



August 8, 2025

Mike Bull, Acting Executive Secretary  
Minnesota Public Utilities Commission  
121 7<sup>th</sup> Place East, Suite 350  
St. Paul, MN 55101

**RE: Center for Energy and Environment’s Reply Comments in the Matter of a Commission Evaluation of Changes to Natural Gas Utility Regulatory and Policy Structures to Meet State Greenhouse Gas Reduction Goals**

Docket Number: G999/CI-21-565

Mr. Bull,

Center for Energy and Environment (CEE) submits the following Reply Comments in response to the Minnesota Public Utilities Commission (Commission) Notice of Comment Period issued on May 5, 2025, in the above-referenced docket.

In the reply comments below, CEE provides information and context related to issues raised in initial comments in this proceeding. These comments are not specific to line extension tariffs but are intended to inform the Commission’s broader evaluation of changes to natural gas regulatory and policy structures to meet or exceed the state’s greenhouse gas emission reduction goals under the Future of Gas directive from the Legislature.

CEE intends to provide final recommendations regarding line extension tariffs and other issues in supplemental comments.

Sincerely,

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## **I. SUMMARY**

CEE appreciates the engagement from all parties who participated in initial comments and finds value in many of the perspectives and arguments. Positions ranged from recommending elimination of free footage allowances to recommending no changes to existing line extension tariffs, with some parties providing concrete changes to how specific aspects of line extension tariffs are determined.

In these reply comments, CEE provides context on two key issues raised in initial comments that are applicable to the broader Future of Gas discussion in this proceeding: 1) the balance of electrification and dual fuel approaches as the Commission evaluates changes to natural gas utility regulatory and policy structures to further the state's emission reduction goals, and 2) concerns about recovering the cost for gas distribution infrastructure through volumetric rates when other policies around greenhouse gas (GHG) emissions, efficiency, and electrification support declining throughput or sales of natural gas.

Regarding the first issue, CEE provides information from two studies providing context on electrification and dual fuel pathways that may be helpful as the Commission evaluates regulatory changes to natural gas regulation in this proceeding.

Regarding the second issue, CEE describes an innovative model implemented in Quebec that directly addresses the challenge of paying for gas infrastructure in the face of declining sales due to electrification and dual fuel implementation in a cold climate region. While a Minnesota approach might look different than the Quebec model, the concept is worth exploring and CEE hopes its inclusion in the record supports further discussion.

CEE continues to support our recommendations made in initial comments and will provide final recommendations in supplemental comments after reviewing reply comments from other parties.

## **II. ELECTRIFICATION AND DUAL FUEL PATHWAYS**

In this section, CEE provides context on the value of pursuing both electrification and dual fuel pathways in Minnesota as policies encourage decarbonization of natural gas end uses.

### **G21 Report**

Several parties referenced the July 2021 *Decarbonizing Minnesota's Natural Gas End Uses* report (G21 Report), and the modeling done for the report, when making the case for different perspectives on line extension tariffs. Parties are free to interpret the report in different ways,

but as an author and convener of that report, CEE clarifies that the report generally provided three things:

- A consensus set of recommendations that stakeholders, utilities, regulators, policymakers, and the public could consider to drastically reduce or eliminate greenhouse gas emissions from Minnesota’s natural gas end uses, developed through extensive stakeholder engagement and scenario modeling.<sup>1</sup>
- Scenario modeling examining three pathways to decarbonize natural gas end uses from a business-as-usual reference case:
  - High electrification
  - Electrification with gas backup
  - High decarbonized gas<sup>2</sup>
- A set of guiding principles intended to “declare what the stakeholders in this process collectively aspired to achieve or maintain through decarbonizing Minnesota’s natural gas end uses.”<sup>3</sup> These principles included affordability, equity, environment, economy, and system characteristics.

CEE notes the report did not discuss or recommend anything specific to gas utility line extension policies, and while the Advisory Committee “agreed to the modeling assumptions and found the results valid based on those assumptions, it did not agree that the modeling by itself should determine any particular course of action.”<sup>4</sup> That said, the G21 Report did identify an electrification with gas backup pathway to be the least-cost option to gain significant emission reductions.<sup>5</sup> CEE supports that finding and asserts that both electrification and dual fuel pathways must be pursued simultaneously to achieve state policy goals regarding emission reductions, affordability, and reliability.

### **Progress on Electrification Pathways**

As described by CEE and other parties in initial comments, Minnesota policies create pathways for utilities to electrify end uses served by natural gas and other fuels, namely through Energy Conservation and Optimization (ECO) programs and Natural Gas Innovation Act (NGIA) plans. In addition, CEE affirms that electrifying significant portions of the economy is critical to meeting

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<sup>1</sup> *Decarbonizing Minnesota’s Natural Gas End Uses*. Stakeholder Process Summary and Consensus Recommendations. Co-convened by the Great Plains Institute and Center for Energy and Environment. July 2021. Page 1.

<sup>2</sup> *Id.* Page 26.

<sup>3</sup> *Id.* Page 18.

<sup>4</sup> *Id.* Page 29.

<sup>5</sup> *Id.* Page 58 and Slide 8.

the state's greenhouse gas emission reduction goals under Minn. Stat. § 216H.02, particularly as electric utilities decarbonize under the Carbon Free Standard provisions in Minn. Stat. § 216B.1691.

However, as indicated in the case studies analyzed in CEE's initial comments, Minnesota is not yet at a point of cost-parity for all-electric homes in the new construction built-to-code market from a first-year operational cost perspective, compared to homes with standard gas appliances and central air conditioning units. In addition, a recent report illustrates how overall trends in heat pump adoption are moving in the right direction but also highlights areas in need of further work.

On August 1, 2025, the Minnesota Efficient Technology Accelerator (ETA) published the *ASHP State of the Market Report* highlighting the results of primary data collection efforts in 2024 and early 2025 in Minnesota and across the Midwest focused on capturing current heat pump market characteristics and tracking market trends over time.<sup>6</sup> The report draws from surveys with 91 residential mechanical contractors, 130 contractor training attendees, and 721 residents who had an ASHP installed in the past three years; a study of homeowners who do not currently have ASHPs that included focus groups with 30 participants, surveys of 4,007 participants across the Midwest, and surveys of 1,751 participants from Minnesota; and conversations and surveys with four heat pump distributors. The report provides a wealth of information, but there are a few points worth highlighting that are relevant to the electrification discussion.

Overall, the report found that most contractors have at least some experience with heat pumps, many hold a favorable opinion of heat pump technology, contractors have a big impact on customer decisions regarding heat pumps, and contractors are talking to customers about heat pumps and including them in customer bids.<sup>7</sup> This highlights positive movement in the heat pump market to further customer adoption of high-efficient electric heating technologies.

In addition, the majority of contractors surveyed anticipated heat pump sales will increase in the next five years, as shown in Figure 1 below.<sup>8</sup>

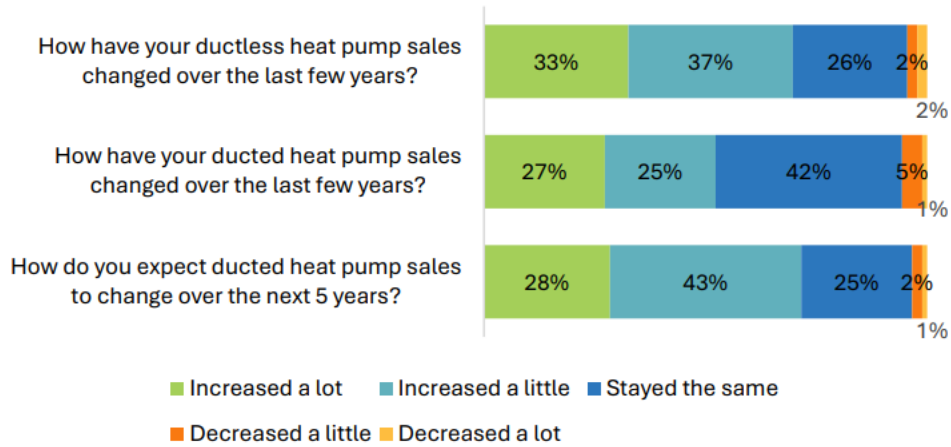
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<sup>6</sup> *ASHP State of the Market Report*. Efficient Technology Accelerator. Primary author: Maddie Hansen-Connell. August 1, 2025. <https://www.etamn.org/ashp-state-market-report>.

<sup>7</sup> *Id.* Pages 5-7.

<sup>8</sup> *Id.* Page 25.

**Figure 1. Contractor Heat Pump Sale Changes Over Time (N=88-89)**



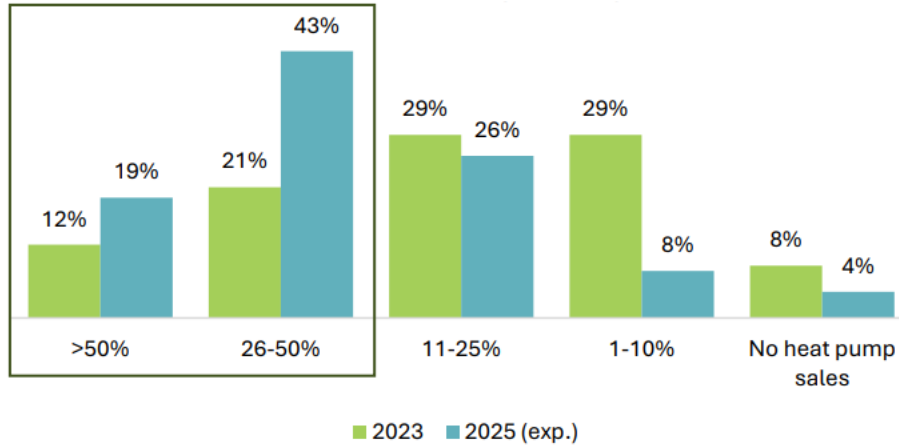
**Note: Due to rounding, percentages may not sum to 100 percent.**

Similarly, surveys of contractors attending heat pump training sessions reported strong trends in expected heat pump sales in 2025 compared to actual sales in 2023. Figure 2 shows the breakdown of contractor trainees reporting different levels of heat pumps sales as a percentage of total sales.<sup>9</sup> For example, the far left column shows that 12 percent of contractor trainees reported that more than 50 percent of their total sales were for heat pumps in 2023, and 19 percent of contractor trainees expected more than 50 percent of their total sales in 2025 to be for heat pumps. In general, respondents expected to sell more heat pumps in 2025 than they were selling in 2023, with 62 percent saying they expected heat pump sales would comprise more than 25 percent of their business, up from 33 percent in 2023.<sup>10</sup>

<sup>9</sup> *Id.* Page 42.

<sup>10</sup> *Id.* Page 41.

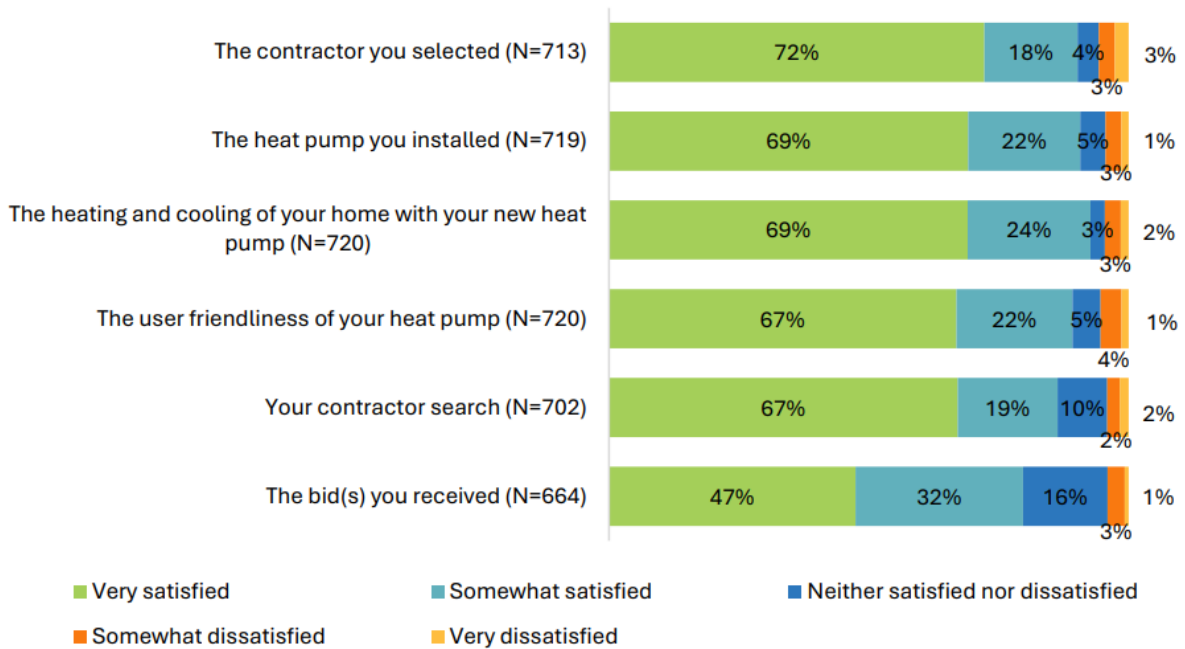
**Figure 2. Contractor Trainees - Percentage of Sales from Heat Pumps in 2023 Versus Expected Sales in 2025 (N=119)**



**Note:** Due to rounding, percentages may not sum to 100 percent.

Importantly, for customers who have installed a heat pump in Minnesota, overall satisfaction with purchasing, installing, and operating the heat pump is high, as shown in Figure 3.<sup>11</sup>

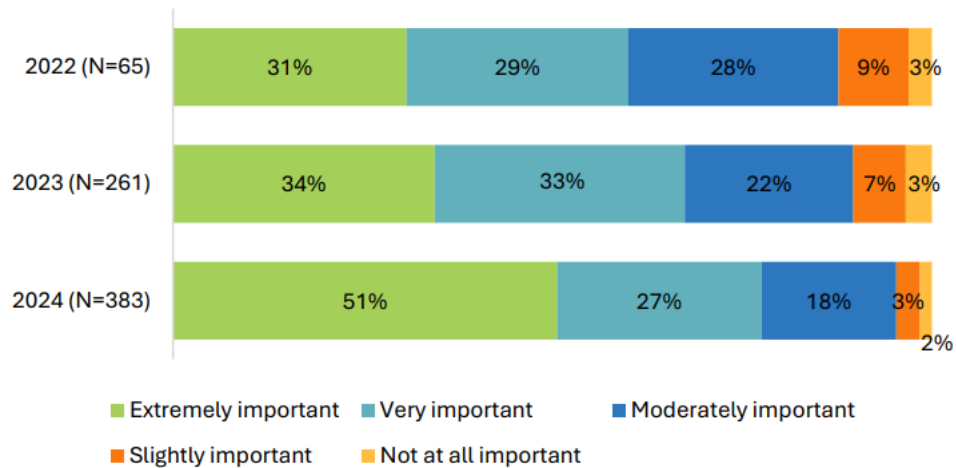
**Figure 3. Customer Satisfaction with Installation Process and Equipment**



<sup>11</sup> *Id.* Page 56.

And, while customer costs were cited as a concern by 85 percent of contractors,<sup>12</sup> a growing number of customers reported that utility rebates are extremely or very important for heat pump decisions as shown in Figure 4.<sup>13</sup> This emphasizes the impact of utility rebates through ECO and NGIA programs and supports the continued expansion of those rebates.

**Figure 4. Importance of Rebates to Heat Pump Decision, by Year**



**Note: Due to rounding, percentages may not sum to 100 percent.**

However, there is still work to do. The customer research in the report indicated that 75 percent of Minnesota-specific homeowners without heat pumps knew little or nothing about them.<sup>14</sup> In addition, while the contractors surveyed broadly agreed that heat pumps are a good choice for cooling homes in Minnesota and are beneficial for customers with electric heat and propane heat, there was less agreement on whether heat pumps are a good choice for primary heat generally and whether heat pumps are beneficial for customers who have natural gas heat, as shown in Figure 5.<sup>15</sup>

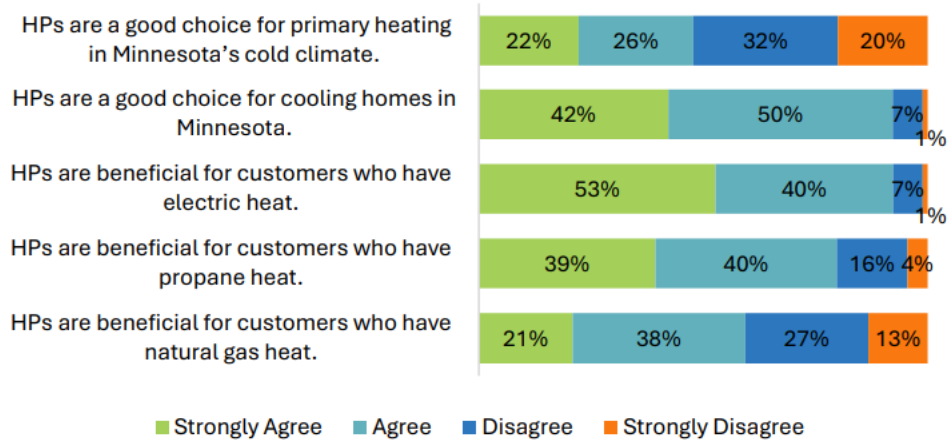
<sup>12</sup> *Id.* Page 6.

<sup>13</sup> *Id.* Page 66.

<sup>14</sup> *Id.* Page 7.

<sup>15</sup> *Id.* Page 20.

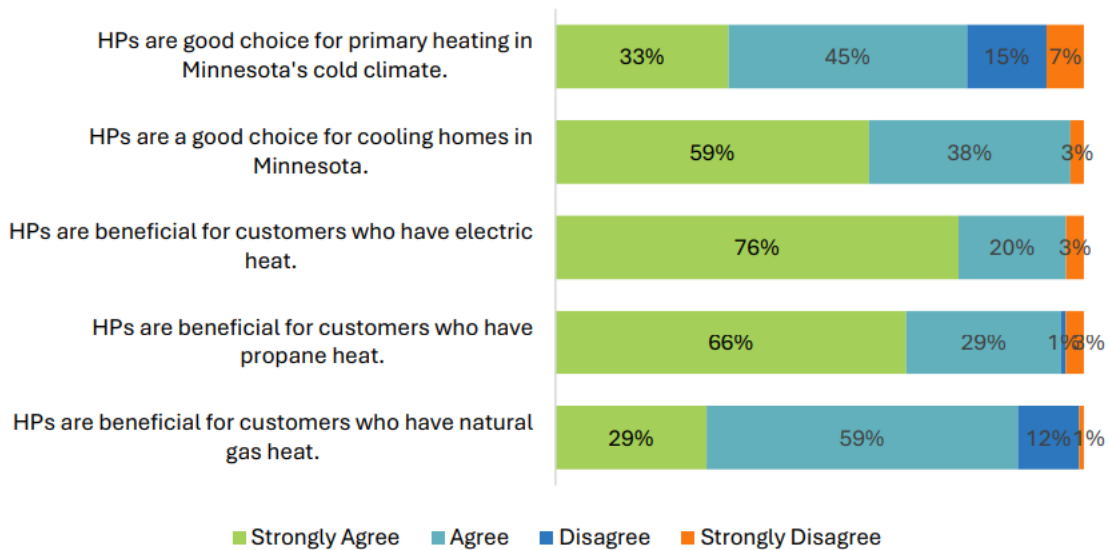
**Figure 5. Contractor Agreement with Heat Pump Application Types (N=89-91)**



**Note:** Due to rounding, percentages may not sum to 100 percent.

Importantly, the results in Figure 5 above were from contractors surveyed in the general population. When contractors who attended heat pump training sessions were asked the same questions, the results showed a more positive view of heat pumps for primary heating and whether they would benefit customers who have natural gas heat, as shown in Figure 6 below, highlighting the value of contractor engagement and training.<sup>16</sup>

**Figure 6. Contractor Trainee Agreement with Heat Pump Application Types (N=112-118)**



**Note:** Due to rounding, percentages may not sum to 100 percent.

<sup>16</sup> *Id.* Page 40.

While ASHPs are gaining traction to advance the market for high-efficient electric heating in Minnesota, full electrification scenarios are not the only path worth pursuing as the Commission considers the future of gas regulation in Minnesota. Dual fuel applications will be critical for decarbonizing gas end uses in Minnesota from both an emission reduction and cost standpoint.

## Dual Fuel Pathway

With the existing prevalence of natural gas heating in Minnesota, the reality is, simply, that natural gas will be a utilized heating source for many customers in the coming years. However, this does not mean the state will be unable to achieve significant emission reductions in homes that use natural gas for some portion of their heating needs.

In February 2023, CEE published a study titled *Minneapolis 1-4 Unit Residential Weatherization and Electrification Roadmap* for the City of Minneapolis.<sup>17</sup> The goal of the study was to develop a path for the city to achieve climate targets by modeling weatherization and electrification scenarios for Minneapolis' 88,441 1–4-unit residential homes. Through that modeling, CEE assessed the impact of home weatherization<sup>18</sup> and whole-house electrification retrofits of space heating, water heating, transportation, and other appliances<sup>19</sup> on upfront costs for upgrades, peak demand potential on the electric grid, utility bill and rate impacts, labor requirements, and emissions reductions. Regarding space heating specifically, the analysis considered the following three scenarios:

- Full electrification where a cold-climate ASHP with electric resistance backup replaces a furnace or boiler system.
- “50% utilization rate” dual fuel space heating where electric heat pumps are designed to provide 50 percent of home heating needs with 50 percent met by a furnace or boiler system – in this scenario, the switchover from the electric to gas heating system was assumed to occur at an outdoor air temperature of 25 degrees Fahrenheit.
- “80% utilization rate” dual fuel space heating where electric heat pumps are designed to provide 80 percent of home heating needs with 20 percent met by a furnace or boiler

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<sup>17</sup> *Minneapolis 1-4 Unit Residential Weatherization and Electrification Roadmap*. Developed by Center for Energy and Environment for the City of Minneapolis. February 2023. <https://www.mncee.org/minneapolis-1-4-unit-residential-weatherization-and-electrification-roadmap-pdf>.

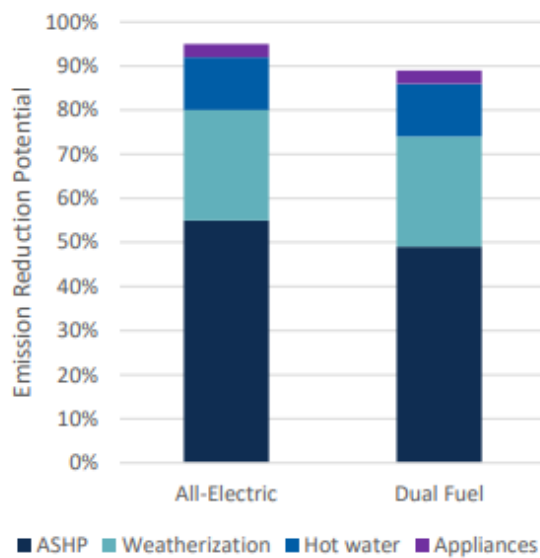
<sup>18</sup> *Id.* Page 6. This included improvements to wall insulation, attic insulation, air sealing, rim joist insulation, and ventilation.

<sup>19</sup> *Id.* This included electric service upgrades to support Level 2 EV charging, furnace replacement with centrally ducted cold-climate ASHP, boiler replacement with multi-split cold-climate ASHP, domestic water heater replaced with heat pump water heater, clothes dryer replaced with heat pump clothes dryer, and cooking equipment replaced with induction ranges and electric ovens.

system – in this scenario the switchover temperature was assumed to be 5 degrees Fahrenheit.<sup>20</sup>

When considering the weatherization and whole-house electrification measures assessed in the study, CEE’s analysis found 95 percent emission reductions from the full electrification scenario and 89 percent emission reductions from the 80% utilization rate scenario after retrofitting all 1-4-unit homes across the Minneapolis building stock. Of that total, 55 percent of the emission reductions in the full electrification scenario were due to space heating electrification, and 49 percent of the emission reductions in the 80% utilization rate were due to a cold-climate ASHP with gas furnace or boiler system backup. Emission reductions were based on utilities meeting the Carbon Free Standard provisions in Minn. Stat. § 216B.1691. These results are shown in Figure 7 below.<sup>21</sup>

**Figure 7. Emissions Reduction Potential from All-Electric and Dual Fuel Retrofit Scenarios by Measure**



As shown, significant emission reductions can be achieved in dual fuel applications. This is critical, particularly when considering the modeling done in the G21 Report that found electrification with gas backup to be the least-cost option to decarbonize gas end uses, and the Hydro-Quebec/Énergir modeling described below in which the dual fuel scenario had lower rate impacts on both electric and gas customers compared to full electrification.

However, as raised by several parties in initial comments, significant infrastructure cost and rate design concerns arise when dual fuel applications are implemented at scale, where gas

<sup>20</sup> *Id.* Page 8.

<sup>21</sup> *Id.* Page 21.

infrastructure provides necessary service to homes despite reduced sales due to electrification of gas end uses. Under the current rate and cost recovery structure for Minnesota gas utilities, gas distribution infrastructure costs are largely recovered through volumetric rates that are reliant on gas sales. Continually reduced sales from electrification puts consistent upward pressure on rates to recover infrastructure costs, which incentivizes more electrification. This cycle is discussed and visualized in the G21 Report.<sup>22</sup> Solutions to address the challenge of paying for gas infrastructure costs with declining sales due to electrification are worth considering. The Canadian province of Quebec provides an innovative approach.

### III. HYDRO-QUEBEC/ÉNERGIR MODEL

In Quebec, two utilities reached an innovative agreement that provides a pathway for decarbonizing buildings in cold climates while mitigating rate impacts for both gas and electric customers.

In 2020, the Quebec government released its 2030 Plan for a Green Economy outlining greenhouse gas (GHG) emission reduction goals, including a 50 percent reduction in building heating emissions by 2030.<sup>23</sup> When addressing the decarbonization of building heat, the plan indicates that a dual fuel approach is preferred over a full electrification approach, citing concerns about winter peak and affordability impacts.<sup>24</sup> In response, Hydro-Quebec, the provincially-owned electric provider for the majority of Quebec, and Énergir, the primary gas distribution utility, proposed a collaborative dual fuel approach to building heating decarbonization which was ultimately approved in 2022.<sup>25</sup>

Under the agreement, Hydro-Quebec and Énergir will collaborate to convert 90 percent of Énergir's residential, commercial, and institutional customers who currently heat with natural gas to dual fuel systems.<sup>26</sup> The dual fuel customers will heat their buildings with electricity except on the coldest days of the year, at which point their systems automatically switch to natural gas. As a result, the dual fuel customers only add load to the electric system outside of peak hours,<sup>27</sup> avoiding a major increase to the system peak while still achieving necessary emission reduction targets. Due to the added capacity provided by Énergir's natural gas system,

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<sup>22</sup> G21 Report. Page 41.

<sup>23</sup> *2030 Plan for a Green Economy: Framework Policy on Electrification and the Fight Against Climate Change*, Government of Quebec. Page 52. <https://cdn-contenu.quebec.ca/cdn-contenu/adm/min/environnement/publications-adm/plan-economie-verte/plan-economie-verte-2030-en.pdf>

<sup>24</sup> *Id.* Page 53.

<sup>25</sup> *Decision*, Régie de L'Énergie du Québec, May 2022. R-4169-2021. Translated using Google Translate.

<sup>26</sup> *Offre d'Hydro-Québec Distribution et d'Énergir...*, September 16, 2021. R-4169-2021. Page 13. Translated using Google Translate.

<sup>27</sup> Hydro-Quebec a winter-peaking utility as the majority of homes in Quebec already heat with electricity.

Hydro-Quebec avoids many of the costs it would face under a full electrification scenario. An innovative component of the dual fuel agreement is an annual payment from Hydro-Quebec to Énergir that partially compensates Énergir for the system benefits it provides to Hydro-Quebec.

Although Quebec's context is different from Minnesota's in many ways, it shares ambitious decarbonization goals and the challenges that come with electrifying in a cold climate. The Hydro-Quebec and Énergir agreement could provide valuable lessons and possible solutions for Minnesota.

### **Scenario Analysis**

To achieve the GHG emission reduction targets set by the Quebec government for the building sector, Quebec's utilities could either pursue a full electrification or dual fuel approach. To compare the two approaches, Hydro-Quebec and Énergir conducted a scenario analysis which examined the emission reduction potential, cost impacts, and rate impacts of each. The utilities concluded that a dual fuel approach would achieve the necessary emission reductions at a lower cost to customers of both utilities. This finding is similar to that of the G21 Report, which concluded that a dual fuel scenario would achieve many of the emission reductions achieved by a full electrification approach in Minnesota, but at a significantly lower cost.<sup>28</sup>

To conduct the scenario analysis, Hydro-Quebec and Énergir defined the group of customers targeted for conversion, estimated the volume of natural gas that would be converted to electricity, and calculated the resulting emission and cost impacts for both the full electrification and dual fuel scenarios.

#### *Definition of the Two Scenarios*

The utilities took the following steps to define the scenarios:

1. Define the target customers for conversion.
2. Estimate the volume of natural gas associated with the target customers.
3. Separate the volume of natural gas consumed by the target customers according to end-use (i.e. water heating, space heating, other).
4. Estimate the decrease in natural gas consumption and increase in electricity consumption following conversion to a dual fuel or all-electric system.

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<sup>28</sup> *Decarbonizing Minnesota's Natural Gas End Uses*. Stakeholder Process Summary and Consensus Recommendations. Co-convened by the Great Plains Institute and Center for Energy and Environment. July 2021. Page 58.

For both scenarios, the target customers were defined as all residential and commercial Énergir customers with annual natural gas consumption under 15,000 m<sup>3</sup> and all institutional customers with annual consumption under 500,000 m<sup>3</sup>.<sup>29</sup> About 96 percent of residential customers, 72 percent of commercial, and 98 percent of institutional customers fell within these parameters and were included in the target group for the scenario analysis.<sup>30</sup>

After determining which customers were included in the target group, Hydro-Quebec and Énergir calculated each customer's three-year average natural gas consumption from 2017 through 2019.<sup>31</sup> Next, they estimated the proportion of each customer's natural gas consumption attributable to space heating by comparing usage levels during winter and summer peaks. They then estimated the proportion of consumption used for water heating, leaving three categories of end-uses: space heating, water heating, and other uses such as gas stoves.<sup>32</sup>

In the full electrification scenario, the utilities assume all water and space heating consumption is converted to electricity, with electric resistance heating acting as the back-up heating source during times of extreme cold.

Under the dual fuel scenario, the utilities assume all water heating consumption is converted to electricity, while space heating consumption is partially converted. Dual fuel customers would only use natural gas for space heating when temperatures are below a pre-determined switchover temperature. In practice, the switchover temperature will be either -12 or -15 degrees Celsius (i.e. 10.4 or 5 degrees Fahrenheit) depending on the customer's climate zone; however, for the scenario analysis, the switchover temperature was assumed to be -9 or -12 degrees Celsius (i.e. 15.8 or 10.4 degrees Fahrenheit) to account for the possibility of customers manually switching to natural gas at slightly higher temperatures as their electric equipment loses effectiveness.<sup>33</sup>

Table 1 shows various combinations of gas and electric equipment possible under the dual fuel scenario:

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<sup>29</sup> *Offre d'Hydro-Québec Distribution et d'Énergir...*, September 16, 2021. R-4169-2021. Page 11. Translated using Google Translate. 15,000 m<sup>3</sup> of natural gas is equal to approximately 529.5 Dth and 500,000 m<sup>3</sup> of natural gas is equal to approximately 17,650 Dth, i.e. 1 m<sup>3</sup> of natural gas = 0.0353 Dth.

<sup>30</sup> *Id.* Page 13. (Although the scenario analysis was limited to customers who fit these size parameters, customers who do not fit them will still be allowed to participate in the dual-fuel offering if they desire.)

<sup>31</sup> The utilities chose to exclude 2020 due to the abnormal influence of the COVID pandemic.

<sup>32</sup> *Id.* Page 14.

<sup>33</sup> *Id.* Page 15.

**Table 1: Dual-Fuel Target Technologies by Sector<sup>34</sup>**

End-Use	Sector/ Sub-Sector	Existing Technology	Complementary Technology for Dual Energy
Space Heating	Single-Family Home	Furnace	Heat pump
		Boiler	Electric boiler
	Multi-Unit Dwelling	Boiler	Electric boiler
	Commercial	Furnace	Heat pump
		Boiler	Electric boiler
		Rooftop unit	Heat pump
	Institutional	Furnace	Heat pump
		Boiler	Electric boiler
		Rooftop unit	Heat pump
Water Heating	All	Natural gas water heater	Electric resistance water heater

Once the target customers’ average consumption of natural gas is established and classified according to end-use, it is possible to estimate the volume of natural gas converted under each scenario. The full electrification scenario assumes that all the natural gas consumption attributable to water and space heating is converted to electricity, while the dual fuel scenario assumes that all the consumption attributable to water heating and the portion of consumption for space heating occurring above the pre-determined switchover temperature are converted to electricity.

The utilities assume a linear conversion over a 15-year period, with 1/15<sup>th</sup> of the total conversion potential being realized each year. In other words, assuming implementation begins in 2022, about 9/15ths of the total conversion potential will have occurred by the end of 2030.<sup>35</sup>

### Scenario Results

Using the assumptions and estimated volumes of natural gas displaced in each scenario, the utilities produced the estimations shown in Table 2 regarding GHG reduction potential, cost impacts, and impacts on the gas and electric systems.<sup>36</sup>

<sup>34</sup> *Id.* Page 16.

<sup>35</sup> *Id.* Page 17.

<sup>36</sup> *Id.* Pages 18-21 and 40 and *Decision*, Régie de L’Énergie du Québec, May 2022. R-4169-2021. Page 51.

**Table 2: Scenario Analysis Results\***

	Full Electrification Scenario	Dual Fuel Scenario	Difference (DF minus FE)
GHG Reduction Potential (in 2030)	750,000 tons	540,000 tons	-210,000 tons
Total Volume of Natural Gas Displaced (in 2030)	401 Mm <sup>3</sup>	287 Mm <sup>3</sup>	-114 Mm <sup>3</sup>
Additional Electricity Consumed (in 2030)	2,957 GWh	1,837 GWh	-1,120 GWh
Additional Electric Capacity Required (in 2030)	2,070 MW	63 MW	-2,007 MW
Net Financial Impact for Hydro-Quebec (2022-2030 Cumulative)	-\$2,108 million	-\$490 million	\$1,618 million
Net Financial Impact for Énergir (2022-2030 Cumulative)	-\$594 million	-\$530 million	\$64 million
Hydro-Quebec Rate Impacts (2022-2030 cumulative)	3.0%	0.9%	-2.1%
Énergir Rate Impacts (2022-2030 cumulative)	5.0%	4.5%	-0.5%

\*Orange highlight indicates a category where the dual fuel approach is less beneficial than the full electrification approach, while green indicates a category where it is more beneficial.

Considering the sufficient reduction in GHG emissions and preferable financial and rate impacts of the dual fuel scenario for both Énergir and Hydro-Quebec, the utilities argue that dual fuel is a more responsible approach to decarbonizing than full electrification.

#### *GHG Reduction Potential*

The utilities estimate a reduction of 750,000 tons of GHGs in 2030 under the full electrification scenario compared to a 540,000 ton reduction under the dual fuel scenario.<sup>37</sup> When considering the cumulative impacts of the agreement projected for 2022 through 2030, the total GHG reduction potential is equal to 3.78 million tons of GHGs under the full electrification scenario and 2.7 million tons under the dual fuel scenario.<sup>38</sup>

<sup>37</sup> *Offre d'Hydro-Québec Distribution et d'Énergir...*, September 16, 2021. R-4169-2021. Pages 18 and 20. Translated using Google Translate.

<sup>38</sup> *Decision*, Régie de L'Énergie du Québec, May 2022. R-4169-2021. Translated using Google Translate. Page 51.

### Financial Impacts

Both utilities experience negative financial impacts under the full electrification and dual fuel scenarios, with lesser impacts under the dual fuel scenario. The utilities estimate these impacts by considering changes in revenue and costs.

Énergir experiences a loss of revenue in both scenarios due to a decrease in natural gas consumption, although this loss is smaller in the dual fuel scenario since not all space heating is converted to electricity. As natural gas consumption declines, Énergir also avoids costs. Énergir uses the avoided costs from its evaluation of efficiency programs and the long-term marginal cost of providing service to estimate the cost impacts of declining gas consumption and the loss of customers.<sup>39</sup> Since, under the dual fuel scenario, customers remain on the gas system despite a decrease in their consumption, certain costs associated with transmission, distribution, and balancing cannot be avoided, making these per-unit avoided costs lower than under the full electrification scenario.<sup>40</sup>

As shown in Table 3, Énergir's avoided costs in both scenarios are still smaller than its lost revenue, meaning the net financial impact is detrimental, rather than beneficial, regardless of the chosen scenario.

**Table 3: Énergir Financial Impacts (in 2030)\*<sup>41</sup>**

	Full Electrification	Dual Fuel
Revenue Impact (M\$)	-255	-167
Cost Impact (M\$)	-136	-61
Net Financial Impact (RI minus CI) (M\$)	-119	-106

*\*Green highlight indicates a beneficial financial impact for the utility, while orange highlight indicates a detrimental financial impact.*

Hydro-Quebec experiences an increase in revenue in both scenarios as customers convert from natural gas to electricity, with a larger increase under the full electrification scenario. However, the increase in revenue is exceeded by the increase in costs. Cost impacts are especially acute under the full electrification scenario, since Hydro-Quebec sees an increase in its system peak demand, creating significantly higher marginal capacity costs than under the dual fuel

<sup>39</sup> *Offre d'Hydro-Québec Distribution et d'Énergir...*, September 16, 2021. R-4169-2021. Page 21. Translated using Google Translate.

<sup>40</sup> *Id.* Page 22.

<sup>41</sup> *Id.* Page 25.

scenario.<sup>42</sup> Under the dual fuel scenario, the additional heating capacity provided by Énergir allows Hydro-Quebec to avoid additional marginal capacity costs associated with space heating. The remaining \$9 million in capacity cost impacts are attributable to water heating, which is fully electrified under both scenarios.<sup>43</sup>

**Table 4: Hydro-Quebec Financial Impacts (in 2030)\*<sup>44</sup>**

	Full Electrification	Dual Fuel
Revenue Impact (M\$)	309	116
Energy Cost Impact, from added GWh (M\$)	312	194
Capacity Cost Impact, from added MW (M\$)	293	9**
T and D Cost Impact (M\$)	167	46
Net Financial Impact (revenue impact minus cost impacts) (M\$)	-463	-134

*\*Green highlight indicates a beneficial financial impact for the utility, while orange highlight indicates a detrimental financial impact.*

*\*\*The capacity cost impacts for the dual fuel scenario are attributable to water heating. Peak space heating will be met with natural gas in this scenario.*

Hydro-Quebec’s added energy, transmission, and distribution costs are also lower under the dual energy scenario since customers consume slightly less electricity than under the full electrification scenario. Combined, the decreases in energy, capacity, and transmission and distribution costs greatly reduce Hydro-Quebec’s financial impacts under the dual fuel scenario compared to the full electrification scenario.

#### *Rate Impacts*

Under both scenarios, the financial impacts experienced by Hydro-Quebec and Énergir result in rate increases. To calculate the rate impacts, the utilities use their most recently approved revenue requirements as a baseline. The estimated net financial impact for each scenario is divided by the baseline revenue requirement to produce the percent change to the revenue requirement over time and, as a result, the impact on rates.<sup>45</sup>

As shown above in Table 2, Énergir customers are projected to experience a cumulative rate increase of 5 percent between 2022 and 2033 under the full electrification scenario, but only a

<sup>42</sup> *Id.* Pages 31, 35, and 38.

<sup>43</sup> *Id.* Page 35.

<sup>44</sup> *Id.* Pages 32 and 38.

<sup>45</sup> *Id.* Page 39.

4.5 percent increase under the dual fuel scenario. Hydro-Quebec customers are projected to experience a cumulative rate increase of 3 percent under the full electrification scenario, but only a 0.9 percent increase under the dual fuel scenario.<sup>46</sup>

To summarize, rate impacts will be lower for both utilities under the dual fuel scenario, but the difference between the two scenarios is much more significant for Hydro-Quebec. Énergir will still see significant rate impacts under the dual fuel scenario despite providing essential capacity for Hydro-Quebec during winter peaks, which, in turn, greatly reduces Hydro-Quebec's rate impacts.

### **GHG Contribution**

Although both utilities prefer a dual fuel approach, Hydro-Quebec benefits more than Énergir under this scenario in terms of financial and rate impacts. Énergir plays an essential role in the dual energy approach by actively facilitating the conversion of its customers to dual fuel systems and providing added capacity to Hydro-Quebec during winter peaks. To compensate Énergir for this service and better distribute the cost impacts of decarbonization between the two utilities and their customers, the utilities proposed an annual payment from Hydro-Quebec to Énergir as part of the dual fuel agreement. Referred to as the Greenhouse Gas (GHG) Contribution, this annual payment serves multiple purposes: it partially compensates Énergir for the capacity and resulting cost savings it provides to Hydro-Quebec during winter peaks, it eases the impacts of decarbonization on Énergir's ratepayers, and it rewards Énergir for its role in reducing greenhouse gas emissions.<sup>47</sup>

#### *Calculation Methodology*

The size of the GHG Contribution is largely dependent on the number of Énergir's customers converted to dual fuel systems and the volume of the resulting reduction of natural gas consumption.<sup>48</sup> For each Énergir customer that converts to a dual fuel system, Hydro-Quebec pays Énergir an amount proportional to that customer's reduced natural gas consumption annually for 15 years following the customer's conversion.<sup>49</sup>

There are two phases to the payment, with one occurring in June and based on the customer's historic natural gas consumption and the second occurring at the end of the year to adjust the

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<sup>46</sup> *Decision*, Régie de L'Énergie du Québec, May 2022. R-4169-2021. Page 51.

<sup>47</sup> *Id.* Pages 115-123.

<sup>48</sup> *Offre d'Hydro-Québec Distribution et d'Énergir...*, September 16, 2021. R-4169-2021. Page 43. Translated using Google Translate.

<sup>49</sup> *Id.* Page 46.

total annual payment based on the customer’s actual reduction in natural gas consumption.<sup>50</sup> The GHG Contribution was designed to equal roughly \$85 million in 2030, or \$404 million cumulatively from 2022 through 2030.<sup>51</sup> The target amount was agreed upon by Hydro-Quebec and Énergir, but the actual GHG Contribution may be less if the decrease in natural gas consumption is lower than expected, or more if it is higher than expected. Essentially, the payment is directly tied to the actual volume of natural gas that is displaced.

*Estimated Impact*

Since the GHG Contribution is an annual payment from Hydro-Quebec to Énergir, it impacts the estimated financial and rate impacts of the dual fuel scenario. For comparison, Tables 5 and 6 show financial and rate impacts under the full electrification scenario, the dual fuel scenario pre-GHG Contribution, and the dual fuel scenario post-GHG Contribution for both utilities. The GHG Contribution is treated like an additional cost for Hydro-Quebec and additional revenue for Énergir.

**Table 5: Comparison of Estimated 2030 Net Financial Impacts<sup>52</sup>**

Utility	Full Electrification Scenario (M\$)	Dual Fuel Scenario without GHG Contribution (M\$)	GHG Contribution (M\$)	Dual Fuel Scenario with GHG Contribution (M\$)
Hydro-Quebec	-463	-134	-85	-219
Énergir	-119	-106	85	-21

**Table 6: Comparison of Cumulative Rate Impacts (from 2022-2030)<sup>53</sup>**

Utility	Full Electrification Scenario	Dual Fuel Scenario without GHG Contribution	Dual Fuel Scenario with GHG Contribution
Hydro-Quebec	3.0%	0.9%	1.4%
Énergir	5.0%	4.5%	0.9%

<sup>50</sup> *Id.* Pages 43-45.

<sup>51</sup> *Réponse des Distributeurs à L’Engagement Numéro 2*, February 2, 2024. R-4169-2021. Page 4. Translated using Google Translate.

<sup>52</sup> *Offre d’Hydro-Québec Distribution et d’Énergir...*, September 16, 2021. R-4169-2021. Page 42. Translated using Google Translate.

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

When the GHG Contribution is included, Énergir's rate impacts decrease from 4.5 percent to 0.9 percent, greatly benefitting its customers. Contrastingly, since Hydro-Quebec is essentially paying Énergir for backup heating capacity, Hydro-Quebec's rate impacts increase from 0.9 percent to 1.4 percent following the addition of the GHG Contribution. The result is a more even distribution of the rate impacts associated with decarbonization between the two utilities. Notably, the rate impacts for both utilities are still significantly lower when compared to the full electrification scenario.

### **Implementation of the Dual Fuel Agreement**

The Régie de L'Énergie of Quebec, the province's energy regulatory body, approved the first stage of Énergir and Hydro-Quebec's dual fuel proposal in May 2022 and the second stage in May 2023.<sup>54</sup> There were two phases of implementation for the dual fuel approach:

1. June 2022: the dual fuel offering was made available to residential customers.
2. November 2023: the dual fuel offering was made available to commercial and institutional customers.<sup>55</sup>

The dual fuel offering requires the installation of electric space and water heating equipment to complement existing gas equipment and includes a distinct rate that encourages the optimized use of each fuel type.<sup>56</sup> When enrolled in the dual fuel rate, customers benefit from a lower price for electricity when temperatures remain above either -12 or -15 degrees Celsius, depending on the customer's climate zone.<sup>57</sup> When temperatures drop below these switchover temperatures, the cost of electricity for customers on the dual fuel rate increases significantly, incentivizing a switch to natural gas for space heating needs.

The residential dual fuel rate is called the DT Tariff and the commercial and institutional rate is called the Small- and Medium-Power Dual-Energy Rate for Space Heating. Table 7 provides an overview of the rates.

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<sup>54</sup> *Decision*, Régie de L'Énergie du Quebec, May 2023. R-4169-2021.

<sup>55</sup> *New dual-energy offer for commercial and institutional customers*, Hydro-Quebec, November 6, 2023. <https://news.hydroquebec.com/news/press-releases/all-quebec/new-dual-energy-offer-for-commercial-and-institutional-customers-another-step-towards-lowering-greenhouse-gas-emissions.html>.

<sup>56</sup> The utilities rely on existing funding through their efficiency programs and from government sources to enable the installation of efficient electric space and water heating equipment.

<sup>57</sup> *Rate DT – Dual Energy*, Hydro-Quebec. <https://www.hydroquebec.com/residential/customer-space/rates/rate-dt-how-it-works.html>

**Table 7: Overview of Hydro-Quebec Dual Fuel Rates<sup>58</sup>**

Name	Target Customer Base	Price Equal to or Above Switchover Temperature (\$/kWh)*	Price Below Switchover Temperature (\$/kWh)
DT Rate	Residential customers with dual fuel systems	\$0.04963	\$0.29018
Small- and Medium-Power Dual-Energy Rate for Space Heating	Commercial and institutional customers with dual fuel systems	\$0.06738	\$0.60262

*\*The switchover temperature is set at -12 or -15 degrees Celsius depending on region. Price is shown as dollars (CAD) per kWh.*

When a customer initially installs their dual fuel system, the utility ensures the system can automatically switch from electricity to natural gas when temperatures fall below -12 or -15 degrees Celsius and the more expensive electricity rate is activated.<sup>59</sup> The customer’s system must be equipped with an outdoor temperature gauge and automatic switch and the utility provides an indicator light that shows the customer which fuel is being used to heat their home at a given time. The customer must also have a special meter for their space heating consumption. While customers will ideally maximize their electricity consumption outside of extreme cold events, they are able to manually switch to natural gas at higher temperatures should their electric equipment lose efficiency and not fully meet their heating needs.<sup>60</sup>

### **Applicability in Minnesota**

Quebec’s dual fuel approach to decarbonizing space and water heating provides a possible pathway for achieving emission reduction goals while maintaining affordability for both electric and gas customers in a cold climate. Like Quebec, Minnesota also faces the challenge of affordably decarbonizing homes and buildings that are currently dependent on natural gas and situated in a colder climate. Like Hydro-Quebec, two of Minnesota’s three electric investor-owned utilities already have winter peaks,<sup>61</sup> while the Midcontinent Independent System

<sup>58</sup> *Id.* and *Small- and Medium-Power Dual-Energy Rate for Space Heating*, Hydro-Quebec. <https://www.hydroquebec.com/business/customer-space/rates/dual-energy-rate-space-heating-billing.html>.

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

<sup>60</sup> *Offre d’Hydro-Québec Distribution et d’Énergir...*, September 16, 2021. R-4169-2021. Page 15. Translated using Google Translate.

<sup>61</sup> *2025-2039 Integrated Resource Plan*, Minnesota Power, March 3, 2025. Docket E015/RP-25-127. Page 29. and *Application for Resource Plan Approval 2022-2036*, Otter Tail Power, September 1, 2021. Page 72.

Operator (MISO) is also anticipating growing reliability risks in the winter season.<sup>62</sup> All three electric IOUs already offer some variation of a dual fuel rate, meaning the utilities are equipped to educate their customers about dual fuel offerings.<sup>63</sup>

However, there are also crucial differences between Quebec and Minnesota that could impact how effective Quebec's approach would be if applied in Minnesota. One significant difference is the proportion of households in each jurisdiction that currently use natural gas as the primary heating source. An estimated two out of every three homes in Minnesota heat primarily with natural gas,<sup>64</sup> making it by far the most common space heating fuel in the residential sector, while in Quebec, the vast majority of homes heat primarily with electricity and only about six percent heat primarily with natural gas.<sup>65</sup> Decarbonizing building heat is therefore a smaller-scale task in Quebec than in Minnesota.

Quebec utilities also have different ownership models and generation mixes than Minnesota utilities. Hydro-Quebec is owned by the provincial government, while Minnesota's largest utilities are investor-owned. Hydro-Quebec provides about 99 percent of Quebec's hydropower, which makes up 94 percent of the province's electricity generation, creating an abundance of carbon-free electricity.<sup>66</sup> Énergir is a privately-owned company, with 81 percent of its ownership held by the Caisse de Depot et Placement du Quebec (CDPQ), which manages Quebec's pension plans, and 19 percent held by the Fonds de Solidarite FTQ, a labor investment fund.<sup>67</sup> Énergir has committed to reaching net zero emissions as a company by 2050 using renewable natural gas, energy efficiency, and the dual fuel agreement.<sup>68</sup>

Finally, with Hydro-Quebec serving most of Quebec and Énergir providing most of the province's natural gas needs, the administrative burden of coordinating between electric and gas utilities is lower compared to that of Minnesota utilities, which sometimes overlap with many other utilities.

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<sup>62</sup> *2025 OMS-MISO Survey Results*, MISO and OMS, June 6, 2025. Slide 2. <https://cdn.misoenergy.org/20250606%20OMS%20MISO%20Survey%20Results%20Workshop%20Presentation702311.pdf>

<sup>63</sup> Xcel Energy's Back-Up Relief Program, Minnesota Power's Dual-Fuel Rate, and Otter Tail Power's Dual Fuel Rate.

<sup>64</sup> *Minnesota State Profile and Energy Estimates*, U.S. Energy Information Administration, September 19, 2024. <https://www.eia.gov/state/analysis.php?sid=MN>.

<sup>65</sup> *Introduction to Natural Gas Use*, Canada Energy Regulator, March 4, 2022. <https://www.cer-rec.gc.ca/en/data-analysis/energy-commodities/natural-gas/report/canadian-residential-natural-gasbill/index.html>.

<sup>66</sup> *Provincial and Territorial Energy Profiles: Quebec*, Canada Energy Regulator, September 10, 2024. <https://www.cer-rec.gc.ca/en/data-analysis/energy-markets/provincial-territorial-energy-profiles/provincial-territorial-energy-profiles-quebec.html>.

<sup>67</sup> *Corporate structure*, Énergir. <https://energir.com/en/about/the-company/who-we-are/corporate-structure>.

<sup>68</sup> *Climate resilience: Énergir is committed to decarbonization*, Énergir, February 17, 2022. <https://energir.com/en/about/media/news/resilience-climatique-energir-engagee-dans-la-voie-de-la-decarbonation>.

CEE provides the Hydro-Quebec/Énergir model for stakeholder and Commission consideration as a potential way to address recovery of gas infrastructure costs in the face of policies encouraging electrification of gas end uses.

#### **IV. CONCLUSION**

CEE appreciates the opportunity to provide reply comments in this proceeding, and to provide broader context to the issues facing the Commission as it considers changes to natural gas utility regulation in the face of emission reduction goals. CEE continues to recommend the decision options provide in initial comments filed July 8, 2025, and will provide final recommendations in supplemental comments.