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Xcel Energy Data Request No. 2-8
Docket No.: EL21-014
Response To: South Dakota Public Utilities Commission
Requestor: Brittany Mehlhaff
Date Received: September 3, 2021

Question:

Regarding the Residential Heat Pump Water Heaters program:

- a) Explain the impact increasing the rebate from \$300 to \$400 has on the cost effectiveness of the program (TRC).
- b) Explain the impact increasing the maximum tank size from 50 gallons to 80 gallons has on the cost effectiveness of the program (TRC).
- c) Refer to Docket EL19-019, Response to Staff Data Request 1-14. Provide an updated payback calculation for a customer purchasing a heat pump water heater with and without a rebate. Provide a separate calculation for each type of eligible heat pump water heater listed on page 10 of the application and varying tank size.
- d) Explain why it is appropriate to have one rebate amount for all eligible water heaters instead of having different rebate amounts depending on type and/or tank size.

Response:

a) The high up-front cost of the technology has limited participation within the Heat Pump Water Heater program. Increasing the rebate is an effort to increase customer demand and product availability within the market. Because the rebate amount does not impact the TRC, this change does not affect cost-effectiveness as measured by the TRC.

b) Expanding to the 80-gallon tank size allows the Company to broaden the reach of heat pump water heaters to high first hour draw homes and compete with gas water heaters. A heat pump water heater with a 50-gallon tank has a lower first hour draw capacity compared to the same size electric resistance water heater. The previous 50-gallon tank size limit was due to federal standard limits on electric resistance water heaters and the method used to scale the hot water use of the home to the size of the water heater. Expanding the eligible models to include larger tank sizes of up to 80-gallons will allow customers to install a heat pump water heater that meets the needs

of their home. By providing more options (that are also more competitive in the market) we anticipate additional participation within the product keeping the offering cost-effective.

c) Please see Attachment A to this data response.

d) As the cost of the proposed Heat Pump Water Heater increases with tank size, the baseline cost would also need to increase to be comparable in capacity. Therefore, the incremental cost is deemed to be about the same across the range of proposed sizes. For this reason, a single rebate is used.

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