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Xcel Energy Data Request No. 3-3
Docket No.: EL21-014
Response To: South Dakota Public Utilities Commission
Requestor: Brittany Mehlhaff
Date Received: October 28, 2021

Question:

Refer to the Company's response to Staff Data Request 2-8.

- a) Does changing the rebate amount have any indirect impacts on the TRC due to influencing the number of participants and resulting energy and demand savings? Explain.
- b) What impact does increasing the rebate from \$300 to \$400 have on the other cost effectiveness tests besides the TRC? Also provide the impact to the budget.
- c) How does the Company evaluate a reasonable customer pay-back period when determining rebate amounts?
- d) What are the average capital costs of competing water heater technologies available to customers? How do the prices of these other options compare to the net capital cost to the customer of the heat pump water heater after the \$300 or \$400 rebate is applied?
- e) Are there any other factors that may have impacted participation in the Heat Pump Water Heaters program in its first year such as the pandemic or people not knowing the rebate was available? Has Xcel seen participation increase at all so far in 2021?

Response:

- a) A change in the rebate amount can have an impact on the TRC as it can lead to an increase in participation. If participation increases (along with energy savings and other benefits), without a comparable increase in administrative costs, the TRC would be improved.
- b) Increasing the rebate would cause the Participant test benefit/cost ratio to increase. The TRC and Societal benefit/cost ratio would increase as well since the increased participation would lead to an increase in the generation, transmission & distribution, and marginal energy avoided revenue requirements (ARR). From the Utility perspective, increasing the rebate results in a lower benefit/cost ratio, but an increase in the net benefits since an increase in participation would lead to an increase in the ARR.

Please note that, while reviewing the TRC results for Data Request 3-3 we discovered a difference between the number of participants used to calculate the budget and the number of participants used to calculate the energy savings and avoided revenue requirements in the cost-benefit results. The budget calculation incorrectly assumed 25 participants but should have matched the energy savings calculation which assumed 21 participants. Lowering the participant count in the budget calculation to 21 aligns the budget calculation and energy savings calculation, resulting in a reduction to the budget by \$1,600 with no impact on the TRC benefit/cost ratio. Please see Attachment A for updated portfolio Executive Summary Table and Attachment B for an updated cost-effectiveness analysis of the Heat Pump Water Heater program. We provide a snapshot of these changes below.

Table 1: Budget Calculation Corrected

| | Original Filing | Corrected Filing |
|---|------------------------|-------------------------|
| Participation Assumption (Budget Calculation) | 25 | 21 |
| Budget | \$11,850 | \$10,250 |
| Participation Assumption (Energy Savings Calculation) | 21 | 21 |
| Generator kW | 8 | 8 |
| Generator kWh | 62,033 | 62,033 |
| Total Resource Cost (TRC) benefit/cost ratio | 1.0 | 1.0 |

- c) The Company evaluates the customer pay-back so it is not less than one year and cannot extend past the life of the measure.
- d) The average cost of the baseline electric resistance water heater is \$959. The baseline cost of a gas storage water heater is comparable. The average cost for a heat pump water heater after the \$400 rebate is \$1,343. The payback period of the net total average cost would be approximately five to six years and would vary based on the homes source of heating and cooling as well as the actual daily usage.
- e) Limited product availability, lack of qualified contractors, and limited customer knowledge of the heat pump technology all impact participation in the Heat Pump Water Heater program. The Company proactively engages manufacturers on program design and the feedback we have received are that programmatic changes were needed; specifically, a higher rebate to support their efforts for increasing product availability in the territory. Additionally, they noted that increasing the rebate while focusing on program/technology awareness will increase customer demand and qualified contractors. The Company has not seen an increase in participation so far in 2021.

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