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Xcel Energy

Data Request No. 3-1

Docket No.: EL19-019

Response To: South Dakota Public Utilities Commission

Requestor: Eric Paulson

Date Received: October 25, 2019

Question:

Provide the approximate payback period on a heat pump water heater with a rebate amount of \$300.

Response:

Payback periods for the heat pump water heater with rebate of \$300 differ depending upon the equipment being replaced. The \$300 is approximately 50 percent of incremental cost; we further note, that incremental cost does not include installation but only the equipment itself and therefore may not be enough to move all customers to action. We provide specific details per measure below.

Water Heating Measure	Rebate	Incremental Cost	Assumed Energy Cost (\$/kWh)	Annual Customer kWh Savings (kWh/yr)	Increment'l Cost Payback Period w/ Rebate (yrs)
Medium Draw Heat Pump Water Heater - Refrigerant Based Cooling & Electric Resistance Heat (30-50 Gallon)	\$ 300	\$ 611	\$ 0.0855	2,683	1.36
Medium Draw Heat Pump Water Heater - Refrigerant Based Cooling & ASHP Heat (30-50 Gallon)	\$ 300	\$ 611	\$ 0.0855	3,559	1.02
Medium Draw Heat Pump Water Heater - Refrigerant Based Cooling & Natural Gas Heat (30-50 Gallon)	\$ 300	\$ 611	\$ 0.0855	4,283	0.85
Medium Draw Heat Pump Water Heater - Non-Refrigerant Based Cooling & Electric Resistance Heat (30-50 Gallon)	\$ 300	\$ 611	\$ 0.0855	2,594	1.40
Medium Draw Heat Pump Water Heater - Non-Refrigerant Based Cooling & ASHP Heat (30-50 Gallon)	\$ 300	\$ 611	\$ 0.0855	3,498	1.04
Medium Draw Heat Pump Water Heater - Non-Refrigerant Based Cooling & Natural Gas Heat (30-50 Gallon)	\$ 300	\$ 611	\$ 0.0855	4,218	0.86

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