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Xcel Energy Data Request No. 1-4  
Docket No.: EL22-010  
Response To: South Dakota Public Utilities Commission Staff  
Requestor: Eric Paulson  
Date Received: September 14, 2022

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Question:

Provide the avoided energy, avoided generation, and avoided transmission and distribution cost schedules used in the 2021 and 2023 benefit/cost models.

Response:

The South Dakota benefit/cost model assumptions are based off the Minnesota Conservation Improvement Triennial plan. At the time of the filing of the Company’s 2021 South Dakota Plan, a 2020 Extension to the 2017-2019 Minnesota plan was filed, which produced an update to marginal energy costs but retained the same Capacity and transmission and distribution (T&D) cost assumptions.

We note the following sources of information for the 2021 benefit/cost models:

- **Capacity Cost (\$/kW-Year):** Combustion Turbine Cost Modeling in 2015 IRP update - Includes 2017 capital (\$56.29) and O&M (\$2.75) costs escalated using a 2.24 percent rate, adjusted for reserve margin (1.75%), and with a fixed gas charge (\$0.00) added.
- **T&D Cost (\$/kW-Year):** 2013 value carried over from previous triennial that was consistent with CO and NM that loosely ties back to a 2004 Nexant study - 2010 value of 31.17 escalated 3 years at prior escalation of 2.36 percent.
- **Marginal Energy System Load Weighted Average (\$/kWh):** Based off current assumptions from Resource Planning – September 2019.

For the 2021 benefit/cost models, please see the table below for the avoided energy, avoided generation, and avoided transmission and distribution cost schedules.

### 2020 MN/SD Avoided Cost Streams – Nominal Dollars

Year	Capacity Cost (\$/kW-Year)	T&D Cost (\$/kW-Year)	Marginal Energy System Load Weighted Average (\$/kWh)
2021	\$65.63	\$39.77	\$0.01793
2022	\$67.09	\$40.71	\$0.01956
2023	\$68.60	\$41.67	\$0.02153
2024	\$70.13	\$42.65	\$0.02496
2025	\$71.70	\$43.66	\$0.02592
2026	\$73.30	\$44.69	\$0.02917
2027	\$74.94	\$45.74	\$0.03081
2028	\$76.62	\$46.82	\$0.03245
2029	\$78.33	\$47.93	\$0.03449
2030	\$80.09	\$49.06	\$0.03622
2031	\$81.88	\$50.22	\$0.03918
2032	\$83.71	\$51.40	\$0.04184
2033	\$85.58	\$52.62	\$0.04509
2034	\$87.50	\$53.86	\$0.04849
2035	\$89.46	\$55.13	\$0.05234
2036	\$91.46	\$56.43	\$0.05655
2037	\$93.50	\$57.76	\$0.06125
2038	\$95.59	\$59.12	\$0.06647
2039	\$97.73	\$60.51	\$0.07229
2040	\$99.92	\$61.95	\$0.07881

As noted above, the South Dakota benefit/cost model assumptions are based off the Minnesota Conservation Improvement Triennial plan. A new Plan was filed on July 1, 2020. The assumptions for 2023 align with the Minnesota 2021-2023 Triennial Plan.

We note the following sources of information for the 2022 benefit/cost models:

- **Capacity Cost (\$/kW-Year):** Combustion Turbine Cost Modeling in 2019 Minnesota IRP update - Includes capital (\$46.01) and O&M (\$3.86) escalated using a 2 percent rate, adjusted for reserve margin (1.75%), and with a fixed gas charge (\$0.00) added.
- **T&D Cost (\$/kW-Year):** value is based on a 2017 T&D study with a 2021 value of \$10.59 and escalation of 2.36 percent.
- **Marginal Energy System Load Weighted Average (\$/kWh):** Based off September 2019 assumptions from Resource Planning.

For the 2021 benefit/cost models, please see the table below for the avoided energy, avoided generation, and avoided transmission and distribution cost schedules.

**2021-2023 MN/SD Avoided Cost Streams – Nominal Dollars**

Year	Capacity Cost (\$/kW-Year)	T&D Cost (\$/kW-Year)	Marginal Energy System Load Weighted Average (\$/kWh)
2023	\$62.08	\$10.84	\$0.01582
2024	\$63.32	\$11.10	\$0.01858
2025	\$64.59	\$11.36	\$0.02299
2026	\$65.88	\$11.63	\$0.02586
2027	\$67.20	\$11.90	\$0.02761
2028	\$68.54	\$12.18	\$0.02722
2029	\$69.92	\$12.47	\$0.02787
2030	\$71.31	\$12.76	\$0.02849
2031	\$72.74	\$13.07	\$0.02809
2032	\$74.19	\$13.37	\$0.03029
2033	\$75.68	\$13.69	\$0.03033
2034	\$77.19	\$14.01	\$0.03220
2035	\$78.74	\$14.34	\$0.03464
2036	\$80.31	\$14.68	\$0.03707
2037	\$81.91	\$15.03	\$0.03950
2038	\$83.55	\$15.38	\$0.04194
2039	\$85.23	\$15.75	\$0.04437
2040	\$86.93	\$16.13	\$0.04680
2041	\$88.67	\$16.52	\$0.04923
2042	\$90.44	\$16.91	\$0.05166

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 Date: September 28, 2022