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AN ALLETE COMPANY

August 22, 2019

Mr. Michael Burr
Fuel Switching Meeting Facilitator
Burr Energy
mtburr@burrenergy.com

RE: Minnesota Power Comments on Minnesota Department of Commerce Fuel Switching Policy

Dear Mr. Burr:

Minnesota Power submits to Burr Energy these comments on the Minnesota Department of Commerce Fuel Switching Policy in response to the request received on July 30, 2019.

Question #1: During Meeting #1, several stakeholders discussed the need for a deeper analysis of various use cases and technology solutions that may result in utility fuel switching activity (between natural gas and electric utilities) that is prohibited for CIP incentives. Please describe:

a. **Potential energy-saving measures that could result in fuel switching, and that you believe should be made eligible for CIP incentives;**
Eligible measures in the residential sector might include:
1. HVAC equipment, especially air source heat pumps (ducted and ductless) and ground source heat pumps
2. Water heating, for example heat pump water heaters
3. Cooking appliances, for example induction stove tops
4. Heat pump clothes dryers

Eligible measures in the commercial and industrial sector might include:
1. All of the same technologies in the residential sector but at a larger scale
2. Industrial process heating where a gas heat source is replaced with an electric heat source
3. Industrial process heating where a gas heat source is replaced with an alternative electric process, for example:
   i. Replacing a gas boiler with a reverse osmosis water filtration system
   ii. Replacing a gas oven with an ozone or ultraviolet sterilization system
   iii. Removing the need for a gas dryer by switching to UV curable materials

b. **Noteworthy benefits, factors, and considerations involving these use cases and technologies; and**
Given the highly economical pricing of natural gas, the main benefit in changing from natural gas to electric is carbon dioxide emissions reduction. The carbon reduction will be highly

dependent on the electric generation source, and as a result this benefit will vary based on the location and the time of use. Despite the complicated nature of quantifying the value of carbon reduction, Minnesota Power believes that a reasonable approximation can be made for the purpose of conservation program filings and benefit calculations.

c. **Uncertainties and unintended consequences related to these use cases or technologies that should be addressed in the policy process.**
While switching from natural gas to electric has potential to advance the state's environmental goals, there may be fewer benefits for customers in the near term given the recent low cost of gas. While it may be less cost effective to switch from natural gas to electric in the near term, it seems prudent to accommodate this scenario in any rulemaking to prepare for a future where gas prices may rise as electric generation continues to decarbonize.

Additionally, the Company recognizes that there could be stranded assets related to natural gas distribution if customers switched a significant amount of load from natural gas to electricity. This is unlikely to be an issue in the near future. Similarly, adequate planning will be needed to accommodate additional electric load.

Question #2: Not all fuel-switching use cases involve switching between utility energy supplies. For example, implementing some energy-conservation measures can lead to increased utility sales and decreased sales of non-utility delivered propane and fuel oil. Please describe:

a. **Use cases and technologies exemplifying potential energy-saving measures that you believe should be addressed in State energy policies (within CIP or otherwise);**
All of the same measures, benefits, and considerations regarding natural gas also apply to propane and fuel oil with one notable difference. It is far more cost effective for customers to replace propane and fuel oil with electric due to the higher cost of these fuels. This makes them a prime target for immediate replacement since it advances Minnesota's environmental goals while also providing financial benefits for customers.

b. **Noteworthy factors and considerations involving these use cases and technologies; and**
It is worth noting that propane and fuel oil customers are currently unlikely to have access to CIP programs for their heating equipment.

c. **Uncertainties and unintended consequences related to these use cases or technologies that should be addressed in the policy process.**
Some customers could be stranded with old equipment that they can't switch to electric, and it may drive up the price of delivered fuels.

Question #3: Criteria for allowing fuel-switching in CIP may be influenced by requirements and factors affecting specific high-impact use cases. Please comment on which fuel-switching

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use cases you believe will have the greatest beneficial impact on the State of Minnesota, and therefore should merit the highest priority in policymaking.

Minnesota Power feels that the greatest beneficial impact will come from converting propane and fuel oil heating equipment to electric due to the cost effectiveness for customers. For residential and commercial customers this would primarily include space heating and water heating applications. Industrial customers may have opportunities for significant energy and cost savings by converting to an alternative electric process in addition to space and water heating.

Minnesota Power appreciates the opportunity to provide comments on this topic and looks forward to continued engagement with the Department of Commerce CIP Fuel Switching meetings.

Sincerely,

Katelyn Frye

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