminate these provisions, then Washington Gas would be exposed to significant risk associated with weather.

The operations of AltaGas' retail energy-marketing business are weather sensitive and seasonal, with a significant portion of revenues derived from the sale of natural gas to retail customers for space heating during the winter months, and from the sale of electricity to retail customers for cooling during the summer months. Weather conditions directly influence the volume of natural gas and electricity delivered to customers. Weather conditions can also affect the short-term pricing of energy supplies that the retail energy-marketing business may need to procure to meet the needs of its customers. Similarly, AltaGas' Midstream business is seasonal due to the tendency of storage and transportation spreads to increase during the winter. Deviations from normal weather conditions and the seasonal nature of these businesses can create large fluctuations in short-term cash requirements and earnings for these businesses.

## **Capital Market and Liquidity Risks**

AltaGas may have restricted access to capital and increased borrowing costs. As AltaGas' future capital expenditures will be financed out of cash generated from operations, borrowings, and possible future equity sales, AltaGas' ability to finance such expenditures is dependent on, among other factors, the overall state of capital markets and investor demand for investments in the energy industry generally and AltaGas' securities in particular.

To the extent that external sources of capital become unavailable or available on onerous terms or otherwise limited, AltaGas' ability to make capital investments and maintain existing assets may be impaired, and its assets, liabilities, business, financial condition, results of operations, and dividends may be materially and adversely affected as a result.

If cash flow from operations is lower than expected or capital costs for these projects exceed current estimates, or if AltaGas incurs major unanticipated expenses related to construction, development, or maintenance of its existing assets, AltaGas may be required to seek additional capital to maintain its capital expenditures at planned levels. Failure to obtain financing necessary for AltaGas' capital expenditure plans may result in a delay in AltaGas' capital program or a decrease in dividends.

Washington Gas and the SPE made certain ring-fencing commitments, such that the assets of the Ring-Fenced Entities will not be available to satisfy the debt or contractual obligations of any Non-Ring-Fenced Entity.

## **Interest Rates**

AltaGas is exposed to interest rate fluctuations on variable rate debt. Interest rates are influenced by Canadian, U.S., and global economic conditions beyond AltaGas' control and, accordingly, could have a material adverse effect on AltaGas' business, financial condition and cash flow.

## **Internal Credit Risk**

Credit ratings affect AltaGas' ability to obtain short-term and long-term financing and the cost of such financing. Additionally, the ability of AltaGas to engage in ordinary course derivative or hedging transactions and maintain ordinary course contracts with customers and suppliers on acceptable terms depends on AltaGas' credit ratings.

A reduction in the current rating on AltaGas' debt by one or more of its rating agencies below an investment grade rating would adversely affect AltaGas' cost of financing and its access to sources of liquidity and capital.

In addition, a downgrade in AltaGas' credit ratings may affect AltaGas' ability to, and the associated costs to, (i) enter into ordinary course derivative or hedging transactions and may require AltaGas to post additional collateral under certain of its contracts, and (ii) enter into and maintain ordinary course contracts with customers and suppliers on acceptable terms.

Additionally, with respect to WGL, a reduction in credit rating could lead to higher borrowing costs. Merger-related commitments placed limitations on Washington Gas' ability to recover increased costs of financing from customers if caused by the ongoing affiliation of AltaGas and its affiliates. Therefore, a downgrade in AltaGas' or WGL's credit ratings could adversely affect earnings or cash flows by limiting Washington Gas' ability to earn its allowed rate of return. Credit ratings are intended to provide investors with an independent measure of credit quality of any issuer of securities. The credit ratings assigned to AltaGas' securities by the rating agencies are not recommendations to purchase, hold, or sell the securities in as much as such ratings do not comment as to market price or suitability for a particular investor. Any rating may not remain in effect for any given period of time or may be revised or withdrawn entirely by a rating agency in the future if in its judgment circumstances so warrant.

## **Foreign Exchange Risk**

AltaGas' functional currency is the Canadian dollar. AltaGas is exposed to foreign exchange risk through its investments in the U.S. and is exposed to foreign exchange risk through its export business. Changes in the Canadian dollar/U.S. dollar exchange rate could impact the earnings of AltaGas, the value of the U.S. investments, and the cash generated from the U.S. businesses. AltaGas operates internationally, with an increasing amount of the Corporation's net income earned outside of Canada. As a result, AltaGas may experience a discrepancy between the currencies in which liabilities are incurred and the currency in which revenues are generated. This could adversely affect AltaGas' results due to the imposition of additional taxes and cost of currency exchange.

## **Debt Financing, Refinancing, and Debt Service**

AltaGas relies on debt financing for some of its business activities, including capital and operating expenditures. The credit facilities, long-term senior unsecured notes, and subordinated hybrid notes have defined terms and there are no assurances that AltaGas will be able to refinance any or all of the borrowings at their maturity. In addition, there are no assurances that AltaGas will be able to comply at all times with the covenants applicable under its current borrowings, nor are there assurances that AltaGas will be able to secure new financing that may be necessary to finance its operations and capital growth program. Any failure of AltaGas to secure refinancing, to obtain new financing, or to comply with applicable covenants under its borrowings could have a material adverse effect on AltaGas' financial results, including its ability to maintain dividends to Shareholders. Further, any inability of AltaGas to obtain new financing may limit its ability to support future growth.

Borrowings or additional borrowings made by or on behalf of AltaGas will affect the leverage of the business. Interest and principal payments on such borrowings will take precedence over cash dividends and may increase the level of financial risk in the operations of AltaGas. AltaGas' debt prohibits the payment of dividends at any time at which a default or event of default would exist under such debt, or if a default or event of default would exist as a result of paying a dividend.

If AltaGas is unable to refinance debt obligations at the time of maturity or is unable to refinance on equally favourable terms, the level of cash dividends to Shareholders may be affected. Details regarding the maturity dates of debt facilities can be found in Notes 14, 15, and 16 of AltaGas' audited Consolidated Financial Statements as at and for the year ended December 31, 2023.

AltaGas believes that the existing credit facilities will be sufficient for its immediate requirements and has no reason to believe that it will not be able to renew its existing credit facilities or refinance its long-term senior unsecured notes and subordinated hybrid notes on commercially reasonable terms. However, continued uncertainty in the global economic situation means AltaGas, along with other energy companies, may have restricted access to capital and increased borrowing costs. AltaGas' ability to raise debt is dependent upon, among other factors, the overall state of the capital markets, the quality of AltaGas' credit ratings, and investor appetite for investments in the energy industry and AltaGas' securities in particular. The ability to make scheduled payments on or to refinance debt obligations depends on the financial condition and operating performance of AltaGas, which is subject to prevailing economic and competitive

conditions and to certain financial, business, and other factors beyond its control. As a result, AltaGas may be unable to maintain a level of cash flow from operations sufficient to permit it to pay the principal, premium, if any, and interest on its indebtedness. These conditions could have an adverse effect on the industry in which AltaGas operates and its business, including future operating and financial results. There can be no assurance that AltaGas' cash flow will be adequate for future financial obligations or that additional funds will be able to be obtained.

### **Counterparty and Supplier risk**

Significant delays and disruption in global supply chains may lead to a shortage of available products and higher prices. To the extent AltaGas is unable to secure products required for its operations at acceptable pricing or at all, it may result in delays in planned operational activities and higher costs of doing business. AltaGas could also face increased exposure that contract counterparties could fail to meet their obligations to AltaGas. Such non-performance by a significant counterparty could adversely affect AltaGas' operations and financial results.

### **Technical Systems and Processes Incidents**

Failure of key technical systems and processes to effectively support information requirements and business processes may lead to AltaGas' inability to effectively and efficiently measure, record, access, analyze, and accurately report key data. This could result in increased costs and missed business opportunities.

### **Growth Strategy Risk**

It is possible that the strategy AltaGas has implemented and plans to continue implementing in 2024 and onwards will not be as successful as projected. A failure to fully realize the anticipated benefits of AltaGas' strategy could have a negative impact on AltaGas' results, including causing the failure to achieve all or any targets provided in its financial guidance.

### **Failure to Realize Anticipated Benefits of Acquisitions and Dispositions**

AltaGas considers acquisitions and dispositions of businesses and assets in the ordinary course of business; however, the anticipated benefits of acquisitions may not be achieved and AltaGas may dispose of certain non-core assets for less than their carrying value on the financial statements as a result of weak market conditions. Achieving the benefits of acquisitions depends on successfully consolidating functions and integrating operations and procedures in a timely and efficient manner and AltaGas' ability to realize the anticipated growth opportunities and synergies from combining the acquired businesses and operations with those of AltaGas. The integration of acquired businesses and assets may require substantial management effort, time and resources diverting management's focus from other strategic opportunities and operational matters. Management continually assesses the value and contribution of services provided by third parties and resources required to provide such services. In this regard, non-core assets may be periodically disposed of so AltaGas can focus its efforts and resources more efficiently. Depending on the market conditions for such non-core assets, certain non-core assets of AltaGas may realize less on disposition than their carrying value on the financial statements of AltaGas.

### **Construction and Development**

The construction and development of AltaGas' projects and their future operations are subject to changes in the policies and laws of both Canadian and U.S. federal, provincial, state, and local governments, including, without limitation, regulatory approvals and regulations relating to the environment, land use, health, culture, conflicts of interest with other parties, and other matters beyond the direct control of AltaGas.

Completion of capital projects are subject to various regulatory, operational and market risks, which may affect our ability to drive long-term growth. Risk factors impacting project execution include timing of regulatory and environmental permit

applications, inflationary pressures on materials and labor, challenges with global supply chains which can create unpredictability in materials cost and availability, and labor shortages and union strikes which can increase costs of engineering and construction services. Other events that can and have delayed project completion and increased anticipated costs include contractor or supplier non-performance, extreme weather events or geological factors beyond AltaGas' control.

The construction of AltaGas' pipeline assets has experienced and may continue to experience legislative and regulatory obstacles, and the construction and operation of these assets are subject to hazards, equipment failures, supply chain disruptions, personnel issues, and related risks, which could result in decreased values of these investments, including impairments, and/or delays to their in-service dates, which would negatively affect results of operations. For instance, AltaGas is required to test certain assets for impairment on either an annual basis or when events or circumstances occur which indicate that the carrying value of such assets might be impaired. That testing might result in the impairment of assets, including goodwill, property, plant and equipment, intangible assets, or certain investments.

Because these assets are interconnected with facilities of third parties, the operation of these facilities could also be adversely affected by unexpected or uncontrollable events occurring on the systems of such third parties. These events could further delay the in-service date of AltaGas' projects or disrupt operations on these projects, which could have an adverse effect on AltaGas' financial results.

### **Underinsured and Uninsured Losses**

There can be no assurance that AltaGas will be able to obtain or maintain adequate insurance coverage at all or at rates it considers reasonable. Further, there can be no assurance that available insurance will cover all losses or liabilities that might arise in the conduct of AltaGas' business. The occurrence of a significant uninsured claim, a claim in excess of the insurance coverage limits maintained by AltaGas, or a claim that falls within a significant self-insured retention could have a material adverse effect on AltaGas' business or its results. Further, significant insured claims could lead to an increased cost of operating and insuring AltaGas' assets in the future.

### **Impact of Competition in AltaGas' Businesses**

AltaGas faces strong competition in its Retail Energy Marketing business. It competes with other non-regulated retail suppliers of natural gas and electricity, as well as with the commodity rate offerings of electric and gas utilities. Increases in competition, including utility commodity rate offers that are below prevailing market rates, may result in a loss of sales volumes or a reduction in growth opportunities. AltaGas' Midstream business competes with other midstream infrastructure and energy services companies, wholesale energy suppliers, and other non-utility affiliates of regulated utilities to acquire natural gas storage and transportation assets. AltaGas' Corporate/Other segment faces many competitors in the commercial energy systems business, including, for government customers, companies that contract with customers under Energy Savings Performance Contracting and other utilities providing services under UESC and, in the renewable energy market, other developers, tax equity investors, distributed generation asset owner firms and lending institutions. These competitors may have diversified energy platforms with multiple marketing approaches, broader geographic coverage, greater access to credit and other financial resources, or lower cost structures, and may make strategic acquisitions or establish alliances among themselves. There can be no assurances that AltaGas can compete successfully, and its failure to do so could have an adverse impact on AltaGas' results of operations and cash flow.

### **Counterparty Credit Risk**

AltaGas is exposed to credit-related losses in the event that counterparties to contracts fail to fulfill their present or future obligations to AltaGas. AltaGas has credit risk relating to, among others, counterparties to the sale, purchase, and delivery of commodity, transportation capacity, energy system design and construction, investment terms, as well as long-term contracts including PPAs, EPAs, and take-or-pay agreements. While the majority of AltaGas' counterparties are of

investment grade quality, AltaGas can provide no assurance as to whether the credit quality of its counterparties will remain at current levels or decline. In addition, for non-wholly owned subsidiaries, AltaGas relies on other investors to fulfill their commitments and obligations in respect of the project or facility. In the event such entities fail to meet their contractual obligations to AltaGas, such failures may have a material adverse effect on AltaGas' business, financial condition, results of operations, and prospects.

## **Composition Risk**

The extraction business is influenced by the composition of natural gas produced in the WCSB and processed at AltaGas' facilities. The composition of the gas stream has the potential to vary over time due to factors such as the level of processing done at plants upstream of AltaGas' facilities and the composition of the natural gas produced from reservoirs upstream of AltaGas' facilities.

## **Collateral**

AltaGas is able to obtain unsecured credit limits from its counterparties in order to procure natural gas and NGL supply and services for its energy services business. If counterparties' credit exposure to AltaGas exceeds the unsecured credit limits granted, AltaGas may have to provide collateral such as letters of credit.

## **Rep Agreements**

If AltaGas becomes insolvent or is in material default under the terms of the Rep Agreements for an extended period, effective ownership of the natural gas processing plant within Harmattan can be claimed by the original Harmattan owners for a nominal fee. Accordingly, under these circumstances, AltaGas could lose its investment in the natural gas processing plant, excluding the facilities that are owned 100 percent by AltaGas.

## **Market Value of Common Shares and Other Securities**

AltaGas cannot predict at what price the Common Shares, Preferred Shares, or other securities issued by AltaGas will trade in the future. Common Shares, Preferred Shares, and other securities of AltaGas will not necessarily trade at values determined solely by reference to the underlying value of the Corporation's assets. One of the factors that may influence the market price of such securities is the annual yield on such securities. An increase in market interest rates may lead purchasers of securities of AltaGas to demand a higher annual yield and this could adversely affect the market price of such securities. In addition, the market price for securities of AltaGas may be affected by announcements of new developments, changes in AltaGas' operating results, differences between results and analysts' expectations, changes in credit ratings, changes in general market conditions, fluctuations in the market for securities, and numerous other factors beyond the control of AltaGas.

## **Variability of Dividends**

The declaration and payment of dividends on Common Shares by AltaGas are at the discretion of the Board of Directors. The cash available for dividends to Shareholders is a function of numerous factors, including, without limitation, AltaGas' financial performance, the impact of interest rates, electricity prices, natural gas, NGL, LNG and LPG prices, debt covenants and obligations, working capital requirements, liquidity, and future capital requirements. Dividends may be reduced or suspended entirely depending on the operations of AltaGas and the performance of its assets. The market value of AltaGas' shares may deteriorate if AltaGas is unable to meet or otherwise chooses to modify its dividend targets, and that deterioration may be material.

## **Potential Sales of Additional Shares**

AltaGas may issue additional shares in the future to directly or indirectly fund, among other things, capital expenditure requirements of entities now or hereafter owned directly or indirectly by AltaGas, including financing acquisitions by those entities. Such additional shares may be issued without the approval of Shareholders. Shareholders will have no pre-emptive rights in connection with such additional issuances. The Board of Directors has discretion in connection with the price and the other terms of the issue of such additional shares. Any issuance of Common Shares or securities convertible into Common Shares may have a dilutive effect on existing Shareholders.

## **Labor Relations**

The operations and maintenance staff at the Blythe Energy Center and Younger, as well as some employees of Washington Gas and SEMCO Energy, are members of a labor union. Aspects of operations at both RIPET and the Ferndale terminal are also performed by employees that are members of a labor union. Also, other employee groups may organize to form labor unions within AltaGas' operating entities in the future. Labor disruptions could restrict AltaGas' operations including the ability of the Blythe Energy Center to generate power, the ability of Younger to process natural gas and produce NGLs, operations at RIPET and the Ferndale terminal, or could affect Washington Gas and SEMCO Energy's operations and therefore could affect AltaGas' cash flow and net income.

## **Key Personnel**

AltaGas' success has been largely dependent on the skills and expertise of its key personnel. The continued success of AltaGas will be dependent on its ability to retain such personnel and to attract additional talented personnel to the organization. Access to a sustained labor market from which to attract the required expertise, knowledge, and experience is a critical factor to AltaGas' success. Costs associated with attracting and retaining key personnel could adversely affect AltaGas' business operations and financial results.

## **Risk Management Costs and Limitations**

AltaGas uses derivative financial instruments to hedge risks associated with exchange rates, interest rates, and commodity price fluctuations. AltaGas does not enter into derivatives transactions for speculative purposes. AltaGas' derivative transactions cannot mitigate all risk associated with AltaGas' business nor the risk of unauthorized activities notwithstanding appropriate oversight through AltaGas' risk management function. Any such unauthorized activities could materially adversely affect AltaGas' business, operations, and financial condition.

## **Commitments Associated with Regulatory Approvals for the Acquisition of WGL**

As a result of the process to obtain any consents required of each of the PSC of DC, the PSC of MD, the SCC of VA, and FERC, as well as to obtain CFIUS approval for the acquisition of WGL, AltaGas is committed to various programs, contributions, and investments in several agreements and regulatory approval orders. It is possible that AltaGas may encounter delays, unexpected difficulties, or additional costs in meeting these commitments in compliance with the terms of the relevant agreements and orders. Failure to fulfill the commitments in accordance with their terms could result in increased costs or result in penalties or fines that could materially adversely affect AltaGas' business, financial condition, operating results, and prospects.

## **Cost of Providing Retirement Plan Benefits**

The cost of providing retirement plan benefits to eligible current and former employees is subject to changes in the market value of AltaGas' retirement plan assets, changing bond yields, changing demographics and changing assumptions. Any sustained declines in equity markets, reductions in bond yields, increases in health care cost trends, or increases in life expectancy of beneficiaries may have an adverse effect on AltaGas' retirement plan liabilities, assets and benefit costs. Additionally, AltaGas may be required to increase its contributions in future periods in order to preserve the current level of benefits under the plans and/or due to U.S. federal funding requirements.

## **Failure of Service Providers**

Certain of AltaGas' information technology, customer service, supply chain, pipeline and infrastructure installation and maintenance, engineering, payroll, and human resources functions that AltaGas relies on are provided by third party vendors. Some of these services may be provided by vendors from centers located outside of Canada or the U.S. Services provided pursuant to these agreements could be disrupted due to events and circumstances beyond AltaGas' control. AltaGas' reliance on these service providers could have an adverse effect on AltaGas' business, results of operations and financial condition.

## **Pandemics, epidemics or disease outbreaks, such as the COVID-19 pandemic, may adversely affect local and global economies and our business, operations or financial results**

Disruptions caused by pandemics, epidemics or infectious disease outbreaks could materially adversely affect AltaGas' business, operations, financial results and forward-looking expectations. Emergency measures imposed by governments to combat the spread could include restrictions on business activity and travel, as well as requirements to isolate or quarantine. The duration and magnitude of such impacts will depend on many factors that AltaGas may not be able to accurately predict. COVID-19 and government responses interrupted business activities and supply chains, disrupted travel, and contributed to significant volatility in the financial and commodity markets. Disruptions related to pandemics, epidemics or infectious disease outbreaks could have the effect of heightening many of the other risks described in this "Risk Factors" section.

## **ENVIRONMENTAL, SOCIAL AND GOVERNANCE**

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AltaGas' commitment to ESG means upholding its Core Values and operating with purpose towards a shared mission of providing safe and reliable access to affordable energy. Through a commitment to managing GHG emissions; investing in its people and communities; building long-term relationships with Indigenous communities, local communities, governments and regulatory bodies; ensuring sound leadership and oversight; adhering to risk management practices; and being disciplined in capital deployment, AltaGas is focused on integrating ESG practices into its business. Ongoing communication with stakeholders is a key input to inform AltaGas' community consultation, strategy development and risk management activities, ensuring the Company approaches work in a responsible way and creates social value for the communities it serves. AltaGas' commitment to providing safe, affordable and reliable access to energy, together with its Core Values, enables an inclusive, performance-based culture.

AltaGas has identified seven ESG topics that reflect its ESG priorities. The topics were identified through consideration of both the perspectives of internal and external stakeholders as well as an internal assessment of risks. These seven topics are assessed regularly against a broad range of perspectives to confirm that the topics are still relevant and accurate.



AltaGas' seven key ESG topics are:

- Safety and Reliability;
- Energy Affordability;
- Energy Evolution;
- Cybersecurity;
- Diversity and Inclusion;
- Culture; and
- Community Partnerships.

In December 2023, AltaGas released its 2023 ESG Report, reporting 2022 performance, highlighting 2022 data for key topics and outlining progress towards the Company's sustainability goals within the areas of climate, diversity and inclusion and safety. This report covers AltaGas' consolidated enterprise-wide ESG performance and was prepared with reference to the TCFD framework, the SASB standards for the Oil & Gas sector – Midstream and the Infrastructure sector – Gas Utilities & Distributors, and supplemented with Global Reporting Initiative ("GRI") standards. The 2023 ESG Report can be accessed at [www.altagas.ca](http://www.altagas.ca).

## Environment

Environmental stewardship is integrated into how AltaGas conducts its business. The Board established the Environment, Health and Safety ("EHS") Committee to review, monitor, and make recommendations to the Board regarding Environment, Health and Safety strategy, policy, compliance, and risk, including climate-related risks and opportunities.

AltaGas is focused on operational excellence to minimize environmental impacts throughout the lifecycle of its operations while safely and reliably meeting the energy needs of its customers. AltaGas' EHS Policy guides its commitment to managing and minimizing environmental impacts and supporting a strong environmentally conscious culture. This includes implementing programs to safeguard the environment by proactively identifying and managing risks, using innovative technology, applying lessons learned and following leading practices to continually improve performance.

### Climate Change and the Energy Evolution

AltaGas' climate strategy is focused on reducing GHG emissions within its areas of operation while positioning the Utilities and Midstream businesses to participate in future global emissions reduction and decarbonization initiatives. AltaGas' diverse portfolio of strategically located Utilities and Midstream assets provide a strong platform to build upon as it considers opportunities to expand its product offerings in step with the evolving energy landscape.

AltaGas' climate strategy is influenced by the climate-related risks and opportunities to the businesses over the short-term (less than three years), medium-term (three - 10 years) and long-term (+10 years) horizon and the management of climate-related risks is incorporated into the business through AltaGas' enterprise-risk management processes. Integrating these considerations throughout the decision-making process ensures AltaGas is well-positioned to capitalize on the changing landscape.

## Social

### Safety and Reliability

AltaGas' EHS Policy and guidelines outline the Company's commitment to safety as a Core Value and set expectations and parameters that are consistently applied across the organization and provide a framework to reinforce a culture of safety. AltaGas' commitment to safety means supporting its safety culture; stopping work that is unsafe; reporting all

incidents and near misses; proactively identifying and managing risks; supporting the physical, psychological and social well-being of its people; and complying with regulations, laws and standards.

To further emphasize the importance of safety, each employee and contractor must commit to upholding AltaGas' EHS Policy and Core Values every day. In addition, AltaGas' EHS management system provides a transparent framework that can be applied consistently across its operations to drive accountability, operational excellence and manage risk.

Building resiliency in the Company's infrastructure is essential for providing safe, reliable service to customers and keeping communities safe. AltaGas' Midstream and Utility businesses have process safety management systems that ensure asset integrity, regulatory compliance, and resiliency in respect of both human factors and engineering design and operation. AltaGas proactively engineers to ensure it can safely operate complex systems. AltaGas ensures there are several safety measures in place to help prevent harm to people, assets, and the environment, through multiple barriers of protection such as design standards, engineering controls, and operating procedures. AltaGas makes capital investments to enhance the resiliency of its assets, which includes investments to modernize facility and pipeline networks through enhancement and replacement activities.

#### Cybersecurity

Safeguarding the Company's infrastructure, system availability, digital assets and confidential information is essential to the safe and reliable delivery of energy to AltaGas' customers. AltaGas works closely with regulators and governments in each of its jurisdictions to assess and protect its systems and to ensure the Company's cybersecurity and data privacy measures are aligned and compliant with local rules and regulations.

#### Culture

Spanning North America, AltaGas' diverse workforce of approximately 3,000 employees at December 31, 2023, is guided by one set of Core Values and a common mission which provides the basis for how AltaGas does business and executes on its strategic priorities. AltaGas' Human Rights Policy, guided by the International Bill of Human Rights, outlines the Company's commitment to maintaining a corporate culture that respects the principles aimed at promoting, protecting and supporting internationally recognized human rights.

#### Diversity and Inclusion

AltaGas' diversity and inclusion objectives stem from its Core Values, with a focus on employee, community, and third-party engagement. AltaGas invests in its people through talent development, diversity and inclusion initiatives, and engagement strategies. The Company's Employee Resource Groups support employees and provide team-building and professional development opportunities for diverse employees. AltaGas' diversity and inclusion efforts also extend beyond the workforce into local communities and supply chains through community investment and engagement, including with Indigenous communities and supplier diversity initiatives.

#### Community Partnerships and Indigenous Relations

AltaGas operates in many diverse jurisdictions and recognizes that each community has unique needs. Indigenous communities and stakeholder groups, including local governments, regulators, customers and residents, each have valuable and important perspectives which AltaGas continues to learn from. AltaGas shows its commitment through several of its programs, such as community investment, customer affordability and energy assistance programs, public awareness and safety programs, supplier diversity programs, and employee engagement through volunteerism and giving.

AltaGas believes long-term collaborative relationships with Indigenous communities lead to shared benefits, stronger communities and effective partnerships. The Indigenous Engagement Guideline ensures that relationships are built on listening, learning and responding and that a consistent approach is applied to engagement practices, areas of focus for economic and social benefit and record keeping. As part of AltaGas' engagement, the Company may enter into agreements with Indigenous peoples. These agreements range from short-term arrangements that enable Indigenous communities to learn more about the Company's proposed developments and participate in regulatory processes, to agreements that define how AltaGas and Indigenous communities can collaborate over the long-term. AltaGas' longer-term initiatives include training, employment, contracting, supplier procurement, environmental protection, and community investment and other forms of economic and social inclusion.

### Energy Affordability

Within the Utilities business, AltaGas provides customers with access to affordable energy, safely and reliably. The most under-served in communities rely on programs and initiatives to help manage energy costs. These programs include asset optimization, revenue adjustments, budget plans and helping qualifying customers access federal and state funding.

### Governance

AltaGas' Board oversees the strategic direction of the Company and evaluates and measures progress towards execution. ESG oversight is ultimately a Board responsibility. Each of the Board's four standing committees assist in providing oversight of environment, social and governance areas, with different aspects of ESG performance falling under each committee mandate. AltaGas' Governance Committee has accountability for ESG reporting. For more details on the role of each standing committee, see the 2023 Management Information Circular available at [www.altagas.ca](http://www.altagas.ca).

The CEO leads the development and execution of the corporate strategy and manages the business and affairs of AltaGas. The Environment, Social and Governance Steering Committee, made up of a cross functional enterprise-wide team, is charged with assisting the business to identify significant ESG priorities, raise awareness of internal initiatives, and report on the outcomes.

### Policies

AltaGas' governance, policies, and procedures are the framework and foundation that support sound decision making. AltaGas has a number of policies in place with respect to environmental stewardship, health and safety, and social responsibility. Notably, AltaGas' COBE ensures AltaGas upholds its Core Values and conducts business in a safe, respectful and ethical manner. The COBE and its related policies are approved by the Board. Directors, officers and employees of AltaGas, and other representatives are required to certify that they have read, understand and will comply with the COBE and its key policies when joining AltaGas and on an annual basis thereafter. The Board monitors compliance with the COBE and its key policies and related procedures and oversees training initiatives implemented to support compliance. AltaGas' COBE related policies include:

- Acceptable Use of Technology;
- Alcohol and Drug;
- Anti-Bribery and Anti-Corruption;
- Conflicts of Interest;
- Cybersecurity;
- Disclosure;
- Environment, Health and Safety;
- Human Rights;
- Privacy;
- Reporting Concerns and Anti-Retaliation;

- Respectful Workplace;
- Securities Trading and Reporting; and
- Supplier Code of Conduct.

Details of AltaGas' COBE and related policies are available at [www.altagas.ca](http://www.altagas.ca).

## DIVIDENDS

Dividends are declared at the discretion of the Board of Directors and dividend levels are reviewed periodically by the Board of Directors, giving consideration to the ongoing sustainable cash flow as impacted by the consolidated net income, maintenance and growth capital and debt repayment requirements of AltaGas. The Corporation targets to pay a portion of its ongoing cash flow through regular quarterly dividends made to Shareholders.

AltaGas declares and pays a quarterly dividend to its common shareholders. Dividends on preferred shares are also paid quarterly.

AltaGas' payment of dividends may be limited by covenants under its credit agreements, including, without limitation, in circumstances when a default or event of default exists or would be reasonably expected to exist upon or as a result of making such dividend payment. In the event of liquidation, dissolution, or winding-up of AltaGas, the preferred shareholders have priority in the payment of dividends over the common shareholders.

The table below shows the cash dividends paid by AltaGas on Common Shares and Preferred Shares for the three most recently completed fiscal years.

\$ per share	2023	2022	2021
Common Shares	<b>1.120000</b>	1.060000	1.082900
Series A Shares	<b>0.765000</b>	0.765000	0.765000
Series B Shares	<b>1.816740</b>	1.007330	0.694360
Series C Shares <sup>(1)</sup>	—	0.991875	1.322500
Series E Shares <sup>(2)</sup>	<b>1.348252</b>	1.348252	1.348252
Series G Shares	<b>1.060500</b>	1.060500	1.060500
Series H Shares	<b>1.916724</b>	1.107322	0.794372
Series K Shares <sup>(3)</sup>	—	0.312500	1.250000

(1) Amounts disclosed are in U.S. dollars. Series C shares were redeemed on September 30, 2022.

(2) Series E shares were redeemed on December 31, 2023.

(3) Series K shares were redeemed on March 31, 2022.

## MARKET FOR SECURITIES

The following chart provides the reported high and low trading prices and volume of Common Shares, traded on the TSX under the symbol ALA, traded by month from January to December 2023 as reported by the TSX:

Month	High	Low	Volume Traded
January	25.16	23.18	27,735,175
February	25.15	23.42	29,834,500
March	24.04	21.44	42,939,586
April	23.83	22.46	27,159,279
May	23.84	22.83	22,130,477
June	24.80	22.80	27,651,779
July	26.03	23.50	24,649,753
August	26.42	25.55	23,002,833
September	27.25	26.05	23,617,914
October	27.11	24.86	19,347,816
November	27.95	26.30	23,612,105
December	28.42	27.08	24,818,191

Series A Shares are traded on the TSX under the symbol ALA.PR.A. The following table sets forth the monthly price range and volume traded for Series A Shares from January to December 2023 as reported by the TSX:

Month	High	Low	Volume Traded
January	15.95	14.60	41,544
February	16.19	15.66	34,285
March	15.92	15.00	58,653
April	15.32	14.22	522,727
May	14.89	14.30	126,696
June	15.00	14.45	161,275
July	15.20	14.64	133,400
August	15.28	14.61	185,758
September	15.10	14.30	86,527
October	15.20	13.75	64,861
November	16.00	13.93	220,717
December	16.61	15.61	57,291

Series B Shares are traded on the TSX under the symbol ALA.PR.B. The following table sets forth the monthly price range and volume traded for Series B Shares for the period from January to December 2023 as reported by the TSX:

Month	High	Low	Volume Traded
January	18.25	16.61	14,987
February	19.19	18.16	12,520
March	18.71	17.08	12,735
April	17.55	16.75	18,872
May	17.37	16.37	17,520
June	17.40	16.51	28,605
July	17.55	16.79	25,119
August	17.65	17.20	25,152
September	17.85	17.35	18,111
October	17.49	16.57	61,067
November	18.30	16.92	50,067
December	19.04	18.50	35,278

Series E Shares are traded on the TSX under the symbol ALA.PR.E. The following table sets forth the monthly price range and volume traded for Series E Shares from January to December 2023 as reported by the TSX:

Month	High	Low	Volume Traded
January	21.75	20.75	110,988
February	22.74	21.41	90,619
March	22.02	20.40	67,236
April	20.61	20.05	96,979
May	20.33	19.50	52,723
June	20.78	19.87	81,670
July	21.09	19.95	73,564
August	21.24	20.04	119,611
September	21.20	20.02	188,561
October	21.85	20.33	204,106
November	25.25	21.10	831,989
December	25.28	24.95	860,223

On December 31, 2023, AltaGas redeemed all of its outstanding Series E Preferred Shares. A loss of approximately \$5 million was recognized upon redemption related to share issuance costs for the preferred shares.

Series G Shares are traded on the TSX under the symbol ALA.PR.G. The following table sets forth the monthly price range and volume traded for Series G Shares from January to December 2023 as reported by the TSX:

Month	High	Low	Volume Traded
January	18.99	17.60	105,716
February	19.00	18.55	217,943
March	18.90	17.39	112,522
April	17.75	17.05	43,463
May	17.50	16.62	95,039
June	17.59	16.80	40,436
July	17.74	17.00	109,267
August	18.09	16.82	196,165
September	17.69	16.85	90,099
October	17.35	16.30	132,093
November	21.21	16.84	294,901
December	21.84	21.20	70,314

Series H Shares are traded on the TSX under the symbol ALA.PR.H. The following table sets forth the monthly price range and volume traded for Series H Shares for the period of January to December 2023 as reported by the TSX:

Month	High	Low	Volume Traded
January	20.60	20.01	71,525
February	20.65	20.15	3,700
March	20.65	20.15	7,100
April	19.90	18.90	7,800
May	19.02	18.90	8,900
June	19.54	19.03	7,937
July	19.25	19.15	650
August	19.15	18.99	7,401
September	19.10	18.86	6,150
October	18.97	18.03	76,901
November	22.22	17.93	56,841
December	23.49	21.80	7,100

## CREDIT RATINGS

Credit ratings are intended to provide investors with an independent measure of credit quality of an issue of securities and are indicators of the likelihood of payment and of the capacity and willingness of a company to meet its financial commitment on an obligation in accordance with the terms of an obligation. This information concerning AltaGas' credit ratings relates to AltaGas' financing costs, liquidity, and operations. The availability of AltaGas' funding options may be affected by certain factors, including the global capital markets environment and outlook as well as AltaGas' financial performance. AltaGas' access to capital markets at competitive rates is influenced by credit ratings and rating outlook, as determined by credit rating agencies such as S&P, Fitch, and Moody's, and if AltaGas' ratings were downgraded, AltaGas' financing costs and future debt issuances could be unfavorably impacted.

S&P, Fitch, and Moody's are rating agencies that provide credit ratings. Ratings for debt instruments from S&P, and Fitch range from a high of AAA to a low of D. Moody's ratings for debt instruments range from a high of AAA to a low of C. S&P, and Fitch also provide credit ratings for Preferred Shares and subordinated debt. S&P ratings for Preferred Shares and subordinated debt range from a high of P-1 to a low of D. Fitch ratings for Preferred Shares and subordinated debt range from a high of AAA to a low of D.

The below table summarizes the most recent credit ratings for AltaGas and subsidiaries:

Entity	Rating Agency	Debt Rated	Most Recent Rating	Comments
<b>AltaGas</b>	Standard & Poor's ("S&P")	Issuer rating	BBB-	Last reviewed June 23, 2023.
		Senior unsecured	BBB-	Last reviewed June 23, 2023.
		Preferred shares and Junior Subordinated	P-3 / BB	Last reviewed November 9, 2023. Junior Subordinated added on January 5 and August 3, 2022, and November 9, 2023.
	Fitch Ratings ("Fitch")	Issuer	BBB	Last reviewed on June 30, 2023.
		Senior unsecured	BBB	Last reviewed on January 4, 2024.
		Preferred shares and Junior Subordinated	BB+	Last reviewed on November 7, 2023. Junior Subordinated added on January 5 and August 3, 2022, and November 7, 2023.
<b>Washington Gas</b>	S&P	Unsecured debt	A-	Last reviewed June 28, 2023.
		Commercial paper	A-2	Last reviewed June 28, 2023.
	Fitch	Unsecured debt	A	Last reviewed June 30, 2023.
<b>WGL</b>	S&P	Issuer	BBB-	Last reviewed June 28, 2023.
		Senior unsecured	BB+	Last reviewed June 28, 2023.
		Commercial paper	A-3	Last reviewed June 28, 2023.
	Fitch	Issuer	BBB	Last reviewed June 30, 2023.
<b>SEMCO</b>	Moody's	Long-term issuer	A3	Last reviewed May 26, 2023.
		Senior secured notes	A1	Last reviewed May 26, 2023.
	S&P	Long-term issuer	BBB	Last reviewed September 28, 2023.
		Senior secured notes	A-	Last reviewed September 28, 2023.

Please refer to the S&P, Moody's, and Fitch websites for additional details on their ranking systems.

Except as set forth above, none of S&P, Fitch, nor Moody's has announced that it is reviewing or intends to revise or withdraw the ratings on AltaGas.

AltaGas provides an annual fee to S&P, Fitch, and Moody's for credit rating services. AltaGas has paid each of S&P, Fitch, and Moody's its respective fees in connection with the provision of the above ratings. Over the past two years, in addition to the aforementioned fees, AltaGas has made payments in respect of certain other services provided to the Corporation by S&P, Fitch, and Moody's.

## MATERIAL CONTRACTS

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Except for contracts entered into in the ordinary course of business, the only material contracts entered into by AltaGas within the most recently completed fiscal year, or before the most recently completed fiscal year but which are still material and are still in effect, are the following:

- The trust indenture between AltaGas and Computershare Trust Company of Canada dated July 1, 2010, as supplemented, related to the issuance and sale of MTNs pursuant to AltaGas' medium term note program;
- The trust indenture between AltaGas and Computershare Trust Company of Canada dated September 26, 2017, as supplemented, related to the issuance and sale of MTNs pursuant to AltaGas' medium term note program;
- The Amended and Restated Credit Agreement dated May 4, 2021 among AltaGas Ltd., AltaGas Services (U.S.) Inc., Royal Bank of Canada as agent and certain financial institutions as lenders; and
- The purchase and sale agreement between AltaGas, as purchaser, and Tidewater Midstream and Infrastructure Ltd. and 2205894 Alberta Ltd., an affiliate of Tidewater, as sellers, for: (i) Pipestone Phase I and Pipestone Phase II; (ii) the adjacent Dimsdale natural gas storage facility; (iii) the Pipestone condensate truck-in/truck-out terminal; and (iv) the associated gathering pipeline systems required to operate these assets for consideration upon close of \$328 million in cash and approximately 12.5 million AltaGas common shares, inclusive of working capital and other adjustments.

Copies of each of these documents have been filed on SEDAR+ at [www.sedarplus.ca](http://www.sedarplus.ca).

## INTEREST OF MANAGEMENT AND OTHERS IN MATERIAL TRANSACTIONS

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AltaGas is not aware of any material interest, direct or indirect, of any director or officer of AltaGas, any director or officer of a corporation that is an insider or subsidiary of AltaGas, or any other insider of AltaGas, or any associate or affiliate of any such person, in any transaction since the commencement of AltaGas' last three completed fiscal years, or in any proposed transaction, that has materially affected or would materially affect AltaGas or any of its subsidiaries.

## LEGAL PROCEEDINGS

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AltaGas is not aware of any material legal proceedings to which the Corporation or its affiliates are party or to which their property is subject during AltaGas' most recently completed fiscal year and AltaGas is not aware of any such material legal proceedings being contemplated. See "Risk Factors – Litigation".



## REGULATORY ACTIONS

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AltaGas is not aware of any (i) penalties or sanctions imposed against it by a court relating to securities legislation or by a securities regulatory authority during its most recently completed fiscal year, or (ii) other penalties or sanctions imposed by a court or regulatory body against it that would likely be considered important to a reasonable investor in making an investment decision. There were no settlement agreements entered into by AltaGas before a court relating to securities legislation or with a securities regulatory authority during AltaGas' most recently completed fiscal year.

## INTERESTS OF EXPERTS

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The auditors of the Corporation are Ernst & Young LLP, Chartered Accountants, 2200 – 215 2nd Street SW, Calgary, Alberta T2P 1M4. Ernst & Young LLP is independent in accordance with the Rules of Professional Conduct as outlined by the Chartered Professional Accountants of Alberta.

## ADDITIONAL INFORMATION

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Additional information, including, without limitation, directors' and officers' remuneration and indebtedness, principal holders of AltaGas' securities and Share Options is contained in AltaGas' management information circular for AltaGas' most recent annual meeting of Shareholders that involved the election of directors.

Additional financial information is contained in AltaGas' audited Consolidated Financial Statements as at and for the year ended December 31, 2023 and MD&A for the year ended December 31, 2023.

The Corporation routinely files all required documents through the SEDAR+ system and on its own website. Internet users may retrieve such material through the SEDAR+ website [www.sedarplus.ca](http://www.sedarplus.ca). AltaGas' website is located at [www.altagas.ca](http://www.altagas.ca), but AltaGas' website is not incorporated by reference into this AIF.

## TRANSFER AGENTS AND REGISTRARS

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The registrar and transfer agent for the Common Shares and the Preferred Shares is Computershare Investor Services Inc., Home Oil Tower 800, 324-8th Avenue SW, Calgary, Alberta T2P 2Z2, Tel: 1-800-564-6253.

The registrar and trustee for AltaGas' MTNs is Computershare Trust Company of Canada, Home Oil Tower 800, 324-8th Avenue SW, Calgary, Alberta T2P 2Z2, Tel: 1-800-564-6253.

## METRIC CONVERSION

The following table sets forth certain standard conversions between Standard Imperial Units and the International System of Units (or metric units).

To Convert From	To	Multiply by	To Convert From	To	Multiply by
Mcf	cubic meters	28.174	feet	meters	0.305
cubic meters	cubic feet	35.494	meters	feet	3.281
Bbls	cubic meters	0.159	miles	km	1.609
cubic meters	Bbls	6.29	km	miles	0.621
tonnes	long tons	0.98	GJ	Mcf	0.9482
metric tonnes	Bbls (propane)	12.40	metric tonnes	Bbls (butane)	10.90

## GLOSSARY

Unless the context otherwise requires, terms used in this AIF have the following meanings and references to agreements include any amendments, restatements, modifications, or supplements in effect as of the date hereof:

**"AB 32"** means the Global Warming Solutions Act of 2006, or Assembly Bill 32, a California State Law designed to reduce greenhouse gas emissions from all sources throughout the state;

**"ACOSS"** means affiliate cost of service study;

**"AER"** means the Alberta Energy Regulator;

**"AESO"** means the Alberta Electric System Operator;

**"AIF"** means this Annual Information Form;

**"Aitken Connector"** means an eight-inch diameter NGL pipeline, approximately 60 km in length, which runs from Aitken Creek to the Townsend complex;

**"Alaska Utilities Disposition"** means the agreement dated May 25, 2022 to sell AltaGas' 100 percent ownership interest in ENSTAR, 65 percent interest in CINGSA and CINGSA Storage facility and other ancillary operations, to TriSummit Utilities, for consideration of US\$800 million (approximately CAD\$1.1 billion) prior to closing adjustments. The transaction closed on March 1, 2023;

**"AltaGas"**, the **"Company"**, or the **"Corporation"** means AltaGas Ltd., including, where the context requires, the affiliates of AltaGas Ltd.;

**"ARP"** means accelerated replacement programs;

**"ARSP"** means the Anacostia River Sediment Project;

**"ASC"** means the Alberta Securities Commission;

**"B.C." or "BC"** means the province of British Columbia in Canada;

**"Bbls"** means stock tank barrels of ethane and other NGLs, expressed in standard 42 U.S. gallon barrels or 34.972 imperial gallon barrels;

**"Bbls/d"** means Bbls per day;

**"Bcf"** means billion cubic feet or 1,000,000 Mcf of natural gas;

**"Bcf/d"** means Bcf per day;

**"Birchcliff"** means Birchcliff Energy Ltd.;

**"Blair Creek facility"** means the Blair Creek processing facility located approximately 140 km northwest of Fort St. John, British Columbia, owned by AltaGas' indirect wholly-owned subsidiary AltaGas Northwest Processing Limited Partnership;

**"Blythe"** means Blythe Energy Inc.;

**"Blythe Energy Center"** means the 507 MW gas-fired generation facility located near Blythe, California, together with the related 67 miles transmission lines, owned by AltaGas' indirect wholly-owned subsidiary Blythe;

**"Board of Directors" or "the Board"** means the board of directors of AltaGas, as from time to time constituted;

**"BRFN"** means Blueberry River First Nations;

**"Brush II"** means the 70 MW gas-fired generation facility in Colorado, which was sold during 2022;

**"C&I"** means commercial and industrial;

**"CAISO"** means the California Independent System Operator;

**"Canadian EPA"** means the Canadian Environmental Protection Act;

**"CARB"** means the California Air Resources Board;

**"CARE Plan"** means Washington Gas' natural gas conservation and ratemaking efficiency plan;

**"CBCA"** means the *Canada Business Corporations Act*, R.S.C. 1985, c. C 44, as amended from time to time, including the regulations from time to time promulgated thereunder;

**"CEO"** means Chief Executive Officer;

**"CER"** means Clean Electricity Regulations;

**"CFIUS"** means the Committee on Foreign Investment in the United States;

**"CINGSA"** means Cook Inlet Natural Gas Storage Alaska, LLC, which was sold on March 1, 2023 pursuant to the Alaska Utilities Disposition;

**"CINGSA Storage facility"** means the in-field storage facility in the Cook Inlet area of Alaska owned and operated by CINGSA, which was sold on March 1, 2023 pursuant to the Alaska Utilities Disposition;

**"CN"** means Canadian National Railway Company;

**"CO<sub>2</sub>"** means carbon dioxide;

**"CO<sub>2</sub>e"** means carbon dioxide equivalent;

**"COBE"** means AltaGas' Code of Business Ethics

**"Common Shares"** means common shares of AltaGas Ltd.;

**"Competition Act"** means the Act in Canada to provide for the general regulation of trade and commerce in respect of conspiracies, trade practices and mergers affecting competition;

**"Core Values"** means AltaGas' five core values of (1) safety; (2) collaboration; (3) integrity; (4) inclusion; and (5) learning;

**"COVID-19"** means the 2019 novel coronavirus;

**"CPI"** means the Consumer Price Index;

**"DC OPC"** means the Office of the People's Counsel for the District of Columbia;

**"Degree Day"** means the amount that the daily mean temperature deviates below 65 degrees Fahrenheit at SEMCO and Washington Gas, such that a one degree difference equates to one Degree Day;

**"Dekatherm ("Dth")"** means 10 Therms;

**"Dimsdale"** means the Dimsdale natural gas storage facility east of Pipestone Phase I and Pipestone Phase II;

**"DOEE"** means the Department of Energy and Environment;

**"ECCC"** means Environment and Climate Change Canada;

**"EEEP"** means the Edmonton ethane extraction plant and related facilities, AltaGas' interest being owned by its indirect wholly-owned subsidiary AltaGas Extraction and Transmission Limited Partnership;

**"EH&S Committee"** means the Environment, Health and Safety Committee of the Board of Directors;

**"EHS Management System"** means AltaGas' Environmental, Health & Safety Management System;

**"EHS Policy"** means AltaGas' Environment, Health and Safety policy;

**"Enerchem"** means Enerchem International Inc., a wholly owned subsidiary of AltaGas;

**"ENSTAR"** means the natural gas distribution business conducted by SEMCO Energy in Alaska under the name ENSTAR Natural Gas Company, which was sold on March 1, 2023 pursuant to the Alaska Utilities Disposition;

**"EPA"** means electricity purchase agreement;

**"EQM"** means EQM Gathering Opco, LLC;

**"EQT"** means EQT Midstream Partners, LP;

**"ERM"** means Enterprise Risk Management;

**"ESG"** means Environment, Social & Governance;

**"EWRP"** means Energy Waste Reduction Program;

**"FEED"** means front end engineering design;

**"FERC"** means the United States Federal Energy Regulatory Commission;

**"EVP"** means Executive Vice President;

**"Ferndale terminal"** means the storage, distribution, and export facility for bulk shipments of propane, and butane located on the west coast near Ferndale, Washington, and owned by a subsidiary of AltaGas;

**"FID"** means final investment decision;

**"Fitch"** means Fitch Ratings Inc.;

**"g"** means grams;

**"GGPPA"** means the *Greenhouse Gas Pollution Pricing Act*;

**"GJ"** means gigajoule;

**"GHG"** means greenhouse gas;

**"GHGRP"** means the Federal Greenhouse Gas Reporting Program;

**"Gordondale facility"** means the Gordondale gas processing facility in the Gordondale area of the Montney reserve area approximately 100 km northwest of Grande Prairie, Alberta, owned by AltaGas' indirect wholly-owned subsidiary AltaGas Northwest Processing Limited Partnership;

**"GRI"** means the Global Reporting Initiative;

**"GSAs"** means Groundwater Sustainability Agencies;

**"Hampshire"** or **"Hampshire Gas"** means Hampshire Gas Company, a subsidiary of WGL that provides regulated interstate natural gas storage services to Washington Gas under a FERC approved interstate storage service tariff;

**"Harmattan"** means the combined Harmattan gas processing facility and extraction plant and associated facilities, owned by AltaGas' indirect wholly-owned subsidiary Harmattan Gas Processing Limited Partnership;

**"HRC"** means the Human Resources and Compensation committee of the Board of Directors;

**"Idemitsu"** means Idemitsu Kosan Co., Ltd.;

**"IT"** means information technology;

**"IRIP"** means the Infrastructure Reliability Improvement Program;

**"JEEP"** means the Joffre ethane extraction plant and related facilities;

**"Kelt"** means Kelt Exploration ("LNG") Ltd;

**"km"** means kilometer;

**"LNG"** means liquefied natural gas;

"**LPG**" means liquefied petroleum gas;

"**MBbl/d**" means thousands of barrels per day;

"**Mcf**" means a thousand cubic feet of natural gas at standard imperial conditions of measurement;

"**Mcf/d**" means Mcf per day;

"**MD&A**" means management discussion and analysis;

"**MDth**" means thousands of Dekatherms;

"**MD OPC**" means Maryland Office of People's Counsel;

"**Merger Agreement**" means the agreement and plan of merger dated as of January 25, 2017, among AltaGas, Merger Sub and WGL;

"**Merger Sub**" means Wrangler Inc., a Virginia corporation and an indirect wholly-owned subsidiary of AltaGas;

"**MGP**" means manufactured gas plant;

"**Mmcf**" means a million cubic feet of natural gas at standard conditions of measurement;

"**Mmcf/d**" means Mmcf per day;

"**Moody's**" means Moody's Investor Service;

"**Mountain Valley**" or "**MVP**" means Mountain Valley pipeline, an equity investment of Washington Gas Resources;

"**MPSC**" means the Michigan Public Service Commission;

"**MRP**" means Main Replacement Program;

"**MTN**" means medium term notes issued from time to time under either the amended and restated trust indenture dated July 1, 2010 between AltaGas and Computershare Trust Company of Canada, as further amended, restated, supplemented or otherwise modified from time to time or the trust indenture dated September 26, 2017 between AltaGas and Computershare Trust Company of Canada, as amended, restated, supplemented or otherwise modified from time to time, as the case may be;

"**MW**" means megawatt; one MW is 1,000,000 watts; the watt is the basic electrical unit of power;

"**M3**" means cubic meter;

"**NAESB**" means North American Energy Standards Board;

"**NEBC**" means Northeast British Columbia;

"**Net-Zero Act**" means the *Canadian Net-Zero Emissions Accountability Act*.

"**NFA**" means No Further Action;

"**NGL**" or "**NGLs**" means natural gas liquids, which includes primarily propane, butane, and condensate;

**"NGTL"** means NOVA Gas Transmission Ltd.;

**"Non-Ring-Fenced Entities"** means AltaGas and its affiliates other than Washington Gas and the SPE;

**"NGQSS"** means Natural Gas Quality of Service Standards;

**"NPS"** means the National Park Service;

**"North Pine facility"** means the NGL separation facility, located approximately 40 km northwest of Fort St. John, British Columbia;

**"North Pine pipelines"** means two eight-inch diameter NGL supply pipelines, each approximately 40 km in length, which run from the existing Alaska Highway truck terminal to the North Pine facility;

**"Nova Chemicals"** means NOVA Chemicals Corporation;

**"NOx"** means nitrogen oxides;

**"OBPS"** means Output-Based Pricing System;

**"O2"** means oxygen;

**"Pipestone Assets"** means the associated gathering pipeline systems required to operate Pipestone Phase I and Pipestone Phase II;

**"Pipestone Phase I"** means the Pipestone sour deep-cut natural gas processing facility located in the heart of the Alberta Montney;

**"Pipestone Phase II"** means the Pipestone sour deep-cut natural gas processing facility expansion project;

**"PEEP"** means the Pembina Express extraction plant and related facilities;

**"Pembina"** means Pembina Infrastructure and Logistics LP;

**"Petrogas"** means Petrogas Energy Corp., a North American integrated midstream company, wholly-owned by AltaGas pursuant to the Petrogas Acquisition;

**"Petrogas Acquisition"** means AltaGas' acquisition of a controlling interest in Petrogas on December 15, 2020. On July 5, 2022, AltaGas closed the purchase of the remaining 25.97 percent equity ownership, with AltaGas now owning 100 percent of Petrogas;

**"Pomona"** means the 44.5 MW gas-fired generation facility located in Pomona, California, which was sold during 2020;

**"Pool"** means the scheme operated by the AESO for (i) exchanges of electric energy, and (ii) financial settlement for the exchange of electric energy;

**"PPA"** means power purchase agreement;

**"Preferred Shares"** means the preferred shares of AltaGas Ltd. as a class, including, without limitation, the Series A Shares, Series B Shares, Series C Shares, Series E Shares, Series G Shares, Series H Shares, Series I Shares, Series K Shares;

**"PROJECTpipes"** means Washington Gas' 40-year accelerated pipeline replacement program, that was launched in 2014 in the District of Columbia and is designed to enhance the safety and reliability of its system;

**"PSC of DC"** means the Public Service Commission of the District of Columbia;

**"PSC of MD"** means the Maryland Public Service Commission;

**"PULJ"** means the Public Utility Law Judge;

**"Rep Agreements"** mean the Representation, Management and Processing Agreements at Harmattan;

**"REEF"** means the Ridley Island Energy Export Facility, the LPG and bulk liquids terminal and marine infrastructure located on Ridley Island, near Prince Rupert, British Columbia;

**"Ring-Fenced Entities"** means Washington Gas and the SPE;

**"RIPET"** means the Ridley Island Propane Export Terminal, the propane export terminal located on Ridley Island, near Prince Rupert, British Columbia;

**"RNG"** means renewable natural gas;

**"ROD"** means Record of Decision;

**"ROE"** means return on equity;

**"Royal Vopak"** means Koninklijke Vopak N.V., a public company incorporated under the laws of the Netherlands;

**"RTI"** means Ridley Terminals Inc.;

**"S&P"** means Standard & Poor's Ratings Services and its successors;

**"Sarbanes-Oxley"** means the *Sarbanes-Oxley Act of 2002*;

**"SASB"** means the Sustainability Accounting Standards Board;

**"SAVE"** means Steps to Advance Virginia's Energy Plan;

**"SB"** means Senate Bill;

**"SB 253"** means Senate Bill 253, a bill signed in California in October 2023 aiming to improve corporate transparency around emissions;

**"SB 261"** means Senate Bill 261, a bill signed in California in October 2023 requiring large companies to release climate related financial risk data;

**"SB 1020"** means Senate Bill 1020, a bill signed in California in September 2022 which aims to reduce the state's dependency on fossil fuels in three stages;

**"SCC of VA"** means the Commonwealth of Virginia State Corporation Commission;

**"SCE"** means Southern California Edison Company;

**"SEDAR+"** means System for Electronic Document Analysis and Retrieval, at [www.sedarplus.ca](http://www.sedarplus.ca);



**"SEMCO Energy"** means SEMCO Energy, Inc.;

**"SEMCO"** means the Michigan natural gas distribution business conducted by SEMCO Energy in Michigan under the name SEMCO Energy Gas Company;

**"Series 1 Indenture"** means the trust indenture dated September 26, 2017 between AltaGas and Computershare Trust Company of Canada, as supplemented and amended by a ninth supplemental indenture dated January 11, 2022;

**"Series 2 Indenture"** means the trust indenture dated September 26, 2017 between AltaGas and Computershare Trust Company of Canada, as supplemented and amended by a tenth supplemental indenture dated August 17, 2022;

**"Series 3 Indenture"** means the trust indenture dated September 26, 2017 between AltaGas and Computershare Trust Company of Canada, as supplemented and amended by a twelfth supplemental indenture dated November 10, 2023;

**"Series 2022-A Shares"** means the Cumulative Redeemable Fixed-to-Fixed Rate Preferred Shares, Series 2022-A, of AltaGas;

**"Series 2022-B Shares"** means the Cumulative Redeemable Fixed-to-Fixed Rate Preferred Shares, Series 2022-B, of AltaGas;

**"Series 2023-A Shares"** means the Cumulative Redeemable Fixed-to-Fixed Rate Preferred Shares, Series 2023-A, of AltaGas;

**"Series A Shares"** means the cumulative redeemable 5-year fixed rate reset preferred shares, Series A, of AltaGas;

**"Series B Shares"** means the cumulative redeemable floating rate preferred shares, Series B, of AltaGas;

**"Series C Shares"** means the cumulative redeemable 5-year fixed rate reset preferred shares, Series C, of AltaGas (US dollar), which were redeemed by AltaGas on September 30, 2022;

**"Series E Shares"** means the cumulative redeemable 5-year fixed rate reset preferred shares, Series E, of AltaGas, which were redeemed by AltaGas on December 31, 2023;

**"Series G Shares"** means the cumulative redeemable 5-year fixed rate reset preferred shares, Series G, of AltaGas;

**"Series H Shares"** means the cumulative redeemable floating rate preferred shares, Series H, of AltaGas;

**"Series I Shares"** means the cumulative redeemable 5-year minimum fixed rate reset preferred shares, Series I, of AltaGas, which were redeemed by AltaGas on December 31, 2020;

**"Series K Shares"** means the cumulative redeemable 5-year minimum fixed rate reset preferred shares, Series K, of AltaGas, which were redeemed by AltaGas on March 31, 2022;

**"SGMA"** means the *Sustainable Groundwater Management Act*;

**"Share Options"** means options to acquire Common Shares granted pursuant to AltaGas' share option plan;

**"Shareholders"** mean the holders of Common Shares;

**"Shell Energy"** means Shell Energy North America (US), LP;

**"SOS"** means Standard offer Service;

**"SP"** means California Air Resources Board's 2022 Scoping Plan;

**"SPE"** means Wrangler SPE LLC, a wholly-owned special purpose entity subsidiary of WGL incorporated as a bankruptcy remote entity;

**"STRIDE"** means Strategic Infrastructure Development Enhancement Plan;

**"Subordinated hybrid notes"** means the Subordinated Notes, Series 1, the Subordinated Notes, Series 2, and the Subordinated Notes, Series 3;

**"Subordinated Notes, Series 1"** means the 5.25 percent Fixed-to-Fixed Rate Subordinated Notes, Series 1 of AltaGas;

**"Subordinated Notes, Series 2"** means the 7.35 percent Fixed-to-Fixed Rate Subordinated Notes, Series 2 of AltaGas;

**"Subordinated Notes, Series 3"** means the 8.90 percent Fixed-to-Fixed Rate Subordinated Notes, Series 3 of AltaGas;

**"TCFD"** means the Task Force on Climate-related Financial Disclosures;

**"TIER"** means Technology Innovation and Emissions Reduction;

**"Tourmaline"** means Tourmaline Oil Corp.;

**"Townsend 2B"** means the 198 Mmc/d C3+ deep cut gas processing facility located on the existing Townsend complex;

**"Townsend complex"** means the 550 Mmc/d gas processing facility, including shallow cut and deep cut processing;

**"Transco"** means Transcontinental Gas Pipeline Company LLC;

**"Tidewater"** means Tidewater Midstream and Infrastructure Ltd.;

**"Trigon"** means Trigon Pacific Terminals Ltd.;

**"TSX"** means the Toronto Stock Exchange;

**"UESC"** means Utility Energy Savings Contracts;

**"United States", "US", or "U.S."** means the United States of America;

**"US dollar" or "US\$"** means currency in the form of United States dollars;

**"USEPA"** means United States Environmental Protection Agency;

**"VCP"** means the Maryland Department of Environment's Voluntary Cleanup Program;

**"VLGCs"** means Very Large Gas Carriers, the largest sub-class of fully refrigerated LPG carriers with capacity's typically above 70,000 M3;

**"Vopak"** means Vopak Development Canada Inc., a wholly-owned subsidiary of Royal Vopak;

**"Washington Gas"** means Washington Gas Light Company, a subsidiary of WGL that sells and delivers natural gas primarily to retail customers in the District of Columbia, Maryland and Virginia in accordance with tariffs approved by the PSC of DC, the PSC of MD, and the SCC of VA;

**"Washington Gas Resources"** means Washington Gas Resources Corporation, a subsidiary of WGL that owns the majority of the non-utility subsidiaries;

**"WCSB"** means Western Canada Sedimentary Basin;

**"WGL"** means WGL Holdings, Inc., an indirect subsidiary of AltaGas;

**"WGL Acquisition"** means the acquisition by AltaGas, indirectly through Merger Sub, of WGL through a merger of Merger Sub with and into WGL pursuant to the Merger Agreement, which closed on July 6, 2018;

**"WGL Energy Services"** means WGL Energy Services, Inc. (formerly Washington Gas Energy Services, Inc.), a subsidiary of Washington Gas Resources that sells natural gas and electricity to retail customers on an unregulated basis;

**"WGL Energy Systems"** means WGL Energy Systems, Inc. (formerly Washington Gas Energy Systems, Inc.), a subsidiary of Washington Gas Resources, which provides commercial energy efficient and sustainable solutions to government and commercial clients;

**"WGL Midstream"** means WGL Midstream, Inc., a former subsidiary of Washington Gas Resources that, prior to the divisive merger and sale of the majority of its assets on April 23, 2021, engaged in acquiring and optimizing natural gas storage and transportation assets; and

**"Younger"** means the Younger extraction plant and related facilities, AltaGas' interest being owned by its indirect wholly-owned subsidiary AltaGas Extraction and Transmission Limited Partnership.

## SCHEDULE A: AUDIT COMMITTEE MANDATE

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### I. PURPOSE

The Board of Directors (the “Board”) of AltaGas Ltd. (“AltaGas” or the “Corporation”) has established an Audit Committee (the “Committee”) to serve as the Audit Committee of the Board. The Committee is responsible for performing such duties as delegated by the Board to assist the Board in fulfilling its oversight role in relation to financial reporting and enterprise risk. This oversight role includes reviewing the quality and integrity of the Corporation’s financial statements, financial disclosure and internal controls over financial reporting, including compliance with legal and regulatory requirements; reviewing the qualifications, independence and performance of the external and internal auditors and reviewing the Corporation’s enterprise risk management program and management’s identification and mitigation of significant risks.

### II. MEMBERSHIP

The Board shall elect from its members not less than three (3) Directors to serve on the Committee (the “Members”) and shall appoint one such Member as Chair of the Committee.

Every Member must be:

- independent and financially literate (in accordance with National Instrument 52-110 – *Audit Committees* of the Canadian Securities Administrators (“NI 52-110”))
- and at least one Member should be an “audit committee financial expert” as such term is defined by the Securities and Exchange Commission.

No Member shall be an officer or employee of AltaGas or any subsidiary or affiliate of AltaGas.

Each Member shall hold office until the Member resigns or is replaced, whichever first occurs. Any Member may be removed or replaced at any time by the Board and shall cease to be a Member upon ceasing to be a Director of the Corporation. Where a vacancy occurs at any time in the membership of the Audit Committee, it may be filled by the Board on the recommendation of the Governance Committee, provided that the proposed Member meets the above criteria (and, if applicable in the circumstances where the vacancy was in relation to the sole “audit committee financial expert”, the proposed Member is also an “audit committee financial expert”). Provided the Committee includes not less than three Members, including an “audit committee financial expert” if required, it may continue to act in the event of a vacancy. When appointing a Member to the Committee, the Board shall take into consideration the number of other audit committees upon which the proposed Member sits.

The Corporate Secretary of AltaGas shall be secretary to the Committee unless the Committee directs otherwise.

### III. MEETINGS

The Committee shall convene no less than four times per year at such times and places as designated by its Chair or whenever a meeting is requested by a Member, the Board, the Chair of the Board or an officer of the Corporation. A minimum of twenty-four (24) hours’ notice of each meeting shall be given to each Member. Members may waive notice of the meeting in any manner, including through their attendance at the meeting. Members of management of the Corporation or any subsidiary or affiliate of the Corporation shall attend whenever requested to do so by a Member. The Committee shall have the right to determine who shall be present at any time during a meeting of the Committee.

A meeting of the Committee shall be duly convened if a majority of Members are present. Members may participate in a meeting of the Committee by means of such telephonic, electronic or other communication facilities as permits all persons participating in the meeting to communicate adequately with each other, and a Member participating in such a meeting by any such means is deemed to be present at that meeting.

In the absence of the Chair of the Committee, the Chair may delegate a member to chair the meeting. If a delegate is not selected by the Chair, members may choose one of the Members to be the chair of the meeting.

The external auditor will be given notice of all Committee meetings and be provided the opportunity to attend every meeting relating to quarterly and annual financial reporting.

The Committee will hold *in camera* sessions without management present, including with internal and external auditors, as may be deemed appropriate by the Members.

Minutes shall be kept of all meetings of the Committee by the Corporate Secretary of the Corporation or a designate of the Corporate Secretary, as approved by the Chair.

#### IV. DUTIES AND RESPONSIBILITIES OF THE CHAIR

The Chair of the Committee is responsible for:

1. providing leadership to the Committee and assisting the Committee in reviewing and monitoring its responsibilities;
2. working with management on the development of agendas;
3. ensuring, to the extent possible, the Committee has sufficient information to properly discharge its duties and responsibilities;
4. presiding over meetings and ensuring such meetings are conducted in an efficient, effective and focused manner;
5. together with the Board Chair, reviewing director expenses on a quarterly basis, and approving any exceptions to the Director Expense Policy in respect of the Chair of the Board;
6. advising the Committee of any finance, accounting or misappropriation matters brought to the Chair's attention;
7. facilitating information sharing with other Board committees as required to address matters of mutual interest or concern; and
8. reporting to the Board on the activities, decisions and recommendations of the Committee after each meeting.

#### V. DUTIES AND RESPONSIBILITIES OF THE COMMITTEE

The Committee is hereby delegated by the Board, as permitted and in accordance with the requirements of the *Canada Business Corporations Act*, the Articles and By-Laws of the Corporation and any legal or regulatory authority having jurisdiction, the authority to perform the following functions:

##### *Financial Reporting and Public Disclosure*

1. Approve and recommend to the Board for approval, the annual consolidated financial statements, including management's discussion and analysis and press release containing annual financial results.
2. Approve or recommend to the Board for approval, the interim consolidated financial statements, including management's discussion and analysis and press release containing interim financial results (provided that any declaration of dividends incorporated in the press release has been approved by the Board).
3. Review the analysis by management and the external auditor regarding financial reporting made in connection with the preparation of the consolidated financial statements.
4. Approve the financial information and financial related matters contained in public disclosure documents including information on audited or unaudited financial statements and external auditor appointment, services or fees, including such information contained in, prospectuses, annual information forms, and management information circulars.
5. Ensure adequate procedures are in place for review of public disclosure of financial information and periodically assess the adequacy of such procedures.

6. Approve any significant changes to the Corporation's accounting principles and procedures.
7. Review reports from auditors, and the audit committee or board of directors of subsidiaries that produce audited financial statements, relating to financial reporting of such subsidiaries.

#### *External Auditors*

8. On an annual basis, approve and recommend to the Board for approval, the appointment of the external auditor subject to shareholder approval.
9. Approve and recommend to the Board for approval any termination of the external auditor of the Corporation.
10. Approve the terms of the external auditor's annual engagement letter, including the proposed audit fee for the Corporation and its subsidiaries.
11. Review and pre-approve all non-audit services to be provided to the Corporation and its' subsidiaries by the external auditor. Between scheduled meetings, the Chair of the Committee is authorized to approve non-audit services and fees and management may approve up to an amount specified by the Committee from time to time, and all such approvals shall be reported to the Committee at its next scheduled meeting.
12. Approve the Corporation's policies with respect to the hiring of current and former partners and employees of the external auditors.
13. Review the experience and qualifications of the audit team and assess the performance and effectiveness of the external auditor in its provision of services.
14. Review the report pertaining to auditor independence prepared by the external auditor on an annual basis, which report shall delineate all relationships between the external auditor and the Corporation and its subsidiaries, and determine the auditor's independence.
15. Review and pre-approve the audit plans (and any changes) of the external auditor and determine the degree of coordination with the internal audit plan.
16. Oversee the work of the external auditor in the preparation of the auditor's report, including the resolution of any disagreements between management and the auditor regarding financial reporting.
17. Review other reports from the external auditor, as necessary.
18. Regularly meet independently with external auditor in the absence of management on matters of interest, including matters that the external auditor recommends bringing to the attention of the Committee or the Board.

#### *Internal Auditor*

19. Review the responsibilities, budget and staffing of the Corporation's internal audit function.
20. Approve the Internal Audit Charter and the internal audit plan and any changes thereto.
21. Assess the performance and effectiveness of the internal audit function and participate in succession planning for the head of internal audit.
22. Review the reports prepared periodically by the head of internal audit regarding the activities of the internal audit function, including any significant disagreements between internal auditor and management.
23. Receive summaries of significant reports to management prepared by the internal auditors and managements' responses (or the full report if requested).
24. Regularly meet independently with internal auditor in the absence of management on matters of interest, including matters that the internal auditor recommends bringing to the attention of the Board.

#### *Internal Control over Financial Reporting and Disclosure Controls*

25. Review the adequacy and effectiveness of the accounting and internal control policies and procedures, including internal controls over financial reporting, through inquiry and discussions with the external auditor, management and the internal auditor, including about the extent to which the scope of the internal and external audit plans can be relied upon to detect weakness in internal control policies, fraud or other illegal acts.
26. Review the effectiveness of procedures for the receipt, retention and resolution of complaints regarding accounting, internal accounting controls or auditing matters, and review any complaints raised by employees or others regarding accounting, internal accounting controls, financial reporting, auditing matters or otherwise relating to matters within the Committee's mandate.

27. Review management's periodic reports on the adequacy and effectiveness of the disclosure control policies and procedures of the Corporation.
28. Review with management and the external auditor the process for the certification of annual and interim financial reports in accordance with required securities legislation concerning the Corporation's internal controls over financial reporting and disclosure controls and procedures, the adequacy of such controls and any remedial steps being undertaken to address any material weaknesses or significant deficiencies in internal control over financial reporting.

#### *Risk Oversight*

29. On a quarterly basis, review the Corporation's enterprise risk management ("ERM") processes, including processes relating to management's identification of material risks, methods of risk analysis, and mitigation strategies.
30. On a quarterly basis, review the Corporation's top enterprise risks, changes in risk rankings, emerging risks and an update on related mitigation activities.
31. On a quarterly basis, review management's reporting on financial risk exposures, including commodity risk, credit risk of counterparties, and management's processes and practices for risk mitigation.
32. Review management's periodic reports on the status of material litigation, claims and contingencies.
33. Review the financial aspects of any transactions of the Corporation that involve related parties (other than wholly-owned subsidiaries).
34. On a quarterly basis, review management's reporting on information security matters, including processes for identifying and managing data, cyber and other information technology related risk and processes for the development of data security, training and compliance programs and practices.
35. Review the Corporation's insurance programs, at least annually.

#### *Policies and Mandate*

36. Approve key policies under the Code of Business Ethics relating to the Committee's mandate and the Commodity Risk Policy.
37. Review and recommend any material changes to the Delegation of Authority Policy.
38. On an annual basis, review the Committee mandate and recommend any changes.

#### *Pension and Benefits*

39. Oversee the significant financial aspects of pension and benefit plans that are delegated to the management Retirement and Savings Committee (the "RSC") to manage and administer.
40. Review, at least annually, the financial management activities of the RSC, including funding levels, investment decisions and changes to valuation assumptions performed by the RSC.
41. Review proposed changes to pension or benefit plans that may significantly impact financial matters relating to such plans and make recommendations to the Human Resources and Compensation Committee in relation thereto.
42. Approve the financial information that supports the calculation of financial metrics used to evaluate performance under incentive compensation plans and funding pools under compensation plans and report to the Human Resources and Compensation Committee.

#### *Other*

43. Annually review and approve the election of the end-user exemption from mandatory clearing, as defined in the Dodd-Frank Wall Street Reform and Consumer Protection Act, by the Corporation and its subsidiaries, and the provision of swap guarantees by the Corporation to one of its subsidiaries from time to time.
44. Review the solvency and liquidity tests used to support dividend declarations by the Corporation.
45. Review asset retirement obligations in relation to decommissioning, reclamation and remediation.
46. Receive updates on material tax policies, tax planning initiatives and tax audits or assessments.

47. Review management's process for certification under the *Extractive Sector Transparency Measures Act* (Canada), if applicable.
48. Review, approve or make recommendations in respect of any other matters considered necessary or appropriate in the context of the mandate of this Committee, or otherwise delegated to it by the Board from time to time.

#### VI. COMMITTEE TIMETABLE

The major activities of the Committee will be outlined in an annual schedule.

#### VII. OUTSIDE EXPERTS AND ADVISORS

The Committee is authorized, when deemed necessary or desirable, to engage independent counsel, outside experts and other advisors, at the Corporation's expense, to advise the Committee on any matter.

#### VIII. RELIANCE

Absent actual knowledge to the contrary (which shall be promptly reported to the Board), each member of the Committee shall be entitled to rely on (i) the integrity of those persons or organizations within and outside the Corporation from which it receives information, (ii) the accuracy of the financial and other information provided to the Committee by such persons or organizations, and (iii) representations made by management and the external auditor, as to any information technology, risk management, internal audit and other non-audit services provided by the external auditor to the Corporation and its subsidiaries.

*Approved by the Board on July 26, 2023.*



**AltaGas**

 **WGL**

 **SEMCOENERGY**

**Petrogas**

For investor relations inquiries contact:

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📍 1700, 355 - 4<sup>th</sup> Avenue SW, Calgary, Alberta T2P 0J1

Sierra Club Exhibit (A)-5

Formal Case No. 1180

Witness Karl R. Rábago

PUBLIC SERVICE COMMISSION OF THE DISTRICT OF COLUMBIA

WASHINGTON GAS LIGHT COMPANY

FORMAL CASE NO. 1180

WASHINGTON GAS'S RESPONSE  
AND/OR NOTICE OF OBJECTION/UNAVAILABILITY TO  
THE OFFICE OF PEOPLE'S COUNSEL

OPC DATA REQUEST NO. 16

QUESTION NO. 16-1

- Q.** With respect to witness Steffes' supplemental direct testimony, Exh. WG (2A) at 6:13, please identify with specificity the "District's climate policies" to which you refer.

**WASHINGTON GAS'S RESPONSE**

11/27/2024

- A.** At this time, the Company is unaware of any District climate policy that has an impact on the Company's planned capital investments, expected life assets, or depreciation rates.

SPONSOR: James D. Steffes  
Senior VP, Regulatory Policy

Sierra Club Exhibit (A)-6

Formal Case No. 1180

Witness Karl R. Rábago

PUBLIC SERVICE COMMISSION OF THE DISTRICT OF COLUMBIA

WASHINGTON GAS LIGHT COMPANY

FORMAL CASE NO. 1180

WASHINGTON GAS'S RESPONSE  
AND/OR NOTICE OF OBJECTION/UNAVAILABILITY TO  
THE OFFICE OF PEOPLE'S COUNSEL

OPC DATA REQUEST NO. 16

QUESTION NO. 16-2

- Q.** With respect to witness Steffes' supplemental direct testimony, Exh. WG (2A) at 6:12 15, please provide all documents, including studies, analyses, or other assessments, that support or otherwise form the basis for the Company's position that the "District's climate policies" have "no impact to the Company's planned capital investments." If the Company's response is that there are no such documents, then please describe fully the bases for the Company's position.

**WASHINGTON GAS'S OBJECTION**

11/18/2024

Washington Gas objects to this request to the extent it seeks privileged information, a legal conclusion, or legal research. Subject to the foregoing, Washington Gas will provide a response to the data request.

**WASHINGTON GAS'S RESPONSE**

11/27/2024

- A.** At this time, the Company is unaware of any District climate policy that has an impact on the Company's planned capital investments and thus the Company does not have materials responsive to this request.

SPONSOR: James D. Steffes  
Senior VP, Regulatory Affairs

PUBLIC SERVICE COMMISSION OF THE DISTRICT OF COLUMBIA

WASHINGTON GAS LIGHT COMPANY

FORMAL CASE NO. 1180

WASHINGTON GAS'S RESPONSE  
AND/OR NOTICE OF OBJECTION/UNAVAILABILITY TO  
THE OFFICE OF PEOPLE'S COUNSEL

OPC DATA REQUEST NO. 16

QUESTION NO. 16-3

- Q.** With respect to witness Steffes' supplemental direct testimony, Exh. WG (2A) at 6:12 15, please provide all documents in your possession, including studies, analyses, or other assessments that address whether the "District's climate policies" will have an impact on the Company's capital investments.

**WASHINGTON GAS'S OBJECTION**

11/18/2024

Washington Gas objects to this request to the extent it seeks privileged information, a legal conclusion, or legal research. Subject to the foregoing, Washington Gas will provide a response to the data request.

**WASHINGTON GAS'S RESPONSE**

11/27/2024

- A.** At this time, the Company is unaware of any District climate policy that has an impact on the Company's planned capital investments and thus the Company does not have materials responsive to this request.

SPONSOR: James D. Steffes  
Senior VP, Regulatory Affairs

Sierra Club Exhibit (A)-7

Formal Case No. 1180

Witness Karl R. Rábago

PUBLIC SERVICE COMMISSION OF THE DISTRICT OF COLUMBIA

WASHINGTON GAS LIGHT COMPANY

FORMAL CASE NO. 1180

WASHINGTON GAS'S RESPONSE  
AND/OR NOTICE OF OBJECTION/UNAVAILABILITY TO  
THE OFFICE OF PEOPLE'S COUNSEL

OPC DATA REQUEST NO. 16

QUESTION NO. 16-7

- Q.** With respect to witness White's direct testimony, Exh. WG (G) at 9:1-3, please state whether the "informed judgment and expectations about the future" included consideration of the effect of the District's climate policies on the expected lives of the company's distribution assets. If so, please explain how such consideration affected—or why it did not affect—witness White's recommendations. If no consideration was given to the effect of the District's climate policies on the expected lives of the company's distribution assets, please explain why not.

**WASHINGTON GAS'S RESPONSE**

11/27/2024

- A.** "Informed judgment and expectations about the future" did include a consideration of the effect of the District's climate policies on the expected lives of the Company's distribution assets. Foster Associates was informed by WGL, however, that far more extensive planning, engineering and economic studies will be needed before the Company can speculate how the District's climate policies would (or could) impact distribution assets. Dr. White's recommendations regarding expected service-lives of distribution assets, therefore, were not impacted by the District's climate policies.

SPONSOR: Ronald E. White, Ph.D.  
President  
Foster Associates Consultants, LLC



Sierra Club Exhibit (A)-8

Formal Case No. 1180

Witness Karl R. Rábago

PUBLIC SERVICE COMMISSION OF THE DISTRICT OF COLUMBIA

WASHINGTON GAS LIGHT COMPANY

FORMAL CASE NO. 1180

WASHINGTON GAS'S RESPONSE  
AND/OR NOTICE OF OBJECTION/UNAVAILABILITY TO  
THE OFFICE OF PEOPLE'S COUNSEL

OPC DATA REQUEST NO. 1

QUESTION NO. 1-2A

**Q. Rate Proposal.** Please respond to the following:

- a. Provide all analyses conducted by or for the Company which demonstrates the impact the Company's rate proposals will have on customers' bills.
- b. Provide all analyses prepared by or for the Company that compares its present or proposed rates to other gas distribution companies.
- c. Provide all analyses prepared by or for the Company that examine the impacts that its rate proposal will have on customer affordability.
- d. For each rate class, provide the percentage of an average customer bill (a) collected via surcharges, riders, and tracker mechanisms and (b) via fixed versus variable charges.

**WASHINGTON GAS'S RESPONSE**

10/04/2024

- A.**
- a. Please see Exhibit WG (O)-2.
  - b. The witness is not aware of any such studies in the Company's possession; however, service rates are publicly available on most utility websites.
  - c. The witness is not aware of any such studies in the Company's possession.
  - d. See the response to OPC Data Request 1-2A (a).

SPONSOR: Andrew Lawson  
Manager – Regulatory Affairs

Sierra Club Exhibit (A)-9

Formal Case No. 1180

Witness Karl R. Rábago

PUBLIC SERVICE COMMISSION OF THE DISTRICT OF COLUMBIA

WASHINGTON GAS LIGHT COMPANY

FORMAL CASE NO. 1180

WASHINGTON GAS'S RESPONSE  
AND/OR NOTICE OF OBJECTION/UNAVAILABILITY TO  
THE OFFICE OF PEOPLE'S COUNSEL

OPC DATA REQUEST NO. 7

QUESTION NO. 7-5

- Q. Sales to Customers.** Reference WGL Witness D'Ascendis' Direct Testimony (Exhibit WG (C)) at 12:7-9 and n.5 providing that WGL provides natural gas distribution services to approximately 165,000 customers in Washington, D.C. Please provide WGL's sales of gas distribution service to residential, commercial, and industrial customers for each month (or most frequently available) from January 1, 2018, to the most currently available.

**WASHINGTON GAS'S RESPONSE**

11/19/2024

- A.** See Attachment 1.

SPONSOR: Katina Banks  
Manager of Utility Revenue Accounting

Washington Gas  
Sales to Customers

	Variable amount												
<b>Jurisdiction Code</b>	DISTRICT OF COLUMBIA												
<b>Fiscal year/period</b>	V9/001/2018	V9/002/2018	V9/003/2018	V9/004/2018	V9/005/2018	V9/006/2018	V9/007/2018	V9/008/2018	V9/009/2018	V9/010/2018	V9/011/2018	V9/012/2018	<b>Result</b>
<b>Rate Category</b>	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
Gas DC Special Contract	224,768.70	0.00	364,350.69	214,468.88	101,471.91	-101,471.91	151,854.79	18,969.22	18,762.41	12,094.38	80,663.91	180,036.25	<b>1,265,969.23</b>
Gas DC Special Contract FIRM	311,349.89	0.00	585,852.91	308,938.18	301,329.54	-301,329.54	906,989.31	308,697.48	307,499.81	301,319.73	311,968.31	303,279.33	<b>3,645,894.95</b>
Gas DC CI-Delivery Heating	3,094,886.10	2,927,303.04	2,609,218.63	2,476,762.61	1,210,742.59	1,262,531.12	874,830.99	937,526.66	407,824.43	832,317.79	1,536,718.05	1,775,796.04	<b>19,946,458.05</b>
Gas DC CI-Delivery Heating and Cooling	16,740.75	12,189.39	12,065.67	8,498.92	6,812.31	5,618.91	5,556.82	5,859.82	5,215.76	6,899.99	10,203.78	8,668.71	<b>104,330.83</b>
Gas DC CI-Delivery Non-Heating/Cooling	440,936.53	616,958.32	352,949.83	349,625.46	253,013.30	478,423.81	-259,045.18	200,053.11	186,911.50	218,218.71	292,214.43	231,698.78	<b>3,361,958.60</b>
Gas DC CI-Sales Heating	5,534,318.34	4,683,784.86	3,300,316.45	3,389,583.72	2,003,992.69	2,009,287.48	806,808.92	1,160,836.44	1,091,759.31	1,466,119.69	2,480,112.58	3,699,551.08	<b>31,626,471.56</b>
Gas DC CI-Sales Heating and Cooling	21,256.22	23,868.74	19,031.83	18,824.97	12,900.10	11,537.43	10,585.11	9,660.41	11,007.13	12,514.80	18,069.56	21,861.07	<b>191,117.37</b>
Gas DC CI-Sales Non Heating/Cooling	721,102.42	644,218.59	566,276.80	516,500.47	361,835.94	342,858.50	307,454.28	394,886.85	308,476.07	310,732.16	459,837.62	499,160.68	<b>5,433,340.38</b>
Gas DC GMA-Delivery Heating	1,757,924.66	1,460,548.13	1,412,954.21	1,063,270.90	501,670.00	334,084.66	293,590.04	294,829.02	233,802.73	315,459.16	882,360.98	982,696.05	<b>9,533,190.54</b>
Gas DC GMA-Delivery Non-Heating/Cooling	177,391.30	138,021.80	136,060.40	120,209.12	82,614.30	80,363.76	58,155.11	58,468.08	58,426.61	72,448.04	106,146.90	91,665.62	<b>1,179,971.04</b>
Gas DC GMA-Sales Heating	1,833,923.12	1,911,595.70	1,477,837.87	1,387,062.24	767,394.94	285,579.21	289,834.32	237,428.99	402,746.23	331,436.13	928,426.74	1,387,257.55	<b>11,240,523.04</b>
Gas DC GMA-Sales Heating and Cooling	419.53	322.41	297.58	182.93	77.26	55.02	46.72	48.57	46.62	68.90	199.22	230.04	<b>1,994.80</b>
Gas DC GMA-Sales Non Heating/Cooling	240,943.69	238,742.13	203,065.51	185,512.10	144,372.90	108,174.01	92,800.10	91,847.39	93,079.38	102,165.47	163,868.84	180,798.55	<b>1,845,370.07</b>
Gas DC INTR-Delivery	2,648,234.01	4,132,517.71	1,952,680.70	2,524,406.08	1,818,775.66	396,404.66	2,038,876.78	1,072,530.30	1,047,824.29	937,876.51	1,485,482.88	1,844,923.09	<b>21,900,532.67</b>
Gas DC INTR-Sales	141,115.54	288,040.40	101,333.93	167,351.36	65,719.10	17,284.14	10,600.53	13,285.19	14,151.03	12,894.48			<b>831,775.70</b>
Gas DC Res-Delivery Heating	1,482,775.29	1,248,308.99	1,023,371.82	910,682.05	504,838.99	310,349.69	278,953.22	265,228.58	261,117.46	291,953.86	636,710.77	725,159.76	<b>7,939,450.48</b>
Gas DC Res-Delivery Heating and Cooling	851.00	695.84	582.68	508.38	268.04	152.72	136.48	156.02	160.95	198.74	441.73	518.12	<b>4,670.70</b>
Gas DC Res-Delivery Non Heat/Cool IMA	6,973.38	7,724.50	6,104.60	7,032.35	4,306.70	4,261.34	4,036.94	3,887.96	3,808.23	3,866.57	4,102.80	2,859.96	<b>58,965.33</b>
Gas DC Res-Delivery Non Heat/Cool Other	32,040.57	27,361.89	22,917.82	20,035.61	13,398.20	9,648.09	9,332.50	8,518.57	8,458.52	9,260.42	15,219.72	15,592.35	<b>191,784.26</b>
Gas DC Res-Sales Heating	18,882,621.80	17,002,426.18	12,788,393.57	11,242,400.00	5,664,115.49	3,296,107.41	2,928,613.38	2,913,793.78	2,928,983.72	3,426,033.83	8,207,234.66	12,219,046.76	<b>101,499,770.58</b>
Gas DC Res-Sales Heating and Cooling	34,190.21	30,322.63	24,398.62	23,022.41	13,114.44	8,009.46	7,748.11	8,301.66	9,290.18	10,592.98	23,181.13	33,879.00	<b>226,050.83</b>
Gas DC Res-Sales Non Heat/Cool IMA	231,252.08	223,456.76	201,411.90	192,558.11	194,204.88	160,419.37	150,354.45	150,145.10	151,347.12	156,955.62	174,913.34	153,301.31	<b>2,140,320.04</b>
Gas DC Res-Sales Non Heat/Cool Other	379,137.00	314,517.59	254,747.84	211,998.76	118,232.45	78,093.16	66,894.69	63,667.84	67,237.46	79,094.02	168,373.06	224,711.54	<b>2,026,705.41</b>
<b>Overall Result</b>	<b>38,215,152.13</b>	<b>35,932,925.60</b>	<b>27,416,221.86</b>	<b>25,339,435.61</b>	<b>14,145,201.73</b>	<b>8,796,442.50</b>	<b>9,035,008.41</b>	<b>8,218,627.04</b>	<b>7,617,936.95</b>	<b>8,910,521.98</b>	<b>17,986,451.01</b>	<b>24,582,691.64</b>	<b>226,196,616.46</b>

Washington Gas  
Sales to Customers

	Variable amount												
<b>Jurisdiction Code</b>	DISTRICT OF COLUMBIA												
<b>Fiscal year/period</b>	V9/001/2019	V9/002/2019	V9/003/2019	V9/004/2019	V9/005/2019	V9/006/2019	V9/007/2019	V9/008/2019	V9/009/2019	V9/010/2019	V9/011/2019	V9/012/2019	<b>Result</b>
<b>Rate Category</b>	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
Gas DC Special Contract	238,399.01	342,796.93	194,917.21	193,788.35	115,781.72	77,555.53	38,214.72	49,588.89	36,461.79	100.00	97,559.35	-528,548.41	<b>856,615.09</b>
Gas DC Special Contract FIRM	315,198.42	315,198.42	275,731.50	304,747.81	293,503.45	299,570.06	288,780.65	300,442.59	299,570.06	301,303.00	318,637.39	174,826.13	<b>3,487,509.48</b>
Gas DC CI-Delivery Heating	3,288,173.34	3,258,779.71	3,228,230.69	1,605,347.47	1,322,509.67	723,862.84	687,008.56	802,117.21	745,648.78	808,644.90	1,723,832.25	2,809,758.47	<b>21,003,913.89</b>
Gas DC CI-Delivery Heating and Cooling	12,177.48	15,569.50	11,503.60	8,179.26	5,389.63	5,259.44	5,710.10	4,525.33	8,026.48	6,571.44	12,581.29	13,114.97	<b>108,608.52</b>
Gas DC CI-Delivery Non-Heating/Cooling	366,139.23	405,127.99	344,956.92	297,177.51	248,580.02	263,789.61	136,551.88	173,955.39	200,938.08	194,325.91	341,040.03	397,985.40	<b>3,370,567.97</b>
Gas DC CI-Sales Heating	4,724,843.13	5,627,588.55	4,899,058.27	3,507,292.98	1,873,361.20	1,102,660.13	1,102,753.16	1,118,761.44	921,920.54	1,119,497.89	2,269,807.31	4,110,230.16	<b>32,377,774.76</b>
Gas DC CI-Sales Heating and Cooling	32,628.16	51,503.19	30,998.03	12,337.85	35,193.30	22,579.14	22,311.02	17,632.27	14,307.42	13,873.16	26,895.53	10,572.59	<b>290,831.66</b>
Gas DC CI-Sales Non Heating/Cooling	641,598.11	669,815.25	640,670.07	483,883.32	337,477.92	344,452.59	293,112.96	355,108.98	184,751.79	332,568.45	423,634.40	590,838.27	<b>5,297,912.11</b>
Gas DC GMA-Delivery Heating	1,412,910.63	1,582,878.25	1,299,142.52	968,837.73	446,234.99	285,309.44	246,688.98	234,054.22	236,439.78	255,879.50	863,480.29	1,367,087.94	<b>9,198,944.27</b>
Gas DC GMA-Delivery Non-Heating/Cooling	131,108.20	157,072.90	130,124.86	107,498.01	75,852.97	75,155.10	59,911.22	54,986.61	62,873.08	67,971.82	123,353.47	149,280.15	<b>1,195,188.39</b>
Gas DC GMA-Sales Heating	1,705,714.40	2,106,590.35	1,659,045.64	1,331,718.17	642,967.97	463,524.46	336,325.96	320,510.23	328,221.29	332,877.44	928,462.44	1,585,890.97	<b>11,741,849.32</b>
Gas DC GMA-Sales Heating and Cooling	312.62	319.78	229.83	101.53	11,314.13	502.49	369.33	366.20	298.08	319.89	543.44	845.13	<b>15,522.45</b>
Gas DC GMA-Sales Non Heating/Cooling	236,015.79	276,636.92	216,729.29	193,086.33	168,924.97	139,495.13	105,056.63	114,080.88	82,964.11	107,148.64	148,704.99	197,184.04	<b>1,986,027.72</b>
Gas DC INTR-Delivery	2,467,157.47	2,742,508.57	2,366,368.76	2,259,223.78	1,349,651.68	1,126,161.78	1,052,375.36	989,419.11	1,041,381.66	1,158,647.91	1,353,394.38	2,247,559.90	<b>20,153,850.36</b>
Gas DC INTR-No Supplier (90 Days)			120,763.86	48,972.23	22,657.10	7,013.98	4,990.23	6,091.18	7,761.02	7,460.10	16,393.85	40,854.95	<b>282,958.50</b>
Gas DC INTR-Sales	7,016.07	0.00	0.00		0.00	0.00	200.00	200.00	-200.00		0.00	91.72	<b>7,307.79</b>
Gas DC Res-Delivery Heating	1,055,924.39	1,278,685.66	1,002,850.41	720,760.67	380,326.16	302,537.49	266,798.68	255,289.84	260,180.25	287,318.39	628,212.84	971,650.34	<b>7,410,535.12</b>
Gas DC Res-Delivery Heating and Cooling	947.33	1,168.21	945.53	596.58	400.10	-43.50	161.66	160.86	164.69	229.07	569.78	1,188.90	<b>6,489.21</b>
Gas DC Res-Delivery Non Heat/Cool IMA	4,306.49	6,689.03	4,981.81	6,985.68	4,555.06	4,078.10	3,915.75	3,886.05	4,157.21	4,696.04	5,402.84	9,661.96	<b>63,316.02</b>
Gas DC Res-Delivery Non Heat/Cool Other	22,499.96	27,592.23	21,727.36	16,493.11	10,039.11	9,292.39	8,238.71	8,054.29	8,302.13	8,618.56	14,779.95	22,362.53	<b>178,000.33</b>
Gas DC Res-Sales Heating	15,483,955.88	19,152,219.73	14,305,351.27	10,191,007.01	4,781,836.44	3,738,368.77	3,062,117.43	3,031,258.74	2,889,419.55	3,122,914.33	7,398,612.20	13,288,478.31	<b>100,445,539.66</b>
Gas DC Res-Sales Heating and Cooling	43,517.77	52,665.41	45,407.74	26,740.58	16,672.34	10,865.49	5,214.59	11,368.45	15,123.92	11,989.58	26,119.96	45,059.04	<b>310,744.87</b>
Gas DC Res-Sales Non Heat/Cool IMA	211,187.93	243,732.24	209,666.06	209,821.81	170,686.36	146,593.87	157,613.42	157,509.13	127,673.70	83,637.74	169,262.46	195,875.37	<b>2,083,260.09</b>
Gas DC Res-Sales Non Heat/Cool Other	294,542.42	361,324.00	275,993.18	190,007.28	100,508.66	82,197.76	68,351.60	65,918.82	65,697.37	71,189.31	156,297.64	258,682.07	<b>1,990,710.11</b>
<b>Overall Result</b>	<b>32,696,274.23</b>	<b>38,676,462.82</b>	<b>31,285,394.41</b>	<b>22,684,605.05</b>	<b>12,414,424.95</b>	<b>9,230,782.09</b>	<b>7,952,772.60</b>	<b>8,075,286.71</b>	<b>7,542,082.78</b>	<b>8,297,783.07</b>	<b>17,047,578.08</b>	<b>27,960,530.90</b>	<b>223,863,977.69</b>

Exhibit Sierra Club (A)-9  
Formal Case No. 1180  
Witness Rábago  
Page 4 of 8

Formal Case No. 1180  
OPC DR 7-5  
Attachment 1  
Page 3 of 7

Washington Gas  
Sales to Customers

	Variable amount												
<b>Jurisdiction Code</b>	DISTRICT OF COLUMBIA												
<b>Fiscal year/period</b>	V9/001/2020	V9/002/2020	V9/003/2020	V9/004/2020	V9/005/2020	V9/006/2020	V9/007/2020	V9/008/2020	V9/009/2020	V9/010/2020	V9/011/2020	V9/012/2020	<b>Result</b>
<b>Rate Category</b>	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
Gas DC Special Contract	371,950.39	230,813.55	187,798.69	148,565.81	130,821.03	47,910.86	66,018.19		97,095.17	63,891.53	26,525.83	60,113.88	<b>1,431,504.93</b>
Gas DC Special Contract FIRM	708,818.34	360,382.90	338,604.29	359,041.81	342,831.46	355,847.63	341,303.65		708,798.31	335,640.59	346,759.77	362,758.28	<b>4,560,787.03</b>
Gas DC CI-Delivery CHP								571,736.32	36,023.97	33,640.09	54,375.03	80,061.01	<b>775,836.42</b>
Gas DC CI-Delivery Heating	3,185,656.88	3,046,148.38	2,797,707.08	1,858,777.61	1,188,049.92	1,211,955.87	682,755.94	776,987.64	733,967.63	847,144.51	1,365,764.23	2,519,825.50	<b>20,214,741.19</b>
Gas DC CI-Delivery Heating and Cooling	12,339.14	13,303.01	8,839.94	1,848.30	4,735.11	5,308.49	1,712.48	3,056.87	19,447.85	-5,646.30	5,948.85	14,361.71	<b>85,255.45</b>
Gas DC CI-Delivery Non-Heating/Cooling	404,087.18	399,037.95	396,124.71	151,938.41	161,520.43	110,055.66	116,683.84	113,931.83	131,495.62	118,204.93	155,379.21	265,650.08	<b>2,524,109.85</b>
Gas DC CI-Sales Heating	4,465,640.71	2,628,458.21	4,808,010.94	2,213,189.30	1,674,783.24	1,184,101.79	682,411.71	1,043,841.61	958,395.49	1,264,342.35	1,707,943.63	2,926,152.40	<b>25,557,271.38</b>
Gas DC CI-Sales Heating and Cooling	42,013.38	31,508.21	30,574.18	17,015.23	13,972.22	12,008.95	26,368.29	14,214.65	16,936.81	17,086.45	20,270.32	35,191.97	<b>277,160.66</b>
Gas DC CI-Sales Non Heating/Cooling	566,206.61	544,013.17	417,219.06	322,690.26	209,183.24	215,081.03	220,707.05	194,073.69	213,352.50	254,396.72	323,319.39	379,878.42	<b>3,860,121.14</b>
Gas DC GMA-Delivery Heating	1,466,890.18	1,493,550.86	1,208,187.79	1,007,091.25	789,901.54	346,457.00	286,078.72	383,386.07	269,377.12	327,080.66	661,093.67	1,264,396.19	<b>9,503,491.05</b>
Gas DC GMA-Delivery Non-Heating/Cooling	152,765.51	162,161.11	125,437.85	101,452.10	122,296.58	86,584.73	71,661.97	68,975.75	75,257.74	75,816.90	109,516.95	136,226.49	<b>1,288,153.68</b>
Gas DC GMA-Sales Heating	1,655,546.20	1,634,608.63	1,287,841.19	1,187,929.79	899,275.22	556,521.94	335,024.20	303,738.23	320,075.08	403,708.87	748,602.64	1,185,701.97	<b>10,518,573.96</b>
Gas DC GMA-Sales Heating and Cooling	813.21	870.34	692.22	736.28	543.95	446.74	387.38	350.58	342.95	359.96	537.03	641.19	<b>6,721.83</b>
Gas DC GMA-Sales Non Heating/Cooling	205,975.14	200,853.79	177,720.28	192,261.89	146,762.72	103,484.24	97,110.39	82,346.03	80,743.06	88,884.37	132,975.05	153,299.59	<b>1,662,416.55</b>
Gas DC INTR-Delivery	2,547,775.97	2,590,771.27	2,381,514.79	1,851,958.36	1,667,491.34	1,370,891.45	1,203,715.96	1,250,453.83	1,260,436.50	1,242,196.81	1,418,645.20	1,803,912.97	<b>20,589,764.45</b>
Gas DC INTR-No Supplier (90 Days)	43,827.91	44,632.97	83,826.97	-55,732.43	11,489.13	2,600.63	2,600.00	142,245.93	325.00		4,911.97	-40.65	<b>281,012.43</b>
Gas DC INTR-Sales	0.00	25,710.97	100.00	100.00	100.00	100.00	2,725.16	100.00		100.00	0.00		<b>29,036.13</b>
Gas DC Res-Delivery Heating	1,260,231.49	1,186,339.14	928,806.65	697,162.18	796,762.15	462,186.02	349,771.53	327,863.18	336,459.72	364,623.26	582,948.13	951,592.58	<b>8,244,746.03</b>
Gas DC Res-Delivery Heating and Cooling	1,118.17	1,180.86	997.53	846.29	1,208.33	614.77	432.95	440.63	427.87	525.42	828.00	1,598.06	<b>10,218.88</b>
Gas DC Res-Delivery Non Heat/Cool IMA	9,406.28	10,006.94	7,071.92	8,114.64	8,725.45	7,696.62	6,807.82	6,657.84	6,769.56	6,534.22	7,159.42	9,193.38	<b>94,144.09</b>
Gas DC Res-Delivery Non Heat/Cool Other	25,492.66	24,492.06	20,199.23	15,645.76	17,752.59	12,432.68	10,097.01	9,434.43	9,795.38	10,434.36	14,353.11	20,390.19	<b>190,519.46</b>
Gas DC Res-Sales Heating	14,248,164.83	13,836,966.52	10,225,631.26	7,755,412.07	7,735,786.31	4,579,731.48	3,364,453.88	3,219,671.43	3,107,135.35	3,768,099.89	6,271,571.26	10,249,562.29	<b>88,362,186.57</b>
Gas DC Res-Sales Heating and Cooling	49,689.67	48,041.45	36,829.27	28,476.82	27,201.02	16,208.32	11,772.33	12,528.08	13,552.87	9,657.10	23,943.32	38,120.38	<b>316,020.63</b>
Gas DC Res-Sales Non Heat/Cool IMA	204,501.30	201,747.79	205,832.38	188,819.66	173,704.89	168,040.03	157,823.23	259,551.17	159,680.00	155,432.66	174,003.26	180,220.39	<b>2,229,356.76</b>
Gas DC Res-Sales Non Heat/Cool Other	278,978.22	271,144.23	208,453.96	159,968.68	163,782.32	98,972.16	76,075.54	70,532.03	71,670.67	83,355.08	130,124.02	209,477.81	<b>1,822,534.72</b>
<b>Overall Result</b>	<b>31,907,889.37</b>	<b>28,986,744.31</b>	<b>25,884,022.18</b>	<b>18,213,310.07</b>	<b>16,288,680.19</b>	<b>10,955,239.09</b>	<b>8,114,499.22</b>	<b>8,856,117.82</b>	<b>8,627,562.22</b>	<b>9,465,835.43</b>	<b>14,287,499.29</b>	<b>22,848,286.08</b>	<b>204,435,685.27</b>

Washington Gas  
Sales to Customers

	Variable amount													
Jurisdiction Code	DISTRICT OF COLUMBIA													
Fiscal year/period	V9/001/2021	V9/002/2021	V9/003/2021	V9/004/2021	V9/005/2021	V9/006/2021	V9/007/2021	V9/008/2021	V9/009/2021	V9/010/2021	V9/011/2021	V9/012/2021	Result	
Rate Category	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
Gas DC Special Contract	205,745.01	225,844.49	246,325.20	166,723.42	127,565.40	90,576.38	0.00	128,133.08	60,905.20	59,898.27	36,048.83	142,908.13	1,490,673.41	
Gas DC Special Contract FIRM	370,358.70	372,142.72	345,969.49	376,648.46	342,235.24	355,499.83	0.00	718,237.89	365,168.73	352,360.79	355,497.16	363,862.74	4,317,981.75	
Gas DC CI-Delivery CHP	121,755.23	97,565.77	92,514.19	92,089.35	54,418.07	25,732.64	21,700.04	25,020.60	38,063.44	31,846.98	75,817.93	110,171.04	786,695.28	
Gas DC CI-Delivery Heating	3,069,309.32	3,128,158.52	3,392,152.42	2,171,353.24	1,411,471.18	902,593.22	897,579.18	1,056,088.70	724,269.11	1,066,395.44	1,744,504.98	2,745,114.63	22,308,989.94	
Gas DC CI-Delivery Heating and Cooling	14,647.72	15,070.21	9,480.60	5,244.66	7,364.72	3,960.46	7,295.64	7,367.85	7,497.76	8,303.98	10,765.44	10,106.95	107,105.99	
Gas DC CI-Delivery Non-Heating/Cooling	331,752.97	339,112.86	322,194.60	211,479.63	201,377.23	117,808.53	149,598.87	138,808.34	154,271.26	176,779.11	244,645.20	319,350.68	2,707,179.28	
Gas DC CI-Sales Heating	4,466,367.25	4,941,129.74	5,008,509.08	3,292,769.82	2,245,484.17	1,557,176.87	1,497,467.16	1,615,973.91	1,128,444.16	1,643,808.08	2,834,747.31	4,299,192.80	34,531,070.35	
Gas DC CI-Sales Heating and Cooling	32,814.15	54,315.09	41,711.91	29,427.72	27,399.57	22,955.86	25,888.11	20,075.89	19,570.18	20,729.77	36,069.75	44,050.12	375,008.12	
Gas DC CI-Sales Non Heating/Cooling	483,651.70	494,214.60	552,689.78	400,630.24	357,816.93	344,868.03	320,345.35	436,472.36	326,962.73	187,398.07	460,419.45	506,850.18	4,872,319.42	
Gas DC GMA-Delivery Heating	1,633,969.25	1,642,373.77	1,474,210.73	1,079,350.34	692,360.24	358,511.86	315,707.25	301,293.79	300,710.11	316,887.15	799,896.52	1,300,070.70	10,215,341.71	
Gas DC GMA-Delivery Heating and Cooling	6,177.11	9,188.55	3,078.91	2,477.61	1,338.96	1,025.81	1,023.76	931.37	1,167.54	1,230.60	2,843.36	4,041.56	34,525.14	
Gas DC GMA-Delivery Non-Heating/Cooling	170,264.42	171,336.15	163,440.79	128,776.07	103,496.33	81,511.99	74,829.27	67,558.65	73,311.46	74,780.04	128,083.55	150,553.58	1,387,942.30	
Gas DC GMA-Sales Heating	1,723,284.40	1,802,045.55	1,841,760.44	1,478,635.88	1,115,309.85	522,901.36	444,543.67	369,805.93	413,416.07	408,070.91	1,010,589.58	1,699,561.08	12,829,924.72	
Gas DC GMA-Sales Heating and Cooling	833.16	913.42	887.88	3,040.31	2,136.21	1,530.20	1,860.14	1,617.74	1,604.83	1,702.33	2,038.90	2,631.49	20,796.61	
Gas DC GMA-Sales Non Heating/Cooling	208,128.60	204,707.02	240,646.45	210,496.31	170,962.70	164,624.44	106,175.24	108,640.18	102,536.58	108,775.42	187,468.09	215,067.67	2,028,228.70	
Gas DC INTR-Delivery	2,598,942.07	2,724,575.78	2,627,892.62	2,276,986.90	1,433,647.72	1,186,840.75	1,111,377.92	1,064,321.88	1,149,338.59	1,175,763.86	1,245,759.35	1,921,354.05	20,516,801.49	
Gas DC INTR-No Supplier (90 Days)	6,699.96	6,979.37	8,399.28	14,044.02	9,543.42	2,514.14	-2,514.14	5,646.91	1,253.63	11,924.50	18,193.03	54,263.42	136,947.54	
Gas DC INTR-Sales												135.67	135.67	
Gas DC Res-Delivery Heating	1,330,729.73	1,349,850.19	1,187,914.97	773,086.94	618,134.86	413,216.08	356,378.06	346,298.68	341,378.57	386,685.27	643,662.39	1,209,172.20	8,956,507.94	
Gas DC Res-Delivery Heating and Cooling	1,898.21	2,844.91	1,924.40	1,198.10	961.93	589.33	511.84	487.34	467.42	548.35	1,057.92	1,885.35	14,375.10	
Gas DC Res-Delivery Non Heat/Cool IMA	11,629.43	11,849.92	11,910.53	9,602.52	8,685.30	7,927.69	7,544.98	7,431.75	7,838.72	8,265.89	9,962.52	13,570.39	116,219.64	
Gas DC Res-Delivery Non Heat/Cool Other	27,980.86	28,008.63	25,199.37	18,118.31	14,977.16	11,948.03	10,525.24	10,278.19	10,439.54	11,421.21	16,071.77	25,309.38	210,277.69	
Gas DC Res-Sales Heating	15,902,784.44	16,342,540.41	16,121,584.05	10,097,294.62	6,771,783.02	4,556,479.31	3,930,991.92	3,722,606.18	3,611,421.56	3,962,674.54	8,170,295.99	13,637,299.77	106,827,755.81	
Gas DC Res-Sales Heating and Cooling	57,252.30	59,366.53	58,348.92	37,547.60	27,811.95	19,329.26	17,329.72	16,058.11	16,202.64	18,350.24	34,021.07	56,595.74	418,214.08	
Gas DC Res-Sales Non Heat/Cool IMA	209,076.54	206,822.22	216,790.94	197,713.05	184,016.00	143,037.54	167,925.05	190,928.65	132,701.61	142,386.40	186,754.02	198,010.54	2,176,162.56	
Gas DC Res-Sales Non Heat/Cool Other	308,180.34	317,585.03	308,202.26	196,580.33	145,657.02	97,710.24	84,215.33	76,855.04	78,184.55	90,148.34	173,879.75	264,348.06	2,141,546.29	
Overall Result	33,294,232.87	34,548,541.45	34,303,739.81	23,271,315.45	16,075,955.18	10,990,869.85	9,548,299.60	10,436,939.01	9,067,125.99	10,267,135.54	18,429,093.86	29,295,477.92	239,528,726.53	



Washington Gas  
Sales to Customers

	Variable amount												
Jurisdiction Code	DISTRICT OF COLUMBIA												
Fiscal year/period	V9/001/2022	V9/002/2022	V9/003/2022	V9/004/2022	V9/005/2022	V9/006/2022	V9/007/2022	V9/008/2022	V9/009/2022	V9/010/2022	V9/011/2022	V9/012/2022	Result
Rate Category	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
Gas DC Special Contract	160,381.87	-303,290.00	794,607.46	162,315.85	102,983.65	85,497.30	54,304.22	59,307.99	54,128.84	36,340.80	69,564.86	125,607.19	1,401,750.03
Gas DC Special Contract FIRM	376,032.30	-739,895.04	1,495,772.30	390,269.46	355,162.55	365,827.03	353,681.77	366,182.90	315,363.91	304,005.68	319,605.26	329,501.95	4,231,510.07
Gas DC CI-Delivery CHP	88,749.21	110,483.27	107,967.08	89,023.37	52,996.21	59,258.16	64,171.81	52,575.98	40,622.27	40,539.40	46,678.46	78,388.48	831,453.70
Gas DC CI-Delivery Heating	3,480,063.73	3,896,789.31	3,506,950.17	2,375,053.42	1,488,270.62	948,767.55	1,086,173.06	819,845.62	754,537.91	1,077,969.71	1,759,885.11	2,567,474.23	23,761,780.44
Gas DC CI-Delivery Heating and Cooling	15,364.57	3,661.09	21,393.23	19,109.24	9,297.40	-1,165.84	5,839.87	8,655.10	11,559.11	9,403.65	26,038.28	15,630.02	144,785.72
Gas DC CI-Delivery Non-Heating/Cooling	310,767.95	376,334.71	358,402.25	311,673.05	236,632.35	193,414.21	170,549.78	141,144.34	97,580.81	227,266.94	244,355.77	251,839.31	2,919,961.47
Gas DC CI-Sales Heating	6,092,267.53	6,809,035.29	5,447,832.14	4,994,982.65	3,173,847.78	2,120,305.58	1,727,493.82	1,633,765.64	1,820,765.62	2,619,825.75	3,087,093.52	5,442,467.48	44,969,682.80
Gas DC CI-Sales Heating and Cooling	57,133.16	85,412.09	48,877.30	48,347.84	24,616.64	35,503.23	20,088.21	39,337.87	29,700.02	41,233.98	44,047.62	65,314.72	539,612.68
Gas DC CI-Sales Non Heating/Cooling	669,152.68	611,432.08	581,597.56	520,891.81	421,121.54	427,139.77	370,684.71	336,358.24	389,114.30	407,203.17	439,377.95	578,775.62	5,752,849.43
Gas DC GMA-Delivery Heating	1,692,545.67	1,706,690.75	1,592,001.70	1,684,255.95	207,210.62	357,685.43	288,055.76	253,853.18	293,214.64	383,957.48	933,071.17	1,250,975.42	10,643,517.77
Gas DC GMA-Delivery Heating and Cooling	5,594.01	5,620.70	3,241.27	3,086.38	1,383.29	1,234.48	1,028.00	973.31	1,074.85	1,377.96	2,741.86	4,129.46	31,485.57
Gas DC GMA-Delivery Non-Heating/Cooling	196,590.91	178,093.88	173,295.33	137,477.54	114,724.38	89,740.47	65,415.92	72,067.13	68,724.77	86,064.09	125,678.41	146,039.76	1,453,912.59
Gas DC GMA-Sales Heating	2,401,562.37	2,352,764.51	2,213,850.54	1,940,554.71	1,300,547.41	690,347.53	519,757.72	507,107.15	589,130.77	691,439.34	1,302,760.54	2,254,755.06	16,764,577.65
Gas DC GMA-Sales Heating and Cooling	3,151.86	2,989.09	2,766.10	2,811.65	2,344.59	2,313.06	1,986.34	1,983.71	1,924.53	1,944.67	2,124.42	2,772.12	29,112.14
Gas DC GMA-Sales Non Heating/Cooling	219,066.09	268,882.74	246,170.42	254,784.85	197,583.51	158,381.66	213,251.34	121,225.12	140,288.23	202,716.06	181,878.91	259,762.62	2,463,991.55
Gas DC INTR-Delivery	2,103,889.23	2,516,029.77	2,615,934.54	2,239,023.91	1,784,773.13	1,442,130.35	1,524,052.03	746,312.61	1,041,755.24	1,168,368.55	1,726,497.03	1,781,595.22	20,690,361.61
Gas DC INTR-No Supplier (90 Days)	48,711.70	211,644.21	173,333.12	169,728.54	151,585.20	1,087.12	285,036.76	132,442.00	121,176.75	132,035.58	115,667.28	75,197.05	1,617,645.31
Gas DC INTR-Sales	414.90	-550.57											-135.67
Gas DC Res-Delivery Heating	1,480,861.13	1,676,853.56	1,275,578.25	1,021,069.28	687,802.55	439,762.19	380,359.09	376,584.47	348,242.98	454,737.76	641,616.44	1,016,797.62	9,800,265.32
Gas DC Res-Delivery Heating and Cooling	2,320.86	2,380.79	2,014.71	1,645.28	1,068.50	652.24	574.48	550.16	537.65	759.62	899.33	1,483.85	14,887.47
Gas DC Res-Delivery Non Heat/Cool IMA	11,079.79	14,414.68	12,736.78	12,289.71	11,892.36	10,412.33	9,816.86	9,458.47	9,757.97	8,991.39	9,449.61	12,266.10	132,566.05
Gas DC Res-Delivery Non Heat/Cool Other	30,883.98	36,194.90	26,992.45	23,442.87	16,877.03	11,905.24	10,770.11	10,045.02	9,848.08	12,090.76	16,190.91	23,691.19	228,932.54
Gas DC Res-Sales Heating	19,097,715.42	21,696,115.19	15,518,978.48	13,518,303.40	8,342,516.40	5,160,753.95	4,285,769.68	3,848,082.18	4,227,543.99	6,352,153.41	8,400,142.33	16,048,886.16	126,496,960.59
Gas DC Res-Sales Heating and Cooling	79,719.68	89,852.72	71,424.22	56,196.59	44,361.24	25,133.81	67,442.24	-25,667.81	21,863.84	30,911.84	41,228.27	74,103.62	576,570.26
Gas DC Res-Sales Non Heat/Cool IMA	236,045.86	231,753.90	246,705.02	224,243.23	173,602.54	170,714.55	167,588.30	162,509.62	172,805.36	173,299.71	174,566.34	213,380.67	2,347,215.10
Gas DC Res-Sales Non Heat/Cool Other	367,666.63	412,974.01	301,593.26	262,749.55	165,012.27	104,964.26	94,341.06	79,041.62	88,511.74	148,921.79	152,634.24	316,384.47	2,494,794.90
Overall Result	39,227,733.09	42,252,667.63	36,840,015.68	30,463,330.13	19,068,213.76	12,901,765.66	11,768,232.94	9,753,741.62	10,649,774.18	14,613,559.09	19,863,793.92	32,937,219.39	280,340,047.09

Exhibit Sierra Club (A)-9  
Formal Case No. 1180  
Witness Rábago  
Page 7 of 8

Formal Case No. 1180  
OPC DR 7-5  
Attachment 1  
Page 6 of 7

Washington Gas  
Sales to Customers

	Variable amount												
Jurisdiction Code	DISTRICT OF COLUMBIA												
Fiscal year/period	V9/001/2023	V9/002/2023	V9/003/2023	V9/004/2023	V9/005/2023	V9/006/2023	V9/007/2023	V9/008/2023	V9/009/2023	V9/010/2023	V9/011/2023	V9/012/2023	Result
Rate Category	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
Gas DC Special Contract	215,237.99	180,383.94	157,019.82	159,822.83	758,464.10	0.00	150,147.42	102,755.43	104,479.18	79,238.33	92,883.84	-2,195,604.93	-195,172.05
Gas DC Special Contract FIRM	377,046.53	376,707.19	342,299.67	382,980.49	-112,556.11	0.00	555,977.74	271,662.69	281,986.83	272,624.25	299,998.98	-3,697,835.47	-649,107.21
Gas DC CI-Delivery CHP	84,688.42	97,564.70	57,780.02	74,021.68	57,560.40	56,888.50	47,415.54	37,303.00	52,622.99	51,257.64	58,846.81	70,429.31	746,379.01
Gas DC CI-Delivery Heating	3,455,998.03	3,108,583.19	2,843,978.40	2,199,266.82	1,331,224.43	1,056,050.44	934,267.49	841,430.98	779,477.57	1,277,512.43	1,969,188.42	3,161,410.49	22,958,388.69
Gas DC CI-Delivery Heating and Cooling	17,287.47	20,068.80	17,595.85	3,888.28	6,274.22	22,104.02	11,906.84	7,582.17	10,012.31	6,221.84	17,766.51	19,487.47	160,195.78
Gas DC CI-Delivery Non-Heating/Cooling	367,155.24	331,632.14	305,251.44	300,547.05	209,780.92	185,231.87	160,684.04	143,011.65	176,667.84	195,182.42	284,055.19	365,244.78	3,024,444.58
Gas DC CI-Sales Heating	8,089,833.26	6,622,787.19	4,127,752.95	4,021,859.94	2,495,361.45	1,598,969.77	1,157,849.78	1,648,421.67	1,212,112.04	1,661,541.44	2,951,734.69	4,543,034.94	40,131,259.12
Gas DC CI-Sales Heating and Cooling	95,312.15	74,017.44	134,461.71	46,787.24	33,425.93	34,432.47	15,234.61	25,803.50	25,759.44	41,192.98	43,419.67	73,173.21	643,020.35
Gas DC CI-Sales Non Heating/Cooling	744,851.60	676,195.25	410,665.52	517,799.27	298,821.76	286,925.62	261,033.59	232,331.96	238,945.71	276,320.70	316,182.78	413,776.98	4,673,850.74
Gas DC GMA-Delivery Heating	1,610,221.05	1,436,276.07	1,300,154.00	1,115,052.19	614,661.38	379,209.97	370,412.04	238,356.11	304,474.32	266,383.24	984,341.37	1,663,556.62	10,283,098.36
Gas DC GMA-Delivery Heating and Cooling	5,256.56	3,734.53	4,144.22	2,551.08	1,176.30	1,260.83	1,030.01	931.18	1,170.89	1,148.16	2,573.47	4,421.78	29,399.01
Gas DC GMA-Delivery Non-Heating/Cooling	175,931.51	159,945.08	148,329.79	124,875.05	97,649.03	81,520.33	74,797.21	62,295.66	73,633.46	82,069.30	128,910.76	163,022.09	1,372,979.27
Gas DC GMA-Sales Heating	2,951,403.31	2,849,565.24	1,682,981.86	1,845,306.05	765,699.16	888,877.14	434,845.08	517,109.61	349,184.99	437,072.10	888,030.45	1,632,027.73	15,242,102.72
Gas DC GMA-Sales Heating and Cooling	3,445.59	3,531.03	2,363.66	2,426.35	1,687.10	1,742.23	1,359.42	1,336.52	1,342.48	2,810.25	4,185.11	6,279.51	32,509.25
Gas DC GMA-Sales Non Heating/Cooling	353,794.50	325,317.64	211,134.64	241,651.57	160,495.49	133,344.87	114,863.13	94,457.51	113,548.89	110,630.70	173,631.96	184,733.27	2,217,604.17
Gas DC INTR-Delivery	2,537,824.98	2,388,297.34	2,089,159.48	2,249,239.57	1,549,457.56	1,338,084.42	1,063,124.93	1,140,866.93	1,060,910.27	699,216.75	1,465,616.57	8,913,532.90	26,495,331.70
Gas DC INTR-No Supplier (90 Days)	506,121.47	398,251.59	223,258.61	213,171.92	139,110.27	134,823.31	110,720.61	102,702.42	97,803.10	100,235.82			2,026,199.12
Gas DC INTR-Sales	0.00											7.33	7.33
Gas DC Res-Delivery Heating	1,402,738.84	1,200,911.35	1,015,308.05	843,044.82	508,520.72	400,889.17	353,445.11	332,980.59	339,342.36	336,532.74	596,279.66	1,022,845.51	8,352,838.92
Gas DC Res-Delivery Heating and Cooling	2,074.39	1,849.54	1,401.15	1,297.35	776.62	617.98	484.99	643.79	665.95	780.83	1,108.99	614.36	12,315.94
Gas DC Res-Delivery Non Heat/Cool IMA	12,782.72	11,725.60	12,142.45	11,259.33	10,590.48	9,535.74	10,579.30	9,378.66	9,715.75	10,085.98	10,907.22	12,827.07	131,530.30
Gas DC Res-Delivery Non Heat/Cool Other	30,037.51	26,521.51	22,325.94	19,479.09	12,960.74	14,437.77	9,786.29	9,361.09	9,911.36	11,090.89	16,273.62	23,964.59	206,150.40
Gas DC Res-Sales Heating	22,479,187.44	19,555,738.62	11,487,815.45	9,720,983.37	5,383,301.17	4,228,287.28	3,625,735.35	3,204,991.34	3,496,911.49	4,018,454.39	7,343,323.49	12,441,802.21	106,986,531.60
Gas DC Res-Sales Heating and Cooling	107,005.95	88,961.01	52,788.50	49,843.09	27,235.87	23,077.64	18,697.44	18,056.50	31,522.07	-9,902.54	41,244.38	54,286.48	502,816.39
Gas DC Res-Sales Non Heat/Cool IMA	282,110.79	229,437.30	190,335.13	184,180.88	157,885.17	143,446.71	153,104.05	149,687.88	136,418.74	131,863.97	166,554.39	165,539.92	2,090,564.93
Gas DC Res-Sales Non Heat/Cool Other	431,680.89	372,639.30	221,474.67	193,705.52	111,080.91	88,135.28	72,773.70	65,684.43	72,723.75	85,504.76	157,691.62	247,591.29	2,120,686.12
Overall Result	46,339,028.19	40,540,642.59	27,061,922.98	24,525,040.83	14,620,645.07	11,107,893.36	9,710,275.71	9,259,143.27	8,981,343.78	10,145,069.37	18,014,749.95	29,290,169.44	249,595,924.54

Washington Gas  
Sales to Customers

	Variable amount			
<b>Jurisdiction Code</b>	DISTRICT OF COLUMBIA			
<b>Fiscal year/period</b>	V9/001/2024	V9/002/2024	V9/003/2024	<b>Result</b>
<b>Rate Category</b>	\$	\$	\$	\$
Gas DC CI-Delivery CHP	94,876.73	111,953.16	109,184.04	<b>316,013.93</b>
Gas DC CI-Delivery Heating	4,749,302.28	4,020,408.49	4,811,473.32	<b>13,581,184.09</b>
Gas DC CI-Delivery Heating and Cooling	29,073.92	28,014.91	16,753.19	<b>73,842.02</b>
Gas DC CI-Delivery Non-Heating/Cooling	479,477.15	464,583.20	478,142.38	<b>1,422,202.73</b>
Gas DC CI-Sales Heating	5,727,416.57	5,495,413.37	5,144,560.57	<b>16,367,390.51</b>
Gas DC CI-Sales Heating and Cooling	80,676.38	78,808.41	70,414.62	<b>229,899.41</b>
Gas DC CI-Sales Non Heating/Cooling	564,565.56	564,775.63	496,285.60	<b>1,625,626.79</b>
Gas DC GMA-Delivery Heating	2,343,838.33	2,327,654.10	2,129,717.83	<b>6,801,210.26</b>
Gas DC GMA-Delivery Heating and Cooling	7,115.66	5,720.06	4,103.33	<b>16,939.05</b>
Gas DC GMA-Delivery Non-Heating/Cooling	235,174.53	215,895.03	220,808.28	<b>671,877.84</b>
Gas DC GMA-Sales Heating	2,123,661.01	1,955,261.94	1,877,964.17	<b>5,956,887.12</b>
Gas DC GMA-Sales Heating and Cooling	8,920.85	13,661.03	9,274.38	<b>31,856.26</b>
Gas DC GMA-Sales Non Heating/Cooling	255,315.49	292,870.58	236,797.89	<b>784,983.96</b>
Gas DC INTR-Delivery	3,228,218.18	3,892,688.32	3,335,766.58	<b>10,456,673.08</b>
Gas DC Res-Delivery Heating	1,472,074.40	1,667,569.14	1,293,755.75	<b>4,433,399.29</b>
Gas DC Res-Delivery Heating and Cooling	2,246.71	2,224.74	2,652.07	<b>7,123.52</b>
Gas DC Res-Delivery Non Heat/Cool IMA	17,081.50	17,903.89	18,282.69	<b>53,268.08</b>
Gas DC Res-Delivery Non Heat/Cool Other	32,967.02	39,955.22	33,978.32	<b>106,900.56</b>
Gas DC Res-Sales Heating	18,240,211.45	18,909,751.69	14,244,310.56	<b>51,394,273.70</b>
Gas DC Res-Sales Heating and Cooling	106,197.32	101,619.62	81,984.43	<b>289,801.37</b>
Gas DC Res-Sales Non Heat/Cool IMA	216,697.74	236,746.73	216,679.29	<b>670,123.76</b>
Gas DC Res-Sales Non Heat/Cool Other	355,006.47	379,358.23	292,627.41	<b>1,026,992.11</b>
<b>Overall Result</b>	<b>40,370,115.25</b>	<b>40,822,837.49</b>	<b>35,125,516.70</b>	<b>116,318,469.44</b>

Sierra Club Exhibit (A)-10

Formal Case No. 1180

Witness Karl R. Rábago

PUBLIC SERVICE COMMISSION OF THE DISTRICT OF COLUMBIA

WASHINGTON GAS LIGHT COMPANY

FORMAL CASE NO. 1180

WASHINGTON GAS'S RESPONSE  
AND/OR NOTICE OF OBJECTION/UNAVAILABILITY TO  
THE OFFICE OF PEOPLE'S COUNSEL

OPC DATA REQUEST NO. 1

QUESTION NO. 1-3

**Q. Usage History and Forecast.** Please respond to the following:

- a. Provide the actual gas usage data by month for each (a) current and (b) proposed rate class for each of the years 2018 – 2023 and each month of 2024 in both (a) non-weather adjusted and (b) weather-adjusted (normalized) quantities.
- b. Provide the sales forecast for 2024, 2025, 2026, 2027 for each (a) current and (b) proposed rate class on an (a) non-weather adjusted and (b) weather-adjusted (normalized) basis.
- c. Provide the Company's actual load growth by customer class for each of the years 2018 through 2023 and as projected for 2024, 2025, 2026, 2027, and 2028.
- d. Provide the Company's most recent load forecast on a per customer class basis for its operations.

**WASHINGTON GAS'S RESPONSE**

10/04/2024

- A.**
- a. See the attachment entitled OPC Data Request 1-3 Attachment 1. Therms for April 2023 and beyond are provided in the Normal Weather Study, Exhibit WG(N)-4.
  - b. See the attachment entitled OPC Data Request 1-3 Attachment 2. Normal weather therms for April 2023 and beyond are provided in the Normal Weather Study, Exhibit WG(N)-4.
  - c.- d. See the response to subpart (b) above.

SPONSOR: Andrew Lawson  
Manager – Regulatory Affairs

CUBE: tm1serv:Rate Statistics DB  
RS\_ACTUAL\_AREA DC  
RS\_ACTUAL\_LEVEL Total System Level

		<u>Therms Delivered</u>
DC Res Htg / HC	Jan-2018	22,109,166
DC Res Htg / HC	Feb-2018	16,095,609
DC Res Htg / HC	Mar-2018	13,161,351
DC Res Htg / HC	Apr-2018	12,254,971
DC Res Htg / HC	May-2018	4,816,184
DC Res Htg / HC	Jun-2018	2,092,298
DC Res Htg / HC	Jul-2018	1,636,543
DC Res Htg / HC	Aug-2018	1,586,332
DC Res Htg / HC	Sep-2018	1,654,040
DC Res Htg / HC	Oct-2018	2,250,229
DC Res Htg / HC	Nov-2018	7,850,343
DC Res Htg / HC	Dec-2018	14,648,591
DC Res Non Htg - IMA	Jan-2018	123,734
DC Res Non Htg - IMA	Feb-2018	115,448
DC Res Non Htg - IMA	Mar-2018	93,908
DC Res Non Htg - IMA	Apr-2018	82,292
DC Res Non Htg - IMA	May-2018	50,098
DC Res Non Htg - IMA	Jun-2018	41,144
DC Res Non Htg - IMA	Jul-2018	35,813
DC Res Non Htg - IMA	Aug-2018	37,241
DC Res Non Htg - IMA	Sep-2018	37,854
DC Res Non Htg - IMA	Oct-2018	42,026
DC Res Non Htg - IMA	Nov-2018	71,847
DC Res Non Htg - IMA	Dec-2018	108,749
DC Res Non Htg - OTH	Jan-2018	419,465
DC Res Non Htg - OTH	Feb-2018	286,820
DC Res Non Htg - OTH	Mar-2018	236,670
DC Res Non Htg - OTH	Apr-2018	223,122
DC Res Non Htg - OTH	May-2018	93,307
DC Res Non Htg - OTH	Jun-2018	50,566
DC Res Non Htg - OTH	Jul-2018	37,948
DC Res Non Htg - OTH	Aug-2018	36,502
DC Res Non Htg - OTH	Sep-2018	40,266
DC Res Non Htg - OTH	Oct-2018	52,876
DC Res Non Htg - OTH	Nov-2018	156,019
DC Res Non Htg - OTH	Dec-2018	276,947
DC C&I Htg / HC	Jan-2018	13,442,157
DC C&I Htg / HC	Feb-2018	10,677,946
DC C&I Htg / HC	Mar-2018	9,542,154
DC C&I Htg / HC	Apr-2018	8,625,517
DC C&I Htg / HC	May-2018	5,005,174
DC C&I Htg / HC	Jun-2018	3,477,177
DC C&I Htg / HC	Jul-2018	2,968,305
DC C&I Htg / HC	Aug-2018	2,828,275
DC C&I Htg / HC	Sep-2018	2,887,041
DC C&I Htg / HC	Oct-2018	3,400,065
DC C&I Htg / HC	Nov-2018	6,652,386
DC C&I Htg / HC	Dec-2018	10,097,635
DC C&I Non Htg	Jan-2018	1,556,862
DC C&I Non Htg	Feb-2018	1,277,875
DC C&I Non Htg	Mar-2018	1,233,692
DC C&I Non Htg	Apr-2018	1,101,031
DC C&I Non Htg	May-2018	878,039
DC C&I Non Htg	Jun-2018	784,948
DC C&I Non Htg	Jul-2018	585,758
DC C&I Non Htg	Aug-2018	772,421
DC C&I Non Htg	Sep-2018	688,543
DC C&I Non Htg	Oct-2018	754,385
DC C&I Non Htg	Nov-2018	1,013,196

CUBE:  
RS\_ACTUAL\_AREA  
RS\_ACTUAL\_LEVEL

tm1serv:Rate Statistics DB  
DC  
Total System Level

		<u>Therms Delivered</u>
DC C&I Non Htg	Dec-2018	1,247,631
DC GMA Htg / HC	Jan-2018	5,397,271
DC GMA Htg / HC	Feb-2018	4,501,567
DC GMA Htg / HC	Mar-2018	3,874,485
DC GMA Htg / HC	Apr-2018	3,495,479
DC GMA Htg / HC	May-2018	1,832,045
DC GMA Htg / HC	Jun-2018	868,221
DC GMA Htg / HC	Jul-2018	762,413
DC GMA Htg / HC	Aug-2018	661,801
DC GMA Htg / HC	Sep-2018	734,211
DC GMA Htg / HC	Oct-2018	846,505
DC GMA Htg / HC	Nov-2018	2,511,826
DC GMA Htg / HC	Dec-2018	4,093,166
DC GMA Non Htg	Jan-2018	584,456
DC GMA Non Htg	Feb-2018	488,417
DC GMA Non Htg	Mar-2018	450,131
DC GMA Non Htg	Apr-2018	426,058
DC GMA Non Htg	May-2018	292,524
DC GMA Non Htg	Jun-2018	242,398
DC GMA Non Htg	Jul-2018	197,156
DC GMA Non Htg	Aug-2018	202,010
DC GMA Non Htg	Sep-2018	205,363
DC GMA Non Htg	Oct-2018	235,598
DC GMA Non Htg	Nov-2018	361,745
DC GMA Non Htg	Dec-2018	458,166
INTERRUPTIBLE	Jan-2018	9,458,789
INTERRUPTIBLE	Feb-2018	12,031,427
INTERRUPTIBLE	Mar-2018	7,522,027
INTERRUPTIBLE	Apr-2018	10,057,159
INTERRUPTIBLE	May-2018	6,860,596
INTERRUPTIBLE	Jun-2018	4,274,762
INTERRUPTIBLE	Jul-2018	4,441,476
INTERRUPTIBLE	Aug-2018	3,963,532
INTERRUPTIBLE	Sep-2018	3,887,651
INTERRUPTIBLE	Oct-2018	3,987,749
INTERRUPTIBLE	Nov-2018	5,349,404
INTERRUPTIBLE	Dec-2018	8,845,208
TOTAL DC	Jan-2018	53,091,901
TOTAL DC	Feb-2018	45,475,108
TOTAL DC	Mar-2018	36,114,418
TOTAL DC	Apr-2018	36,265,629
TOTAL DC	May-2018	19,827,967
TOTAL DC	Jun-2018	11,831,512
TOTAL DC	Jul-2018	10,665,412
TOTAL DC	Aug-2018	10,088,113
TOTAL DC	Sep-2018	10,134,968
TOTAL DC	Oct-2018	11,569,431
TOTAL DC	Nov-2018	23,966,765
TOTAL DC	Dec-2018	39,776,093
TME		<u>308,807,316</u>



CUBE: tm1serv:Rate Statistics DB  
 RS\_ACTUAL\_AREA DC  
 RS\_ACTUAL\_LEVEL Total System Level

		<u>Therms Delivered</u>
DC Res Htg / HC	Jan-2019	15,003,106
DC Res Htg / HC	Feb-2019	19,690,660
DC Res Htg / HC	Mar-2019	14,373,518
DC Res Htg / HC	Apr-2019	8,907,912
DC Res Htg / HC	May-2019	3,318,383
DC Res Htg / HC	Jun-2019	2,218,914
DC Res Htg / HC	Jul-2019	1,529,645
DC Res Htg / HC	Aug-2019	1,526,495
DC Res Htg / HC	Sep-2019	1,658,998
DC Res Htg / HC	Oct-2019	1,815,269
DC Res Htg / HC	Nov-2019	6,966,130
DC Res Htg / HC	Dec-2019	13,365,718
DC Res Non Htg - IMA	Jan-2019	105,285
DC Res Non Htg - IMA	Feb-2019	126,832
DC Res Non Htg - IMA	Mar-2019	98,616
DC Res Non Htg - IMA	Apr-2019	72,851
DC Res Non Htg - IMA	May-2019	46,943
DC Res Non Htg - IMA	Jun-2019	33,938
DC Res Non Htg - IMA	Jul-2019	33,797
DC Res Non Htg - IMA	Aug-2019	34,249
DC Res Non Htg - IMA	Sep-2019	17,414
DC Res Non Htg - IMA	Oct-2019	(33,415)
DC Res Non Htg - IMA	Nov-2019	67,939
DC Res Non Htg - IMA	Dec-2019	88,870
DC Res Non Htg - OTH	Jan-2019	277,868
DC Res Non Htg - OTH	Feb-2019	367,147
DC Res Non Htg - OTH	Mar-2019	269,715
DC Res Non Htg - OTH	Apr-2019	164,093
DC Res Non Htg - OTH	May-2019	69,077
DC Res Non Htg - OTH	Jun-2019	52,539
DC Res Non Htg - OTH	Jul-2019	35,050
DC Res Non Htg - OTH	Aug-2019	34,631
DC Res Non Htg - OTH	Sep-2019	40,239
DC Res Non Htg - OTH	Oct-2019	43,221
DC Res Non Htg - OTH	Nov-2019	144,755
DC Res Non Htg - OTH	Dec-2019	258,488
DC C&I Htg / HC	Jan-2019	10,669,205
DC C&I Htg / HC	Feb-2019	12,914,720
DC C&I Htg / HC	Mar-2019	10,163,258
DC C&I Htg / HC	Apr-2019	7,338,870
DC C&I Htg / HC	May-2019	4,295,293
DC C&I Htg / HC	Jun-2019	3,332,181
DC C&I Htg / HC	Jul-2019	2,722,736
DC C&I Htg / HC	Aug-2019	2,817,374
DC C&I Htg / HC	Sep-2019	2,948,948
DC C&I Htg / HC	Oct-2019	3,002,462
DC C&I Htg / HC	Nov-2019	6,266,078
DC C&I Htg / HC	Dec-2019	9,652,092
DC C&I Non Htg	Jan-2019	1,211,228
DC C&I Non Htg	Feb-2019	1,460,598
DC C&I Non Htg	Mar-2019	1,187,317
DC C&I Non Htg	Apr-2019	996,371
DC C&I Non Htg	May-2019	757,656
DC C&I Non Htg	Jun-2019	746,296
DC C&I Non Htg	Jul-2019	619,950
DC C&I Non Htg	Aug-2019	582,123
DC C&I Non Htg	Sep-2019	660,271
DC C&I Non Htg	Oct-2019	683,857
DC C&I Non Htg	Nov-2019	1,123,933

CUBE:  
RS\_ACTUAL\_AREA  
RS\_ACTUAL\_LEVEL

tm1serv:Rate Statistics DB  
DC  
Total System Level

		<u>Therms Delivered</u>
DC C&I Non Htg	Dec-2019	1,560,279
DC GMA Htg / HC	Jan-2019	4,312,596
DC GMA Htg / HC	Feb-2019	5,359,318
DC GMA Htg / HC	Mar-2019	3,897,405
DC GMA Htg / HC	Apr-2019	3,013,270
DC GMA Htg / HC	May-2019	1,443,766
DC GMA Htg / HC	Jun-2019	929,340
DC GMA Htg / HC	Jul-2019	670,930
DC GMA Htg / HC	Aug-2019	647,149
DC GMA Htg / HC	Sep-2019	729,434
DC GMA Htg / HC	Oct-2019	708,073
DC GMA Htg / HC	Nov-2019	2,465,888
DC GMA Htg / HC	Dec-2019	3,906,324
DC GMA Non Htg	Jan-2019	464,428
DC GMA Non Htg	Feb-2019	572,573
DC GMA Non Htg	Mar-2019	453,518
DC GMA Non Htg	Apr-2019	367,027
DC GMA Non Htg	May-2019	308,202
DC GMA Non Htg	Jun-2019	268,670
DC GMA Non Htg	Jul-2019	203,953
DC GMA Non Htg	Aug-2019	206,567
DC GMA Non Htg	Sep-2019	204,976
DC GMA Non Htg	Oct-2019	226,980
DC GMA Non Htg	Nov-2019	368,225
DC GMA Non Htg	Dec-2019	449,742
INTERRUPTIBLE	Jan-2019	9,828,640
INTERRUPTIBLE	Feb-2019	11,361,982
INTERRUPTIBLE	Mar-2019	9,374,506
INTERRUPTIBLE	Apr-2019	9,289,599
INTERRUPTIBLE	May-2019	5,358,545
INTERRUPTIBLE	Jun-2019	4,287,176
INTERRUPTIBLE	Jul-2019	3,972,238
INTERRUPTIBLE	Aug-2019	3,781,095
INTERRUPTIBLE	Sep-2019	3,913,790
INTERRUPTIBLE	Oct-2019	3,777,124
INTERRUPTIBLE	Nov-2019	4,801,985
INTERRUPTIBLE	Dec-2019	8,104,318
TOTAL DC	Jan-2019	41,872,354
TOTAL DC	Feb-2019	51,853,830
TOTAL DC	Mar-2019	39,817,853
TOTAL DC	Apr-2019	30,149,993
TOTAL DC	May-2019	15,597,864
TOTAL DC	Jun-2019	11,869,053
TOTAL DC	Jul-2019	9,788,299
TOTAL DC	Aug-2019	9,629,683
TOTAL DC	Sep-2019	10,174,069
TOTAL DC	Oct-2019	10,223,571
TOTAL DC	Nov-2019	22,204,933
TOTAL DC	Dec-2019	37,385,831
TME		<u>290,567,331</u>

CUBE:  
**RS\_ACTUAL\_AREA**  
**RS\_ACTUAL\_LEVEL**

tm1serv:Rate Statistics DB  
DC  
Total System Level

		<u>Therms Delivered</u>
DC Res Htg / HC	Jan-2020	14,386,467
DC Res Htg / HC	Feb-2020	14,959,401
DC Res Htg / HC	Mar-2020	11,259,521
DC Res Htg / HC	Apr-2020	7,379,806
DC Res Htg / HC	May-2020	6,112,665
DC Res Htg / HC	Jun-2020	2,905,113
DC Res Htg / HC	Jul-2020	1,828,643
DC Res Htg / HC	Aug-2020	1,548,354
DC Res Htg / HC	Sep-2020	1,486,035
DC Res Htg / HC	Oct-2020	2,384,489
DC Res Htg / HC	Nov-2020	5,232,058
DC Res Htg / HC	Dec-2020	10,220,027
DC Res Non Htg - IMA	Jan-2020	97,696
DC Res Non Htg - IMA	Feb-2020	129,766
DC Res Non Htg - IMA	Mar-2020	82,463
DC Res Non Htg - IMA	Apr-2020	71,930
DC Res Non Htg - IMA	May-2020	66,789
DC Res Non Htg - IMA	Jun-2020	46,223
DC Res Non Htg - IMA	Jul-2020	42,799
DC Res Non Htg - IMA	Aug-2020	114,548
DC Res Non Htg - IMA	Sep-2020	36,794
DC Res Non Htg - IMA	Oct-2020	45,153
DC Res Non Htg - IMA	Nov-2020	61,921
DC Res Non Htg - IMA	Dec-2020	78,736
DC Res Non Htg - OTH	Jan-2020	276,335
DC Res Non Htg - OTH	Feb-2020	288,439
DC Res Non Htg - OTH	Mar-2020	216,869
DC Res Non Htg - OTH	Apr-2020	147,012
DC Res Non Htg - OTH	May-2020	123,241
DC Res Non Htg - OTH	Jun-2020	66,920
DC Res Non Htg - OTH	Jul-2020	41,701
DC Res Non Htg - OTH	Aug-2020	35,051
DC Res Non Htg - OTH	Sep-2020	38,592
DC Res Non Htg - OTH	Oct-2020	55,150
DC Res Non Htg - OTH	Nov-2020	110,285
DC Res Non Htg - OTH	Dec-2020	202,218
DC C&I Htg / HC	Jan-2020	10,507,749
DC C&I Htg / HC	Feb-2020	9,436,607
DC C&I Htg / HC	Mar-2020	9,937,330
DC C&I Htg / HC	Apr-2020	5,665,733
DC C&I Htg / HC	May-2020	4,960,153
DC C&I Htg / HC	Jun-2020	3,061,907
DC C&I Htg / HC	Jul-2020	2,511,286
DC C&I Htg / HC	Aug-2020	2,339,978
DC C&I Htg / HC	Sep-2020	2,584,230
DC C&I Htg / HC	Oct-2020	3,216,755
DC C&I Htg / HC	Nov-2020	4,675,734
DC C&I Htg / HC	Dec-2020	7,364,633
DC C&I Non Htg	Jan-2020	1,565,119
DC C&I Non Htg	Feb-2020	1,632,897
DC C&I Non Htg	Mar-2020	1,294,471
DC C&I Non Htg	Apr-2020	913,381
DC C&I Non Htg	May-2020	561,908
DC C&I Non Htg	Jun-2020	428,356
DC C&I Non Htg	Jul-2020	449,632
DC C&I Non Htg	Aug-2020	429,103
DC C&I Non Htg	Sep-2020	505,038
DC C&I Non Htg	Oct-2020	562,620
DC C&I Non Htg	Nov-2020	768,341

CUBE:  
RS\_ACTUAL\_AREA  
RS\_ACTUAL\_LEVEL

tm1serv:Rate Statistics DB  
DC  
Total System Level

		<u>Therms Delivered</u>
DC C&I Non Htg	Dec-2020	981,240
DC GMA Htg / HC	Jan-2020	4,174,266
DC GMA Htg / HC	Feb-2020	4,324,856
DC GMA Htg / HC	Mar-2020	3,536,909
DC GMA Htg / HC	Apr-2020	2,740,402
DC GMA Htg / HC	May-2020	2,380,898
DC GMA Htg / HC	Jun-2020	1,000,266
DC GMA Htg / HC	Jul-2020	736,980
DC GMA Htg / HC	Aug-2020	662,243
DC GMA Htg / HC	Sep-2020	669,723
DC GMA Htg / HC	Oct-2020	912,280
DC GMA Htg / HC	Nov-2020	1,879,034
DC GMA Htg / HC	Dec-2020	3,132,906
DC GMA Non Htg	Jan-2020	438,073
DC GMA Non Htg	Feb-2020	500,561
DC GMA Non Htg	Mar-2020	399,122
DC GMA Non Htg	Apr-2020	350,902
DC GMA Non Htg	May-2020	349,230
DC GMA Non Htg	Jun-2020	228,767
DC GMA Non Htg	Jul-2020	207,974
DC GMA Non Htg	Aug-2020	178,057
DC GMA Non Htg	Sep-2020	183,736
DC GMA Non Htg	Oct-2020	215,950
DC GMA Non Htg	Nov-2020	299,777
DC GMA Non Htg	Dec-2020	376,538
INTERRUPTIBLE	Jan-2020	9,429,797
INTERRUPTIBLE	Feb-2020	9,671,063
INTERRUPTIBLE	Mar-2020	8,789,353
INTERRUPTIBLE	Apr-2020	6,637,202
INTERRUPTIBLE	May-2020	5,758,436
INTERRUPTIBLE	Jun-2020	4,432,557
INTERRUPTIBLE	Jul-2020	3,970,067
INTERRUPTIBLE	Aug-2020	4,259,098
INTERRUPTIBLE	Sep-2020	4,269,011
INTERRUPTIBLE	Oct-2020	4,216,687
INTERRUPTIBLE	Nov-2020	4,720,391
INTERRUPTIBLE	Dec-2020	6,108,249
TOTAL DC	Jan-2020	40,875,501
TOTAL DC	Feb-2020	40,943,589
TOTAL DC	Mar-2020	35,516,038
TOTAL DC	Apr-2020	23,906,369
TOTAL DC	May-2020	20,313,320
TOTAL DC	Jun-2020	12,170,109
TOTAL DC	Jul-2020	9,789,082
TOTAL DC	Aug-2020	9,566,430
TOTAL DC	Sep-2020	9,773,159
TOTAL DC	Oct-2020	11,609,083
TOTAL DC	Nov-2020	17,747,540
TOTAL DC	Dec-2020	28,464,547
TME		<u>260,674,768</u>

CUBE: tm1serv:Rate Statistics DB  
RS\_ACTUAL\_AREA DC  
RS\_ACTUAL\_LEVEL Total System Level

		<u>Therms Delivered</u>
DC Res Htg / HC	Jan-2021	17,023,874
DC Res Htg / HC	Feb-2021	17,855,982
DC Res Htg / HC	Mar-2021	13,260,774
DC Res Htg / HC	Apr-2021	7,977,070
DC Res Htg / HC	May-2021	4,390,717
DC Res Htg / HC	Jun-2021	2,244,245
DC Res Htg / HC	Jul-2021	1,701,979
DC Res Htg / HC	Aug-2021	1,484,284
DC Res Htg / HC	Sep-2021	1,619,313
DC Res Htg / HC	Oct-2021	1,701,455
DC Res Htg / HC	Nov-2021	5,083,890
DC Res Htg / HC	Dec-2021	11,253,110
DC Res Non Htg - IMA	Jan-2021	112,566
DC Res Non Htg - IMA	Feb-2021	112,018
DC Res Non Htg - IMA	Mar-2021	95,927
DC Res Non Htg - IMA	Apr-2021	67,932
DC Res Non Htg - IMA	May-2021	50,999
DC Res Non Htg - IMA	Jun-2021	16,536
DC Res Non Htg - IMA	Jul-2021	36,490
DC Res Non Htg - IMA	Aug-2021	32,918
DC Res Non Htg - IMA	Sep-2021	34,888
DC Res Non Htg - IMA	Oct-2021	19,825
DC Res Non Htg - IMA	Nov-2021	52,394
DC Res Non Htg - IMA	Dec-2021	78,403
DC Res Non Htg - OTH	Jan-2021	325,775
DC Res Non Htg - OTH	Feb-2021	337,579
DC Res Non Htg - OTH	Mar-2021	250,165
DC Res Non Htg - OTH	Apr-2021	155,915
DC Res Non Htg - OTH	May-2021	92,342
DC Res Non Htg - OTH	Jun-2021	49,298
DC Res Non Htg - OTH	Jul-2021	38,274
DC Res Non Htg - OTH	Aug-2021	32,024
DC Res Non Htg - OTH	Sep-2021	35,443
DC Res Non Htg - OTH	Oct-2021	41,757
DC Res Non Htg - OTH	Nov-2021	108,305
DC Res Non Htg - OTH	Dec-2021	212,381
DC C&I Htg / HC	Jan-2021	11,279,614
DC C&I Htg / HC	Feb-2021	12,422,671
DC C&I Htg / HC	Mar-2021	9,134,261
DC C&I Htg / HC	Apr-2021	6,698,410
DC C&I Htg / HC	May-2021	4,514,453
DC C&I Htg / HC	Jun-2021	3,149,533
DC C&I Htg / HC	Jul-2021	2,589,577
DC C&I Htg / HC	Aug-2021	3,319,569
DC C&I Htg / HC	Sep-2021	2,408,864
DC C&I Htg / HC	Oct-2021	3,368,578
DC C&I Htg / HC	Nov-2021	5,103,967
DC C&I Htg / HC	Dec-2021	8,513,865
DC C&I Non Htg	Jan-2021	1,432,532
DC C&I Non Htg	Feb-2021	1,396,813
DC C&I Non Htg	Mar-2021	1,111,643
DC C&I Non Htg	Apr-2021	899,673
DC C&I Non Htg	May-2021	652,151
DC C&I Non Htg	Jun-2021	530,058
DC C&I Non Htg	Jul-2021	515,060
DC C&I Non Htg	Aug-2021	507,366
DC C&I Non Htg	Sep-2021	678,548
DC C&I Non Htg	Oct-2021	617,706
DC C&I Non Htg	Nov-2021	846,137

CUBE:  
RS\_ACTUAL\_AREA  
RS\_ACTUAL\_LEVEL

tm1serv:Rate Statistics DB  
DC  
Total System Level

		<u>Therms Delivered</u>
DC C&I Non Htg	Dec-2021	1,199,714
DC GMA Htg / HC	Jan-2021	4,825,372
DC GMA Htg / HC	Feb-2021	5,027,072
DC GMA Htg / HC	Mar-2021	3,924,281
DC GMA Htg / HC	Apr-2021	2,732,357
DC GMA Htg / HC	May-2021	1,831,946
DC GMA Htg / HC	Jun-2021	882,009
DC GMA Htg / HC	Jul-2021	771,701
DC GMA Htg / HC	Aug-2021	607,314
DC GMA Htg / HC	Sep-2021	659,332
DC GMA Htg / HC	Oct-2021	674,561
DC GMA Htg / HC	Nov-2021	1,771,817
DC GMA Htg / HC	Dec-2021	3,417,526
DC GMA Non Htg	Jan-2021	510,273
DC GMA Non Htg	Feb-2021	522,067
DC GMA Non Htg	Mar-2021	465,335
DC GMA Non Htg	Apr-2021	339,225
DC GMA Non Htg	May-2021	291,958
DC GMA Non Htg	Jun-2021	231,146
DC GMA Non Htg	Jul-2021	189,073
DC GMA Non Htg	Aug-2021	169,137
DC GMA Non Htg	Sep-2021	177,444
DC GMA Non Htg	Oct-2021	201,731
DC GMA Non Htg	Nov-2021	293,239
DC GMA Non Htg	Dec-2021	403,175
INTERRUPTIBLE	Jan-2021	9,440,318
INTERRUPTIBLE	Feb-2021	10,006,154
INTERRUPTIBLE	Mar-2021	9,545,754
INTERRUPTIBLE	Apr-2021	7,537,126
INTERRUPTIBLE	May-2021	4,715,721
INTERRUPTIBLE	Jun-2021	3,939,560
INTERRUPTIBLE	Jul-2021	3,244,188
INTERRUPTIBLE	Aug-2021	3,630,709
INTERRUPTIBLE	Sep-2021	3,555,927
INTERRUPTIBLE	Oct-2021	3,618,123
INTERRUPTIBLE	Nov-2021	3,869,146
INTERRUPTIBLE	Dec-2021	6,529,331
TOTAL DC	Jan-2021	44,950,323
TOTAL DC	Feb-2021	47,680,356
TOTAL DC	Mar-2021	37,788,139
TOTAL DC	Apr-2021	26,407,707
TOTAL DC	May-2021	16,540,286
TOTAL DC	Jun-2021	11,042,384
TOTAL DC	Jul-2021	9,086,343
TOTAL DC	Aug-2021	9,783,322
TOTAL DC	Sep-2021	9,169,759
TOTAL DC	Oct-2021	10,243,736
TOTAL DC	Nov-2021	17,128,895
TOTAL DC	Dec-2021	31,607,506
TME		<u>271,428,755</u>

CUBE:  
 RS\_ACTUAL\_AREA  
 RS\_ACTUAL\_LEVEL

tm1serv:Rate Statistics DB  
 DC  
 Total System Level

**Therms Delivered Adjusted**

DC Res Htg / HC	Jan-2022	15,713,847
DC Res Htg / HC	Feb-2022	17,778,523
DC Res Htg / HC	Mar-2022	11,368,012
DC Res Htg / HC	Apr-2022	8,994,105
DC Res Htg / HC	May-2022	4,610,675
DC Res Htg / HC	Jun-2022	2,205,558
DC Res Htg / HC	Jul-2022	1,695,542
DC Res Htg / HC	Aug-2022	1,288,824
DC Res Htg / HC	Sep-2022	1,654,518
DC Res Htg / HC	Oct-2022	3,057,340
DC Res Htg / HC	Nov-2022	5,474,937
DC Res Htg / HC	Dec-2022	10,234,879
DC Res Non Htg - IMA	Jan-2022	102,867
DC Res Non Htg - IMA	Feb-2022	103,871
DC Res Non Htg - IMA	Mar-2022	90,463
DC Res Non Htg - IMA	Apr-2022	83,080
DC Res Non Htg - IMA	May-2022	40,749
DC Res Non Htg - IMA	Jun-2022	34,912
DC Res Non Htg - IMA	Jul-2022	29,786
DC Res Non Htg - IMA	Aug-2022	26,011
DC Res Non Htg - IMA	Sep-2022	36,153
DC Res Non Htg - IMA	Oct-2022	40,937
DC Res Non Htg - IMA	Nov-2022	46,552
DC Res Non Htg - IMA	Dec-2022	72,713
DC Res Non Htg - OTH	Jan-2022	301,303
DC Res Non Htg - OTH	Feb-2022	334,758
DC Res Non Htg - OTH	Mar-2022	213,455
DC Res Non Htg - OTH	Apr-2022	170,305
DC Res Non Htg - OTH	May-2022	91,092
DC Res Non Htg - OTH	Jun-2022	45,763
DC Res Non Htg - OTH	Jul-2022	39,051
DC Res Non Htg - OTH	Aug-2022	28,234
DC Res Non Htg - OTH	Sep-2022	45,697
DC Res Non Htg - OTH	Oct-2022	66,489
DC Res Non Htg - OTH	Nov-2022	100,325
DC Res Non Htg - OTH	Dec-2022	190,831
DC C&I Htg / HC	Jan-2022	11,291,663
DC C&I Htg / HC	Feb-2022	13,312,367
DC C&I Htg / HC	Mar-2022	8,791,373
DC C&I Htg / HC	Apr-2022	7,516,532
DC C&I Htg / HC	May-2022	4,926,902
DC C&I Htg / HC	Jun-2022	3,365,407
DC C&I Htg / HC	Jul-2022	3,081,271
DC C&I Htg / HC	Aug-2022	2,618,245
DC C&I Htg / HC	Sep-2022	3,030,207
DC C&I Htg / HC	Oct-2022	4,194,214
DC C&I Htg / HC	Nov-2022	5,001,094
DC C&I Htg / HC	Dec-2022	8,158,892
DC C&I Non Htg	Jan-2022	1,257,778
DC C&I Non Htg	Feb-2022	1,372,171
DC C&I Non Htg	Mar-2022	1,195,365
DC C&I Non Htg	Apr-2022	1,010,947
DC C&I Non Htg	May-2022	697,652
DC C&I Non Htg	Jun-2022	624,091
DC C&I Non Htg	Jul-2022	600,306
DC C&I Non Htg	Aug-2022	450,603
DC C&I Non Htg	Sep-2022	506,618
DC C&I Non Htg	Oct-2022	676,742
DC C&I Non Htg	Nov-2022	783,388

CUBE:  
 RS\_ACTUAL\_AREA  
 RS\_ACTUAL\_LEVEL

tm1serv:Rate Statistics DB  
 DC  
 Total System Level

		Therms Delivered Adjusted
DC C&I Non Htg	Dec-2022	1,067,429
DC GMA Htg / HC	Jan-2022	4,685,848
DC GMA Htg / HC	Feb-2022	4,689,109
DC GMA Htg / HC	Mar-2022	3,599,620
DC GMA Htg / HC	Apr-2022	3,008,336
DC GMA Htg / HC	May-2022	1,910,950
DC GMA Htg / HC	Jun-2022	879,497
DC GMA Htg / HC	Jul-2022	686,908
DC GMA Htg / HC	Aug-2022	619,201
DC GMA Htg / HC	Sep-2022	737,960
DC GMA Htg / HC	Oct-2022	1,155,513
DC GMA Htg / HC	Nov-2022	2,186,339
DC GMA Htg / HC	Dec-2022	3,354,456
DC GMA Non Htg	Jan-2022	497,934
DC GMA Non Htg	Feb-2022	497,593
DC GMA Non Htg	Mar-2022	390,956
DC GMA Non Htg	Apr-2022	387,401
DC GMA Non Htg	May-2022	280,163
DC GMA Non Htg	Jun-2022	220,620
DC GMA Non Htg	Jul-2022	230,591
DC GMA Non Htg	Aug-2022	164,521
DC GMA Non Htg	Sep-2022	191,187
DC GMA Non Htg	Oct-2022	256,884
DC GMA Non Htg	Nov-2022	316,963
DC GMA Non Htg	Dec-2022	386,949
INTERRUPTIBLE	Jan-2022	7,113,690
INTERRUPTIBLE	Feb-2022	8,557,725
INTERRUPTIBLE	Mar-2022	9,263,904
INTERRUPTIBLE	Apr-2022	7,716,950
INTERRUPTIBLE	May-2022	6,000,941
INTERRUPTIBLE	Jun-2022	3,532,807
INTERRUPTIBLE	Jul-2022	6,049,819
INTERRUPTIBLE	Aug-2022	2,568,288
INTERRUPTIBLE	Sep-2022	3,578,285
INTERRUPTIBLE	Oct-2022	3,549,535
INTERRUPTIBLE	Nov-2022	4,548,322
INTERRUPTIBLE	Dec-2022	5,732,398
TOTAL DC	Jan-2022	40,964,931
TOTAL DC	Feb-2022	46,646,117
TOTAL DC	Mar-2022	34,913,147
TOTAL DC	Apr-2022	28,887,656
TOTAL DC	May-2022	18,559,122
TOTAL DC	Jun-2022	10,908,653
TOTAL DC	Jul-2022	12,413,272
TOTAL DC	Aug-2022	7,763,927
TOTAL DC	Sep-2022	9,780,623
TOTAL DC	Oct-2022	12,997,653
TOTAL DC	Nov-2022	18,457,918
TOTAL DC	Dec-2022	29,198,547



CUBE:  
RS\_ACTUAL\_AREA  
RS\_ACTUAL\_LEVEL

tm1serv:Rate Statistics DB  
DC  
Total System Level

Therms Delivered Adjusted		
DC Res Htg / HC	Jan-2023	14,127,101
DC Res Htg / HC	Feb-2023	14,230,108
DC Res Htg / HC	Mar-2023	11,896,669
DC Res Non Htg - IMA	Jan-2023	93,307
DC Res Non Htg - IMA	Feb-2023	84,345
DC Res Non Htg - IMA	Mar-2023	77,202
DC Res Non Htg - OTH	Jan-2023	261,039
DC Res Non Htg - OTH	Feb-2023	280,440
DC Res Non Htg - OTH	Mar-2023	242,167
DC C&I Htg / HC	Jan-2023	10,359,791
DC C&I Htg / HC	Feb-2023	9,796,807
DC C&I Htg / HC	Mar-2023	7,834,197
DC C&I Non Htg	Jan-2023	1,253,557
DC C&I Non Htg	Feb-2023	1,276,546
DC C&I Non Htg	Mar-2023	982,514
DC GMA Htg / HC	Jan-2023	4,428,381
DC GMA Htg / HC	Feb-2023	4,576,741
DC GMA Htg / HC	Mar-2023	3,677,125
DC GMA Non Htg	Jan-2023	488,114
DC GMA Non Htg	Feb-2023	477,453
DC GMA Non Htg	Mar-2023	440,594
INTERRUPTIBLE	Jan-2023	8,154,546
INTERRUPTIBLE	Feb-2023	7,583,820
INTERRUPTIBLE	Mar-2023	6,745,761
TOTAL DC	Jan-2023	39,165,836
TOTAL DC	Feb-2023	38,306,260
TOTAL DC	Mar-2023	31,896,229

Washington Gas Light Company  
District of Columbia Jurisdiction

**Determination of Billing Period Normal Weather Therms Sales**

Based on 12 Months Ending December 2018

Line No	class	Dec-18	Nov-18	Oct-18	Sep-18	Aug-18	Jul-18	Jun-18	May-18	Apr-18	Mar-18	Feb-18	Jan-18	TME
1	<u>Sales</u>													
2	DC Res Sales Htg / HC	11,517,825	6,832,616	2,245,683	1,351,757	1,315,960	1,332,888	2,091,477	4,669,158	8,959,094	12,727,038	16,462,215	15,164,653	84,670,364
3	DC Res Sales Non Htg - IMA	80,898	59,621	38,784	34,727	34,484	34,504	38,045	49,707	69,132	85,850	102,420	96,614	724,787
4	DC Res Sales Non Htg - OTH	202,601	124,952	48,693	33,819	33,248	33,513	46,480	89,683	162,135	225,838	289,193	267,646	1,557,802
5	DC C&I Sales Htg / HC < 3075	640,992	397,703	151,510	104,227	102,165	103,162	144,402	282,335	513,039	718,302	919,438	850,984	4,928,260
6	DC C&I Sales Htg / HC > 3075	2,993,413	1,946,928	963,749	767,605	749,389	755,299	927,698	1,488,642	2,430,328	3,213,882	4,022,275	3,755,093	24,014,300
7	DC C&I Sales Non Htg	498,430	408,272	320,784	304,504	304,617	307,215	325,268	378,302	466,114	540,155	620,761	594,480	5,068,903
8	DC GMA Sales Htg / HC < 3075	127,591	78,890	35,298	26,691	25,156	25,621	32,754	57,107	95,824	130,357	165,582	153,617	954,487
9	DC GMA Sales Htg / HC > 3075	1,296,909	818,839	338,490	250,497	251,695	252,961	333,657	606,170	1,066,263	1,443,888	1,844,587	1,711,193	10,215,149
10	DC GMA Sales Non Htg	186,196	142,898	100,897	91,829	92,231	92,773	99,736	125,139	166,419	203,399	237,476	224,646	1,763,638
11	Total Sales	17,544,854	10,810,720	4,243,889	2,965,656	2,908,945	2,937,936	4,039,518	7,746,243	13,928,348	19,288,707	24,663,948	22,818,926	133,897,690
12	<u>Deliveries</u>													
13	DC Res Delv Htg / HC	1,546,029	926,290	323,541	205,437	201,508	205,085	308,303	662,733	1,254,728	1,783,040	2,297,537	2,132,803	11,847,034
14	DC Res Delv Non Htg - IMA	6,371	4,556	2,861	2,505	2,483	2,490	2,692	3,602	5,189	6,600	7,966	7,577	54,892
15	DC Res Delv Non Htg - OTH	28,755	17,881	7,292	5,258	5,183	5,225	6,986	13,202	23,463	32,770	42,047	39,270	227,332
16	DC C&I Delv Htg / HC < 3075	213,867	130,425	50,331	34,460	33,698	33,789	46,316	90,719	165,935	235,350	302,191	279,389	1,616,468
17	DC C&I Delv Htg / HC > 3075	4,482,028	3,006,658	1,531,215	1,248,830	1,255,052	1,257,700	1,500,554	2,358,711	3,771,391	5,045,301	6,296,038	5,844,418	37,597,895
18	DC C&I Delv Non Htg	673,445	555,435	439,667	417,600	419,660	417,158	434,904	499,864	608,675	710,199	807,516	780,239	6,764,361
19	DC GMA Delv Htg / HC < 3075	39,637	26,418	15,482	12,664	12,452	12,251	14,122	20,677	30,732	42,367	53,087	47,368	327,255
20	DC GMA Delv Htg / HC > 3075	2,374,095	1,499,946	633,401	461,360	451,676	453,460	598,530	1,083,678	1,892,146	2,611,744	3,318,023	3,098,837	18,476,896
21	DC GMA Delv Non Htg	258,374	195,960	136,084	124,999	123,141	123,017	133,498	165,757	220,707	271,401	321,786	306,757	2,381,482
22	Total Deliveries	9,622,601	6,363,567	3,139,873	2,513,112	2,504,853	2,510,175	3,045,904	4,898,945	7,972,967	10,738,770	13,446,190	12,536,657	79,293,616
23	<u>Throughput</u>													
24	DC Res Delv Htg / HC	13,063,854	7,758,906	2,569,224	1,557,194	1,517,467	1,537,973	2,399,780	5,331,892	10,213,823	14,510,078	18,759,752	17,297,456	96,517,399
25	DC Res Delv Non Htg - IMA	87,270	64,177	41,645	37,232	36,968	36,994	40,737	53,309	74,322	92,449	110,386	104,191	779,679
26	DC Res Delv Non Htg - OTH	231,356	142,833	55,986	39,077	38,431	38,738	53,466	102,885	185,598	258,608	331,240	306,916	1,785,134
27	DC C&I Delv Htg / HC < 3075	854,859	528,128	201,841	138,686	135,862	136,952	190,718	373,054	678,974	953,651	1,221,629	1,130,372	6,544,728
28	DC C&I Delv Htg / HC > 3075	7,475,440	4,953,586	2,494,964	2,016,435	2,004,441	2,012,999	2,428,251	3,847,353	6,201,719	8,259,183	10,318,313	9,599,511	61,612,196
29	DC C&I Delv Non Htg	1,171,875	963,707	760,451	722,104	724,277	724,373	760,172	878,166	1,074,789	1,250,353	1,428,277	1,374,719	11,833,263
30	DC GMA Delv Htg / HC < 3075	167,228	105,307	50,780	39,355	37,608	37,872	46,876	77,783	126,555	172,723	218,669	200,984	1,281,742
31	DC GMA Delv Htg / HC > 3075	3,671,004	2,318,785	971,891	711,856	703,371	706,421	932,187	1,689,848	2,958,408	4,055,632	5,162,610	4,810,031	28,692,045
32	DC GMA Delv Non Htg	444,569	338,858	236,981	216,828	215,373	215,790	233,234	290,896	387,126	474,800	559,262	531,403	4,145,120
33	Total Deliveries	27,167,455	17,174,287	7,383,762	5,478,768	5,413,798	5,448,111	7,085,422	12,645,187	21,901,315	30,027,478	38,110,138	35,355,583	213,191,305

Washington Gas Light Company  
District of Columbia Jurisdiction

**Determination of Billing Period Normal Weather Therms Sales**

Based on 12 Months Ending December 2019

Line No	class	Dec-19	Nov-19	Oct-19	Sep-19	Aug-19	Jul-19	Jun-19	May-19	Apr-19	Mar-19	Feb-19	Jan-19	TME
1	<u>Sales</u>													
2	DC Res Sales Htg / HC	11,132,930	6,515,724	2,119,036	1,395,191	1,378,726	1,384,523	1,944,290	4,421,392	8,779,598	12,533,170	16,268,224	15,047,742	82,920,545
3	DC Res Sales Non Htg - IMA	81,428	58,433	36,540	33,090	33,038	33,150	35,981	48,395	70,192	89,143	107,861	101,828	729,080
4	DC Res Sales Non Htg - OTH	203,028	122,879	45,676	32,972	32,697	32,860	42,724	86,488	163,540	229,784	296,129	274,758	1,563,534
5	DC C&I Sales Htg / HC < 3075	590,868	357,687	137,848	101,010	100,998	101,057	129,066	251,927	466,499	658,687	840,298	770,291	4,506,239
6	DC C&I Sales Htg / HC > 3075	3,009,554	1,973,992	1,002,944	843,591	823,094	835,120	948,250	1,484,725	2,436,484	3,242,450	4,074,377	3,851,585	24,526,167
7	DC C&I Sales Non Htg	483,267	387,777	300,485	288,893	289,517	291,296	302,070	354,702	446,671	525,737	607,741	587,597	4,865,755
8	DC GMA Sales Htg / HC < 3075	74,105	47,703	23,816	19,623	20,074	19,442	21,875	34,977	56,543	77,792	97,094	90,369	583,412
9	DC GMA Sales Htg / HC > 3075	1,375,904	864,112	365,766	281,179	269,739	266,704	333,729	597,172	1,068,922	1,468,671	1,884,040	1,755,352	10,531,291
10	DC GMA Sales Non Htg	183,876	141,162	99,947	93,971	92,647	94,954	98,898	123,530	165,076	202,159	237,753	229,818	1,763,792
11	Total Sales	17,134,959	10,469,469	4,132,059	3,089,519	3,040,530	3,059,107	3,856,885	7,403,310	13,653,526	19,027,593	24,413,518	22,709,340	131,989,815
12	<u>Deliveries</u>													
13	DC Res Delv Htg / HC	1,691,718	988,217	330,267	218,882	213,098	210,255	283,591	608,231	1,172,442	1,669,293	2,177,806	2,035,521	11,599,321
14	DC Res Delv Non Htg - IMA	8,372	5,693	3,347	2,790	2,664	2,545	2,742	3,645	5,212	6,657	8,129	7,509	59,306
15	DC Res Delv Non Htg - OTH	29,145	17,732	6,968	5,159	5,088	5,078	6,457	12,273	22,568	31,569	40,858	38,098	220,993
16	DC C&I Delv Htg / HC < 3075	200,723	116,868	37,740	24,018	23,352	23,258	33,224	76,267	152,835	222,174	288,670	267,864	1,466,993
17	DC C&I Delv Htg / HC > 3075	4,566,559	3,058,375	1,566,109	1,334,443	1,335,643	1,332,103	1,518,920	2,339,687	3,771,124	4,957,017	6,163,755	5,739,952	37,683,688
18	DC C&I Delv Non Htg	643,318	543,080	433,862	412,228	410,623	411,207	427,190	486,138	594,467	683,283	774,611	737,815	6,557,822
19	DC GMA Delv Htg / HC < 3075	17,654	12,164	6,749	5,904	5,556	5,610	6,690	9,511	15,210	18,632	23,469	22,867	150,016
20	DC GMA Delv Htg / HC > 3075	2,345,685	1,459,172	609,298	471,871	476,704	481,903	587,297	1,072,579	1,931,581	2,650,596	3,369,480	3,120,365	18,576,531
21	DC GMA Delv Non Htg	253,699	192,665	135,471	125,805	128,013	128,013	138,114	166,374	220,693	263,211	310,827	289,960	2,352,845
22	Total Deliveries	9,756,874	6,393,965	3,129,810	2,601,101	2,600,741	2,599,972	3,004,225	4,774,704	7,886,133	10,502,433	13,157,606	12,259,950	78,667,516
23	<u>Throughput</u>													
24	DC Res Delv Htg / HC	12,824,647	7,503,941	2,449,303	1,614,073	1,591,824	1,594,778	2,227,881	5,029,622	9,952,040	14,202,463	18,446,030	17,083,262	94,519,866
25	DC Res Delv Non Htg - IMA	89,800	64,126	39,887	35,880	35,702	35,695	38,723	52,040	75,404	95,800	115,991	109,337	788,385
26	DC Res Delv Non Htg - OTH	232,173	140,610	52,643	38,131	37,785	37,939	49,182	98,761	186,108	261,353	336,987	312,855	1,784,527
27	DC C&I Delv Htg / HC < 3075	791,591	474,555	175,589	125,028	124,351	124,315	162,291	328,194	619,335	880,861	1,128,968	1,038,155	5,973,233
28	DC C&I Delv Htg / HC > 3075	7,576,113	5,032,367	2,569,053	2,178,034	2,158,738	2,167,223	2,467,170	3,824,412	6,207,608	8,199,467	10,238,132	9,591,537	62,209,855
29	DC C&I Delv Non Htg	1,126,586	930,857	734,347	701,121	700,141	702,503	729,260	840,840	1,041,138	1,209,020	1,382,353	1,325,412	11,423,576
30	DC GMA Delv Htg / HC < 3075	91,759	59,867	30,565	25,527	25,629	25,052	28,565	44,488	71,753	96,424	120,563	113,236	733,428
31	DC GMA Delv Htg / HC > 3075	3,721,589	2,323,284	975,063	753,050	746,443	748,607	921,026	1,669,752	3,000,503	4,119,267	5,253,521	4,875,717	29,107,822
32	DC GMA Delv Non Htg	437,575	333,827	235,418	219,776	220,660	222,967	237,012	289,904	385,770	465,370	548,580	519,779	4,116,638
33	Total Deliveries	26,891,834	16,863,434	7,261,869	5,690,620	5,641,271	5,659,079	6,861,110	12,178,014	21,539,660	29,530,026	37,571,124	34,969,290	210,657,331

Washington Gas Light Company  
District of Columbia Jurisdiction

**Determination of Billing Period Normal Weather Therms Sales**

Based on 12 Months Ending December 2020

Line No	class	Dec-20	Nov-20	Oct-20	Sep-20	Aug-20	Jul-20	Jun-20	May-20	Apr-20	Mar-20	Feb-20	Jan-20	TME
1	<u>Sales</u>													
2	DC Res Sales Htg / HC	10,256,861	5,257,622	1,918,000	1,322,711	1,321,020	1,318,065	1,647,258	3,946,420	8,456,182	11,975,406	14,461,990	15,756,446	77,637,981
3	DC Res Sales Non Htg - IMA	78,297	53,059	36,084	33,362	33,346	33,457	35,365	47,443	71,395	90,226	103,052	110,228	725,312
4	DC Res Sales Non Htg - OTH	187,825	100,736	42,296	32,009	31,998	32,060	38,098	79,247	160,681	224,275	269,690	292,750	1,491,666
5	DC C&I Sales Htg / HC < 3075	564,135	299,159	124,568	93,578	92,692	92,611	110,025	229,440	458,273	639,694	762,161	830,350	4,296,687
6	DC C&I Sales Htg / HC > 3075	2,842,349	1,656,964	873,893	722,498	730,234	731,007	801,161	1,336,843	2,436,812	3,262,593	3,837,996	4,095,018	23,327,368
7	DC C&I Sales Non Htg	428,133	323,946	253,156	239,885	246,116	246,635	255,371	306,445	408,928	488,147	538,994	571,960	4,307,716
8	DC GMA Sales Htg / HC < 3075	70,717	44,381	25,556	22,466	22,322	22,370	24,409	36,674	61,567	81,496	92,522	100,806	605,286
9	DC GMA Sales Htg / HC > 3075	1,303,481	730,718	356,763	287,710	288,399	288,054	328,704	592,241	1,128,832	1,516,507	1,805,891	1,942,903	10,570,202
10	DC GMA Sales Non Htg	175,805	127,055	94,577	88,721	89,473	89,285	93,829	116,496	159,259	194,809	216,263	228,393	1,673,961
11	Total Sales	15,907,602	8,593,641	3,724,892	2,842,939	2,855,599	2,853,543	3,334,220	6,691,249	13,341,929	18,473,152	22,088,560	23,928,852	124,636,178
12	<u>Deliveries</u>													
13	DC Res Delv Htg / HC	1,629,219	847,364	321,519	226,930	226,977	227,273	280,694	650,201	1,377,688	1,899,258	2,242,585	2,417,884	12,347,593
14	DC Res Delv Non Htg - IMA	9,858	6,309	3,862	3,476	3,434	3,434	3,679	5,338	8,368	10,249	11,221	11,437	80,666
15	DC Res Delv Non Htg - OTH	27,826	15,323	6,983	5,471	5,471	5,471	6,309	12,130	23,595	32,072	37,924	41,167	219,744
16	DC C&I Delv Htg / HC < 3075	136,588	66,391	22,568	15,010	14,631	14,771	19,188	50,698	111,313	161,681	194,992	213,779	1,021,611
17	DC C&I Delv Htg / HC > 3075	4,260,995	2,638,597	1,496,621	1,290,296	1,301,584	1,295,506	1,430,364	2,234,557	3,842,698	5,023,739	5,964,538	6,405,294	37,184,789
18	DC C&I Delv Non Htg	577,325	431,560	333,523	315,758	304,791	304,791	316,993	387,036	524,168	636,221	729,258	772,234	5,633,659
19	DC GMA Delv Htg / HC < 3075	18,788	12,705	8,415	6,922	7,911	7,779	8,146	11,438	15,156	19,040	23,162	23,163	162,627
20	DC GMA Delv Htg / HC > 3075	2,221,133	1,245,633	594,000	481,199	471,575	470,506	529,335	977,431	1,856,388	2,557,991	3,063,884	3,344,365	17,813,438
21	DC GMA Delv Non Htg	246,291	180,887	136,886	128,751	128,064	128,408	130,809	161,802	226,244	268,342	303,149	320,759	2,360,391
22	Total Deliveries	9,128,023	5,444,769	2,924,377	2,473,814	2,464,440	2,457,940	2,725,517	4,490,630	7,985,618	10,608,594	12,570,713	13,550,083	76,824,519
23	<u>Throughput</u>													
24	DC Res Delv Htg / HC	11,886,081	6,104,986	2,239,518	1,549,641	1,547,997	1,545,338	1,927,952	4,596,620	9,833,870	13,874,665	16,704,575	18,174,331	89,985,574
25	DC Res Delv Non Htg - IMA	88,155	59,369	39,946	36,838	36,780	36,891	39,044	52,781	79,763	100,475	114,273	121,665	805,979
26	DC Res Delv Non Htg - OTH	215,651	116,058	49,279	37,480	37,470	37,531	44,408	91,377	184,276	256,347	307,615	333,917	1,711,410
27	DC C&I Delv Htg / HC < 3075	700,724	365,550	147,136	108,588	107,323	107,382	129,213	280,138	569,587	801,375	957,153	1,044,129	5,318,298
28	DC C&I Delv Htg / HC > 3075	7,103,344	4,295,561	2,370,514	2,012,794	2,031,818	2,026,513	2,231,525	3,571,400	6,279,510	8,286,332	9,802,535	10,500,312	60,512,157
29	DC C&I Delv Non Htg	1,005,458	755,506	586,678	555,644	550,908	551,427	572,364	693,481	933,096	1,124,368	1,268,252	1,344,194	9,941,375
30	DC GMA Delv Htg / HC < 3075	89,505	57,086	33,971	29,388	30,233	30,149	32,555	48,112	76,723	100,536	115,684	123,969	767,913
31	DC GMA Delv Htg / HC > 3075	3,524,613	1,976,352	950,763	768,908	759,974	758,560	858,039	1,569,673	2,985,220	4,074,497	4,869,775	5,287,267	28,383,640
32	DC GMA Delv Non Htg	422,096	307,942	231,463	217,472	217,537	217,693	224,637	278,297	385,502	463,151	519,411	549,151	4,034,352
33	Total Deliveries	25,035,625	14,038,410	6,649,269	5,316,753	5,320,039	5,311,483	6,059,737	11,181,879	21,327,547	29,081,746	34,659,273	37,478,935	201,460,697

Washington Gas Light Company  
 District of Columbia Jurisdiction

**Determination of Billing Period Normal Weather Therms Sales**

Based on 12 Months Ending December 2021

Line No	class	Dec-21	Nov-21	Oct-21	Sep-21	Aug-21	Jul-21	Jun-21	May-21	Apr-21	Mar-21	Feb-21	Jan-21	TME
1	<u>Sales</u>													
2	DC Res Sales Htg / HC	12,972,483	8,460,684	3,519,972	1,104,728	979,925	993,246	1,060,175	1,970,406	4,771,884	10,097,667	12,935,883	15,582,862	74,449,915
3	DC Res Sales Non Htg - IMA	87,323	63,193	41,306	30,408	29,851	29,692	30,201	34,699	48,128	73,920	88,633	102,289	659,643
4	DC Res Sales Non Htg - OTH	236,354	159,747	74,964	33,113	30,975	31,135	32,291	48,258	94,662	185,718	234,907	282,252	1,444,374
5	DC C&I Sales Htg / HC < 3075	686,664	445,896	180,764	52,173	46,076	48,156	52,784	101,457	246,583	522,275	671,879	812,285	3,866,991
6	DC C&I Sales Htg / HC > 3075	3,679,727	2,583,556	1,427,683	864,479	826,067	621,518	631,159	836,399	1,492,793	2,722,970	3,377,627	3,995,575	23,059,552
7	DC C&I Sales Non Htg	464,274	381,339	288,756	244,304	242,535	164,696	167,447	185,825	240,217	345,238	400,108	452,064	3,576,802
8	DC GMA Sales Htg / HC < 3075	93,384	65,702	33,595	18,517	18,094	36,430	36,694	42,459	59,442	93,277	108,335	127,343	733,273
9	DC GMA Sales Htg / HC > 3075	1,679,820	1,166,959	605,591	313,059	294,815	290,633	291,097	389,734	691,751	1,271,197	1,588,756	1,866,526	10,449,936
10	DC GMA Sales Non Htg	206,045	161,675	112,733	85,701	83,783	83,089	82,724	90,876	117,353	167,343	194,232	219,917	1,605,470
11	Total Sales	20,106,074	13,488,750	6,285,362	2,746,483	2,552,120	2,298,595	2,384,570	3,700,112	7,762,812	15,479,605	19,600,359	23,441,113	119,845,957
12	<u>Deliveries</u>													
13	DC Res Delv Htg / HC	2,117,320	1,369,969	552,594	157,986	137,141	138,220	147,894	284,380	700,760	1,503,600	1,932,728	2,340,757	11,383,350
14	DC Res Delv Non Htg - IMA	11,321	7,552	3,177	1,290	1,235	(162)	23	796	2,895	6,760	8,827	10,831	54,545
15	DC Res Delv Non Htg - OTH	36,569	24,985	12,146	5,873	5,459	5,382	5,483	7,652	14,518	27,835	34,758	41,370	222,029
16	DC C&I Delv Htg / HC < 3075	205,585	139,162	62,896	25,596	23,510	23,031	24,074	37,154	79,267	160,614	203,801	242,898	1,227,588
17	DC C&I Delv Htg / HC > 3075	5,229,790	3,767,463	2,217,530	1,461,975	1,470,998	1,240,804	1,260,061	1,564,112	2,470,907	4,258,084	5,201,573	6,005,659	36,148,957
18	DC C&I Delv Non Htg	564,886	456,605	336,044	279,380	280,673	187,492	191,527	217,025	289,661	425,911	505,673	575,152	4,310,028
19	DC GMA Delv Htg / HC < 3075	26,644	19,389	11,216	6,352	6,005	5,800	5,887	7,885	12,682	21,058	25,776	29,674	178,367
20	DC GMA Delv Htg / HC > 3075	2,692,019	1,846,931	925,978	495,469	468,734	475,163	494,080	662,550	1,202,772	2,231,433	2,774,021	3,285,040	17,554,190
21	DC GMA Delv Non Htg	274,513	215,087	150,319	125,342	123,476	124,848	127,280	139,476	176,776	250,147	288,510	323,599	2,319,376
22	Total Deliveries	11,158,647	7,847,145	4,271,902	2,559,263	2,517,231	2,200,576	2,256,309	2,921,030	4,950,238	8,885,442	10,975,668	12,854,979	73,398,430
23	<u>Throughput</u>													
24	DC Res Delv Htg / HC	15,089,803	9,830,653	4,072,566	1,262,714	1,117,066	1,131,466	1,208,069	2,254,786	5,472,643	11,601,268	14,868,612	17,923,620	85,833,265
25	DC Res Delv Non Htg - IMA	98,644	70,745	44,484	31,698	31,086	29,530	30,224	35,495	51,022	80,680	97,460	113,120	714,188
26	DC Res Delv Non Htg - OTH	272,923	184,732	87,110	38,987	36,434	36,516	37,774	55,910	109,179	213,552	269,665	323,621	1,666,404
27	DC C&I Delv Htg / HC < 3075	892,248	585,058	243,661	77,769	69,586	71,187	76,858	138,611	325,850	682,889	875,680	1,055,182	5,094,579
28	DC C&I Delv Htg / HC > 3075	8,909,517	6,351,019	3,645,213	2,326,454	2,297,065	1,862,322	1,891,221	2,400,511	3,963,700	6,981,054	8,579,199	10,001,234	59,208,509
29	DC C&I Delv Non Htg	1,029,160	837,943	624,799	523,684	523,208	352,187	358,974	402,850	529,879	771,149	905,781	1,027,216	7,886,830
30	DC GMA Delv Htg / HC < 3075	120,028	85,091	44,811	24,868	24,099	42,230	42,580	50,344	72,124	114,336	134,111	157,017	911,640
31	DC GMA Delv Htg / HC > 3075	4,371,838	3,013,891	1,531,568	808,528	763,549	765,796	785,176	1,052,283	1,894,524	3,502,630	4,362,777	5,151,566	28,004,126
32	DC GMA Delv Non Htg	480,558	376,762	263,052	211,044	207,260	207,937	210,004	230,352	294,129	417,490	482,742	543,517	3,924,846
33	Total Deliveries	31,264,720	21,335,895	10,557,264	5,305,746	5,069,352	4,499,171	4,640,880	6,621,142	12,713,050	24,365,047	30,576,028	36,296,092	193,244,387

Washington Gas Light Company  
District of Columbia Jurisdiction

**Determination of Billing Period Normal Weather Therms Sales**

Based on 12 Months Ending December 2022

Line No	class	Dec-22	Nov-22	Oct-22	Sep-22	Aug-22	Jul-22	Jun-22	May-22	Apr-22	Mar-22	Feb-22	Jan-22	TME
1	<u>Sales</u>													
2	DC Res Sales Htg / HC	9,912,078	4,905,057	1,562,631	974,276	988,125	1,002,714	1,343,665	3,674,249	8,245,075	11,788,908	14,285,483	15,591,558	74,273,820
3	DC Res Sales Non Htg - IMA	68,378	46,391	31,643	29,082	29,246	29,517	30,976	41,728	62,888	79,575	91,685	98,318	639,425
4	DC Res Sales Non Htg - OTH	178,277	95,117	39,708	29,797	29,827	29,967	35,646	74,929	152,429	213,093	255,728	278,447	1,412,965
5	DC C&I Sales Htg / HC < 3075	545,074	263,210	79,004	47,395	50,803	53,576	73,944	207,056	454,551	638,013	774,149	844,103	4,030,879
6	DC C&I Sales Htg / HC > 3075	3,133,994	1,855,994	1,016,921	876,131	834,699	631,648	703,877	1,256,638	2,338,620	3,149,458	3,739,881	4,090,128	23,627,989
7	DC C&I Sales Non Htg	393,828	302,189	242,060	233,146	234,768	162,049	166,735	211,869	297,096	364,169	414,395	440,632	3,462,937
8	DC GMA Sales Htg / HC < 3075	77,196	43,437	22,050	17,565	17,905	35,902	38,023	51,649	80,639	102,574	120,459	130,214	737,614
9	DC GMA Sales Htg / HC > 3075	1,351,223	802,250	369,554	303,875	300,390	298,299	334,792	601,166	1,117,664	1,516,735	1,797,490	1,946,708	10,740,146
10	DC GMA Sales Non Htg	179,335	125,993	92,785	86,649	86,812	87,142	90,528	115,107	161,665	198,044	222,539	238,544	1,685,142
11	Total Sales	15,839,383	8,439,637	3,456,356	2,597,917	2,572,576	2,330,816	2,818,185	6,234,392	12,910,626	18,050,570	21,701,809	23,658,652	120,610,917
12	<u>Deliveries</u>													
13	DC Res Delv Htg / HC	1,517,637	740,591	223,965	135,502	141,720	147,896	207,038	590,485	1,334,076	1,910,590	2,329,616	2,559,158	11,838,274
14	DC Res Delv Non Htg - IMA	9,195	4,640	1,715	1,357	1,579	(213)	296	2,650	6,999	10,289	12,325	13,662	64,493
15	DC Res Delv Non Htg - OTH	27,032	14,929	6,753	5,344	5,392	5,411	6,277	12,134	23,833	32,756	39,429	42,951	222,240
16	DC C&I Delv Htg / HC < 3075	149,130	78,940	32,124	22,520	23,063	23,669	28,778	61,633	130,923	184,196	222,487	243,302	1,200,765
17	DC C&I Delv Htg / HC > 3075	4,082,768	2,641,555	1,579,039	1,404,398	1,396,934	1,150,891	1,247,226	1,996,524	3,392,786	4,484,046	5,278,021	5,633,983	34,288,169
18	DC C&I Delv Non Htg	449,706	348,872	273,442	262,971	264,522	173,997	183,993	240,808	350,293	437,628	500,728	536,473	4,023,432
19	DC GMA Delv Htg / HC < 3075	19,974	12,833	6,965	6,056	5,902	6,056	6,575	11,345	18,461	24,958	31,038	32,163	182,326
20	DC GMA Delv Htg / HC > 3075	2,032,705	1,086,539	560,394	452,128	449,985	448,913	512,157	927,748	1,765,344	2,421,668	2,875,989	3,124,858	16,658,428
21	DC GMA Delv Non Htg	224,511	166,946	124,107	117,302	117,302	117,988	121,868	151,208	209,385	254,192	288,340	300,807	2,193,960
22	Total Deliveries	8,512,656	5,095,846	2,808,505	2,407,577	2,406,400	2,074,608	2,314,209	3,994,534	7,232,100	9,760,323	11,577,973	12,487,358	70,672,088
23	<u>Throughput</u>													
24	DC Res Delv Htg / HC	11,429,715	5,645,648	1,786,596	1,109,778	1,129,846	1,150,610	1,550,703	4,264,735	9,579,151	13,699,497	16,615,099	18,150,716	86,112,094
25	DC Res Delv Non Htg - IMA	77,572	51,031	33,358	30,439	30,825	29,304	31,271	44,377	69,887	89,864	104,010	111,980	703,918
26	DC Res Delv Non Htg - OTH	205,308	110,046	46,462	35,141	35,219	35,378	41,922	87,062	176,263	245,849	295,157	321,398	1,635,206
27	DC C&I Delv Htg / HC < 3075	694,204	342,150	111,128	69,914	73,866	77,245	102,723	268,690	585,474	822,209	996,636	1,087,405	5,231,644
28	DC C&I Delv Htg / HC > 3075	7,216,762	4,497,549	2,595,960	2,280,529	2,231,632	1,782,539	1,951,103	3,253,162	5,731,406	7,633,504	9,017,902	9,724,110	57,916,158
29	DC C&I Delv Non Htg	843,534	651,061	515,502	496,117	499,291	336,046	350,727	452,677	647,388	801,797	915,123	977,106	7,486,369
30	DC GMA Delv Htg / HC < 3075	97,170	56,270	29,015	23,622	23,808	41,959	44,598	62,994	99,100	127,532	151,497	162,377	919,941
31	DC GMA Delv Htg / HC > 3075	3,383,928	1,888,788	929,948	756,003	750,375	747,213	846,949	1,528,914	2,883,008	3,938,403	4,673,479	5,071,566	27,398,574
32	DC GMA Delv Non Htg	403,846	292,940	216,892	203,951	204,114	205,131	212,396	266,316	371,050	452,237	510,880	539,351	3,879,102
33	Total Deliveries	24,352,039	13,535,482	6,264,861	5,005,494	4,978,976	4,405,424	5,132,394	10,228,926	20,142,726	27,810,893	33,279,782	36,146,009	191,283,005

Washington Gas Light Company  
District of Columbia Jurisdiction

**Determination of Billing Period Normal Weather Therms Sales**

Based on 12 Months Ending December 2023

Line No	class	Mar-23	Feb-23	Jan-23
1	<u>Sales</u>			
2	DC Res Sales Htg / HC	10,741,469	14,260,502	13,109,632
3	DC Res Sales Non Htg - IMA	70,729	86,855	81,993
4	DC Res Sales Non Htg - OTH	201,572	263,575	242,591
5	DC C&I Sales Htg / HC < 3075	607,410	798,257	734,478
6	DC C&I Sales Htg / HC > 3075	3,386,896	4,365,932	4,121,159
7	DC C&I Sales Non Htg	377,220	445,508	428,101
8	DC GMA Sales Htg / HC < 3075	94,784	121,781	109,735
9	DC GMA Sales Htg / HC > 3075	1,464,576	1,905,417	1,806,863
10	DC GMA Sales Non Htg	178,709	216,498	203,366
11	Total Sales	17,123,365	22,464,325	20,837,918
12	<u>Deliveries</u>			
13	DC Res Delv Htg / HC	1,551,667	2,105,492	1,946,722
14	DC Res Delv Non Htg - IMA	10,118	13,036	11,797
15	DC Res Delv Non Htg - OTH	30,167	39,324	36,582
16	DC C&I Delv Htg / HC < 3075	151,191	193,088	181,382
17	DC C&I Delv Htg / HC > 3075	4,821,326	6,035,704	5,463,560
18	DC C&I Delv Non Htg	505,049	590,278	557,167
19	DC GMA Delv Htg / HC < 3075	34,615	44,041	42,073
20	DC GMA Delv Htg / HC > 3075	2,446,393	3,096,262	2,844,778
21	DC GMA Delv Non Htg	260,481	307,797	290,137
22	Total Deliveries	9,811,007	12,425,020	11,374,197
23	<u>Throughput</u>			
24	DC Res Delv Htg / HC	12,293,136	16,365,994	15,056,354
25	DC Res Delv Non Htg - IMA	80,847	99,891	93,790
26	DC Res Delv Non Htg - OTH	231,738	302,899	279,172
27	DC C&I Delv Htg / HC < 3075	758,601	991,345	915,860
28	DC C&I Delv Htg / HC > 3075	8,208,223	10,401,636	9,584,718
29	DC C&I Delv Non Htg	882,269	1,035,786	985,267
30	DC GMA Delv Htg / HC < 3075	129,399	165,822	151,808
31	DC GMA Delv Htg / HC > 3075	3,910,969	5,001,678	4,651,641
32	DC GMA Delv Non Htg	439,190	524,295	493,503
33	Total Deliveries	26,934,371	34,889,346	32,212,114

Sierra Club Exhibit (A)-11

Formal Case No. 1180

Witness Karl R. Rábago



PUBLIC SERVICE COMMISSION OF THE DISTRICT OF COLUMBIA

WASHINGTON GAS LIGHT COMPANY

FORMAL CASE NO. 1180

WASHINGTON GAS'S RESPONSE  
AND/OR NOTICE OF OBJECTION/UNAVAILABILITY TO  
THE OFFICE OF PEOPLE'S COUNSEL

OPC DATA REQUEST NO. 1

QUESTION NO. 1-4A

- Q. Rate Base.** Please provide the year end rate base, separately for gas distribution and energy efficiency programs for each year 2014-2023 and as projected for each year 2025-2029.

**WASHINGTON GAS'S RESPONSE**

10/04/2024

- A.** Washington Gas has no energy efficiency rate base. District of Columbia rate base December 31 is shown in the table below.

<u>Period</u>	<u>Rate Base</u>
Dec-14	\$308,566,258
Dec-15	\$339,591,537
Dec-16	\$410,964,348
Dec-17	\$454,534,330
Dec-18	\$491,345,383
Dec-19	\$589,732,751
Dec-20	\$603,347,157
Dec-21	\$672,358,308
Dec-22	\$752,902,609
Dec-23	\$818,332,883

(Source: End of Period Per Book Cost of Service Analysis)

Washington Gas does not project rate base, so information for 2025 through 2029 is not available.

SPONSOR: Robert E. Tuoriniemi  
Chief Regulatory Accountant

## **CERTIFICATE OF SERVICE**

I hereby certify on this 24<sup>th</sup> day of January, 2025 that I caused the foregoing document to be electronically delivered to the following:

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