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Xcel Energy Information Request No. 1-14  
Docket No.: EL20-015  
Response To: South Dakota Public Utilities Commission  
Requestor: South Dakota Public Utilities Commission Staff  
Date Received: September 9, 2020

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Question:

Explain how participant costs were determined for the 2019 and 2021 benefit/cost models, including any calculations used.

Response:

Participant costs in the 2019 and 2021 benefit/cost models include both Incremental Capital Costs and Incremental Operation & Maintenance Costs (“Incremental O&M”). Incremental Capital Costs are the difference in cost between energy efficient equipment or materials and equipment or materials meeting the minimum baseline level of efficiency.

$$\text{Participant Incremental Capital Cost} = P - B$$

Where:

- P = Projected participant cost for purchase/installation of efficient option
- B = Projected purchase/installation cost for an option of baseline efficiency

For the 2021 Plan, the equation above is used to create deemed values used in the 2021 benefit/cost models for all participants. Projected costs for variables P and B are derived from market indicators, product/technology research, and data from participants in current Xcel Energy efficiency programs.

For the 2019 benefit/cost models, the Incremental Capital Costs that were provided in the originally filed 2019 Plan were used. These costs were created using the same general method described for the 2021 Plan. The only exception in the 2019 benefit/cost analysis was the Home Lighting program. Due to continued changes in the residential LED market, the Incremental Capital Cost of \$2.81 per bulb in the 2019 Modified Plan (filed in fall 2018) was no longer a reasonable approximation of the incremental cost paid by participating customers in 2019. Instead, a more current

value of \$1.34 per bulb was calculated using 2019 LED purchase price data from participants in our Residential Lighting programs. This value was used as updated deemed value for participant costs in the 2019 benefit/cost analysis for this program.

Incremental O&M costs are the changes in operations and maintenance expenses as a result of the energy efficient improvement. They are calculated based upon projected energy savings impacts or other available data. For 2019, O&M costs were assumed to be \$0.00 for all programs except the Lighting Efficiency program. Each measure within the Lighting Efficiency program also includes a deemed assumption of the added natural gas required to heat a conditioned space due to the energy-efficient lighting equipment giving off less heat. The value of this added natural gas consumption is tracked as Incremental O&M Costs. For the 2021 Plan, in addition to Lighting Efficiency, the Residential Demand Response and Residential Water Heating programs also included measures with Incremental O&M costs or savings because of assumed changes in natural gas heating requirements associated with these measures (smart thermostats in Residential Demand Response and heat pump water heaters in Residential Water Heating).

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