



## Minnesota Center for Environmental Advocacy

August 22, 2019

### **VIA Electronic Mail**

Dear Mr. Burr,

The Minnesota Center for Environmental Advocacy (MCEA) provides these comments in response to the Request for Written Comments dated July 30, 2019 by the Minnesota Department of Commerce. MCEA appreciates the stakeholder process convened by the Department of Commerce and welcomes the opportunity to comment on Minnesota's policy regarding utility fuel-switching programs and the Conservation Improvement Program. Electrification through fuel switching has the potential to lower costs for Minnesota households while simultaneously helping the state meet its ambitious greenhouse gas reduction goals. MCEA believes policymakers should consider adopting an approach to energy conservation programs that maximizes both of these societal benefits, regardless of the fuel type used.

### **Introduction**

Minnesota's Conservation Improvement Program (CIP) has already succeeded in achieving significant levels of energy savings, greenhouse gas emission reductions, and lower costs for utility customers. However, the program has the potential to generate even more benefits. As Minnesota's electric sector continues to transition from fossil fuels towards cleaner, low-cost energy sources like wind and solar, heating electrification will be a key component of achieving a decarbonized, affordable future. Adopting a fuel-neutral approach to CIP and allowing beneficial fuel-switching would help spur electrification and maximize these societal benefits.

### **Fuel Switching Has the Potential to Advance CIP Goals**

The basic purpose of CIP is to conserve energy. However, as noted by Xcel Energy in its initial comments in this docket, saving energy alone is not beneficial.<sup>1</sup> The legislature has identified that energy savings should be pursued "systematically and aggressively" in order to achieve the following goals: "reduce utility costs for businesses and residents, improve the competitiveness and profitability

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<sup>1</sup> Xcel Energy, *Initial Comments*, Docket E,G999/CIP-18-402 & CIP Special Service List, July 20, 2019, at page 5

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of businesses, create more energy-related jobs, reduce the economic burden of fuel imports, and reduce pollution and emissions that cause climate change.”<sup>2</sup> The Department of Commerce should consider an approach to CIP that best achieves these goals, regardless of fuel. This type of “fuel-neutral” approach could include carefully vetted fuel switching programs, particularly those that encourage switching from fossil-fueled space and water heating to electric heat pump technologies.

In 2007, Minnesota’s Next Generation Energy Act established the state’s Energy Efficiency Resources Standard (EERS), and beginning in 2010 utilities have been required to develop CIP plans to achieve annual energy savings targets.<sup>3</sup> Over the past several years, utilities have been successful at achieving between 1.4 and 1.7 percent energy savings every year.<sup>4</sup> During the last reporting years, electric and gas utilities exceeded their statutory goals and saved over 13 trillion BTUs of energy, reduced CO<sub>2</sub> emissions by over 1.6 million tons, and lowered energy bills by over \$230 million for Minnesotan ratepayers.<sup>5</sup> However, despite these achievements, Minnesota is not on track to meet its greenhouse gas reduction goals in the building sector. In fact, since 2005, emissions in the residential and commercial sectors—which include space and water heating—have increased by 11 percent and 1 percent, respectively.<sup>6</sup> It is clear that more must be done to reduce emissions in Minnesota’s buildings if the state is to achieve its climate goals.

With over 80 percent of space heating systems in the state using fossil fuels like natural gas, propane, or fuel oil,<sup>7</sup> Minnesota has a real opportunity to reduce emissions through building electrification. And the benefits of electrification will only continue increasing as the state’s electric sector transitions toward more clean and renewable generation sources. Adopting a fuel-neutral approach to CIP and allowing electrification to occur through fuel-switching would encourage this electrification while also continuing to reduce overall energy use in buildings.

### **Delivered Fuels are a High-Impact Use Case**

While Minnesota’s electric sector is transforming, the impacts of fuel switching will change depending on factors like an electric utility’s generation mix, fuel costs, and the prices and efficiencies

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<sup>2</sup> Minn. Stat. §216B.2401

<sup>3</sup> Minnesota Department of Commerce, *Conservation Improvement Program: Energy Savings, CO<sub>2</sub> Reductions and Economic Benefits Achieved 2015-2016*, December, 2018, at page 4

<sup>4</sup> Ibid at page 6

<sup>5</sup> Ibid at page 3

<sup>6</sup> Minnesota Pollution Control Agency and Minnesota Department of Commerce, *Greenhouse Gas Emissions in Minnesota: 1990-2016*, January, 2019 at page 9

<sup>7</sup> Bob Eleff, *Residential Space Heating Fuels in Minnesota*, Information Brief, Research Department, Minnesota House of Representatives, January, 2017, at page 2

of available space and water heating technologies. However, there is one clear use case that already provides significant benefits today: switching from propane and fuel oil furnaces to electric heat pumps.

Delivered fuels represent a “low-hanging fruit” for decarbonization in the residential and commercial sectors. Although propane and fuel oil account for space and water heating in just 10 percent of households, they are responsible for 20 percent of space and water heating emissions.<sup>8</sup> In a recent report, the Rocky Mountain Institute recommended that utilities, regulators and policymakers prioritize electrifying buildings that use propane and oil for heating, due to the resulting reductions in both carbon emissions and costs.<sup>9</sup> The graph below illustrates the annual carbon emissions from heating with electric heat pumps, natural gas, oil, and propane in Providence, Rhode Island.



Figure 1. Annual Marginal Carbon Emissions in Providence (Thousand lb. CO2)

Source: Sherri Billimoria, Leia Guccione, Mike Henchen, and Leah Louis-Prescott, *The Economics of Electrifying Buildings*, Rocky Mountain Institute, 2018, Figure 19

<sup>8</sup> Sheri Billimoria, Leia Guccione, Mike Henchen, and Leah Louis-Prescott, *The Economics of Electrifying Buildings*, Rocky Mountain Institute, 2018, at page 8

<sup>9</sup> *Ibid*, at page 10

In both new construction and retrofit scenarios, switching from delivered fuels to electric heat pumps leads to a significant reduction in greenhouse gas emissions. Any analysis in Minnesota would necessarily differ from that of Rhode Island due to the states' differing electricity generation mixes and climates, but this study provides a helpful high-level comparison of the carbon intensities of each heating technology.

In addition to reducing greenhouse gas emissions, switching from delivered fuels to electric heat pumps results in substantial cost savings for households. A 2017 study by the Minnesota House of Representatives Research Department calculated the estimated cost of residential heating for a range of space heating technologies.<sup>10</sup> The study found that the cost of heating with propane is between \$22.59 and \$31.28 per million BTUs, depending on furnace efficiency. This is compared to a cost of \$6.76 to \$17.48 for air source heat pumps, depending on efficiency as well as electricity prices. Even at the highest electricity price, heating with propane and oil is almost twice as costly as an electric heat pump. With 10.5 percent of Minnesota's households and businesses using propane for space heating<sup>11</sup>, there is a significant opportunity to reduce costs through fuel switching.

### **Summary and Recommendation**

The one in ten Minnesota households that use propane are paying roughly twice as much for heat as their neighbors in other parts of the state. Delivered fuels are also contributing disproportionately to climate change, and contributing to the rising emissions in Minnesota's residential and commercial sectors. Replacing these fuels with electric heat pumps is an important component of an affordable decarbonization pathway for the state. Policymakers could encourage this transition by allowing electrification through fuel switching in CIP, and in particular by prioritizing electrification in homes and businesses using propane and oil heaters. At present, this type of fuel-switching would have the greatest impact in terms of reducing both greenhouse gases and space and heating costs in Minnesota.

### **Conclusion**

MCEA appreciates the opportunity to participate in this stakeholder process and to comment on Minnesota's policy regarding CIP and utility fuel-switching programs. Adopting a fuel-neutral approach to the Conservation Improvement Program is an opportunity to maximize the societal benefits of the program by further reducing heating costs and greenhouse gas emissions. To have the

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<sup>10</sup> Eleff, 2017, at page 13

<sup>11</sup> Ibid, at page 2

greatest impact, policymakers should prioritize replacing systems that run on propane and fuel oil with electric heat pumps.

Sincerely,

/s/ Carolyn Berninger

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