

TO: COMMISSIONERS AND ADVISORS
FROM: ERIC PAULSON AND LOGAN SCHAEFBAUER (STAFF)
SUBJECT: EL24-016 STAFF MEMORANDUM
DATE: NOVEMBER 14, 2024

STAFF MEMORANDUM

1.0 OVERVIEW

On May 1, 2024, Northern States Power Company, dba Xcel Energy (Xcel or Company), filed a Petition with the South Dakota Public Utilities Commission (Commission) requesting approval of the Company's 2023 Demand Side Management (DSM) Report, proposed DSM plan for 2025, revised DSM Cost Adjustment Factor for 2025 of \$0.000453/kWh, and associated tariff sheets. In response to Staff data request 1-3, filed on August 23 and 27, 2024, Xcel revised the proposed DSM Cost Adjustment Factor for 2025 to \$0.000457/kWh.

This memo discusses Xcel's 2023 DSM plan performance and the Company's proposed DSM Plan for 2025. Staff's recommendation will be discussed and is based on the information provided by the Company in the Petition and subsequent data requests.

2.0 DISCUSSION

2.1 Report on 2023 DSM Plan Activities

In 2023, Xcel's DSM Plan was over budget, spending \$841,563 compared to the Commission approved budget of \$832,303.¹ Table 1 shows the 2023 approved budgets and the 2022 actual spending for each program. The actual costs for residential programs were 171% of the approved budget, the business programs were 37% of the approved budget, and the planning segment was 123% of the approved budget. In total, the Company spent 101% compared to the approved budget.

¹ 2023 Budget approved in Docket EL22-010

	Budget	Actual	% of Budget
Residential Home Lighting	\$ 131,615	\$ 168,925	128%
Residential Demand Response	\$ 230,000	\$ 478,689	208%
Consumer Education	\$ 21,165	\$ 21,363	101%
Water Heating	\$ 10,900	\$ 2,951	27%
Total Residential	\$ 393,680	\$ 671,928	171%
Lighting Efficiency	\$ 393,373	\$ 138,776	35%
Business Saver's Switch	\$ 25,250	\$ 11,823	47%
Peak and Energy Control	\$ 10,000	\$ 6,701	67%
Total Business	\$ 428,623	\$ 157,300	37%
Planning Segment	\$ 10,000	\$ 12,335	123%
All Programs	\$ 832,303	\$ 841,563	101%

Table 2 provides the energy savings, demand savings, and participation results from the 2023 DSM plan as compared to the approved budget. Overall Xcel's DSM plan experienced less energy savings, more demand savings, and less participation than forecasted. Increased demand savings was mainly due to the significantly higher savings that occurred in the Residential Demand Response program.

	Energy Savings (Annual kWh)			Demand Savings (kW)			Participation		
	Budget	Actual	% of Budget	Budget	Actual	% of Budget	Budget	Actual	% of Budget
Residential Home Lighting	5,281,610	5,196,773	98%	714	701	98%	8,066	7,041	87%
Residential Demand Response	59,022	35,872	61%	835	1,632	196%	1,400	1,669	119%
Consumer Education	-	-	-	-	-	-	52,579	24,675	47%
Water Heating	61,901	8,148	13%	8	1	14%	25	3	12%
Total Residential	5,402,533	5,240,793	97%	1,557	2,334	150%	62,070	33,388	54%
Lighting Efficiency	6,482,533	1,685,626	26%	784	311	40%	477	51	11%
Business Saver's Switch	78	3	4%	57	2	3%	20	3	15%
Peak and Energy Control	448	0	0%	174	0	0%	1	0	0%
Total Business	6,483,059	1,685,629	26%	1,015	313	31%	498	54	11%
Planning Segment	-	-	-	-	-	-	-	-	-
All Programs	11,885,592	6,926,422	58%	2,572	2,647	103%	62,568	33,442	53%

The Residential Home Lighting program experienced slightly lower than expected participation during the year, resulting in Xcel coming up short in the energy savings, demand savings, and participation goals but still coming in over budget. Table 3 provides the average residential LED rebates proposed in the Company's previous DSM filing compared with the actual average rebates offered in 2023.

Measure Type	Proposed	Actual	Difference
A-line	\$ 0.90	\$ 1.36	\$ 0.46
Specialty	\$ 1.30	\$ 1.49	\$ 0.19
TLED	\$ 2.00	\$ 2.00	\$ -

The Residential Heat Pump Water Heater’s program spending was significantly less than the approved budget given there was only three participants, up from two participants in the previous year. For the 2022 plan Xcel received approval to increase the incentive from \$300 to \$400 in an effort to increase participation. This \$400 rebate continued into 2023. Xcel plans to utilize low-cost marketing tactics, partnerships with manufacturers, distributors, retailers, and trade partner outreach to increase awareness of the program.

Staff recommends to revise the budget for the Heat Pump Water Heating program to \$0 at this time and discontinue the program due to continual underspend, lack of participation, and the TRC score continually being under 1.0. Xcel and Staff had hoped increasing the rebate to \$400 would increase participation closer to the goal but that has not happened and the program continues to not be cost effective. As noted in DR1-8, increased spend with this program has outpaced and more than offset the savings that has been achieved with the few participants in the program. Table 1 below, shows the drop in TRC scores over the first 4 years of the Heat Pump program even with a slight increase in participation.

Table 1		
Year	Participation	TRC
2023	3	0.74
2022	2	0.98
2021	1	1.70
2020	1	1.97

As noted in response to DR1-5 in EL23-013, last year’s DSM docket, prior to 2022 administrative costs were not assigned to Heat Pumps therefore not included in the TRC calculation. Since administrative costs started being included in 2022 the program has declined below 0. Even without administrative costs in 2021 the TRC score declined from the previous year. Removal of this program lowers the total DSM portfolio budget by \$8,300 for 2025.

The Residential Demand Response program experienced higher than expected participation during the year, resulting in Xcel coming up short in the energy savings, significantly exceeding demand savings, and exceeding participation goals while coming in over double the proposed budget. As noted in the petition on page 10, the company installed more than 1,300 new Saver’s Switches and enrolled over 300 thermostats into the AC Rewards programs.

Looking at the Business programs, the Business Saver’s Switch program had low energy savings, demand savings, and participation compared to projected. This program also came in under the spend budget.

The Peak and Energy Control program had no participation leading to no energy or demand savings. As noted in the petition on page 6, costs for the Peak and Energy control program were for administrative and application maintenance costs for the notification test and MISO test. This program also came in under the spend budget.

The TRC for both of these programs were significantly the 1.0 number used as a benchmark. Staff is not concerned at this time given the low participation but should this trend continue into next year these programs may need a further look into how to raise these TRC scores or if the programs as a whole need further review.

The Business Lighting Efficiency Program also came in under budget for participation, energy savings, and demand savings. This program also came in under the spend budget. As noted in the Petition, various changes in the offerings due to cost effectiveness and timing of custom projects all played a part in lower participation in the plan year.

Overall, Xcel’s DSM Plan was cost-effective for the 2023 program year. Most programs had Total Resource Cost (TRC) test results greater than 1.0. The Residential Water Heating Program, the Business Saver’s Switch Program, and Business Peak and Energy Control Program all had TRC results below 1.0. Table 4 provides a breakdown of the benefit/cost test results that occurred in 2023.

Table 4. 2023 Benefit/Cost Test Results				
	TRC	Utility	Participant	RIM
Residential Home Lighting	6.64	10.17	57.22	0.27
Residential Demand Response	2.17	2.08	24.48	1.93
Consumer Education	-	-	-	-
Water Heating	0.74	0.97	4.57	0.22
Total Residential	3.68	4.04	55.05	0.40
Lighting Efficiency	1.09	4.76	2.98	0.38
Business Saver's Switch	0.11	0.11	INF	0.11
Peak and Energy Control	0.00	0.00	-	0.00
Total Business	1.06	4.21	2.98	0.38
Planning Segment	-	-	-	-
All Programs	2.40	4.01	11.66	0.39

In its Petition, Xcel requests the Commission approve a performance incentive of \$249,691 for 2023. The incentive is a fixed percentage (30%) of actual program expenses and capped at 30% of the approved budget. The purpose of the incentive is to cover lost margins Xcel incurs as a result of DSM Plan implementation. Staff reviewed Xcel’s 2023 DSM tracker account and 2023 DSM tracker account adjustment and determined the incentive was properly accounted for.

2.2 DSM Plan for 2025

2.2.1 Proposed Program Changes for 2025

For the Business Lighting Efficiency, Xcel proposes to add the following new measures to the portfolio in 2025: LED to LED (Type B tube), Horticulture LED lighting, Luminaire level lighting controls, 3-foot LED linear tubes, new exterior LED lamps HID base (mogul & E26), and new exterior downlights.

Staff recommends the Commission remove the Residential Heat Pump Water Heater Program starting in 2025.

Xcel proposes budget changes to all of the programs in its DSM Plan portfolio with the exception of Consumer Education.

2.2.2 Proposed Budget for 2025

The proposed budget for 2025, as proposed by Xcel is provided in Table 5 below. In total, Xcel proposes a decrease of \$46,678 for its 2025 DSM Plan compared to 2024, which amounts to approximately a 5% decrease, with a majority of the decrease coming in the Business Lighting Efficiency program. Residential Home Lighting, Water Heating, and Peak and Energy Control budgets are less while the Residential Demand Response and Business Saver's Switch budgets are increasing. Consumer Education is proposed to not change. Based on forecasted participation and associated energy savings, Xcel estimates that all programs will be cost-effective in 2025, with an estimated overall TRC ratio of 2.75. Staff has concerns with Xcel's proposed budget for 2025 and will discuss the one change recommended below.

Table 5. 2025 DSM Plan				
	2024	2025	YOY Change	TRC Ratio
Residential Home Lighting	\$ 99,539	\$ 85,999	-14%	3.04
Residential Demand Response	\$ 281,685	\$ 404,250	44%	2.48
Consumer Education	\$ 22,000	\$ 22,000	0%	-
Water Heating	\$ 11,000	\$ 8,300	-25%	1.38
Total Residential	\$ 414,224	\$ 520,549	26%	2.55
Lighting Efficiency	\$ 389,418	\$ 235,965	-39%	2.89
Business Saver's Switch	\$ 26,150	\$ 26,500	1%	2.81
Peak and Energy Control	\$ 10,350	\$ 10,000	-3%	9.34
Total Business	\$ 425,918	\$ 272,465	-36%	2.96
Planning Segment	\$ 10,350	\$ 10,800	4%	-
All Programs	\$ 850,492	\$ 803,814	-5%	2.75

Staff recommends all aspects of Xcel’s proposal be the same as Xcel proposes with the exception of the Water Heating budget. Staff recommends that budget be reduced to \$0 and the program ended. Revised Table 5 below shows the proposed budget and TRC without the Water Heating Program. Overall the TRC increases from 2.75 to 2.76. This change results in a proposed decrease of \$54,978 for its 2025 DSM Plan compared to 2024, which amounts to approximately a 6% decrease.

Revised Table 5. 2025 DSM Plan				
	2024	2025	YOY Change	TRC Ratio
Residential Home Lighting	\$ 99,539	\$ 85,999	-14%	3.04
Residential Demand Response	\$ 281,685	\$ 404,250	44%	2.48
Consumer Education	\$ 22,000	\$ 22,000	0%	-
Water Heating	\$ 11,000	\$ -	-100%	-
Total Residential	\$ 414,224	\$ 512,249	24%	2.58
Lighting Efficiency	\$ 389,418	\$ 235,965	-39%	2.89
Business Saver's Switch	\$ 26,150	\$ 26,500	1%	2.81
Peak and Energy Control	\$ 10,350	\$ 10,000	-3%	9.34
Total Business	\$ 425,918	\$ 272,465	-36%	2.96
Planning Segment	\$ 10,350	\$ 10,800	4%	-
All Programs	\$ 850,492	\$ 795,514	-6%	2.76

In addition, the fixed percentage incentive of 30 percent of actual spending with a cap set at 30 percent of the approved budget is proposed to continue in 2025. The incentive is \$241,144 based on the Xcel proposed budget and \$238,654 based on the Staff Revised proposed budget.

2.2.3 DSM Cost Adjustment Factor for 2024

In its original filing, Xcel proposed to increase the DSM Cost Adjustment Factor to \$0.000453/kWh for 2025 from \$0.000487/kWh in 2024. In response to Staff Data Request 1-3, Xcel updated its tracker account to factor in actual expenses and revenues recorded between the initial filing and Staff’s data request, Xcel identified that the rate should be revised to \$0.000457/kWh. Based on Staff’s recommended changes, the rate should be revised to \$0.000452/kWh. Table 6 provides the estimated bill impacts of Xcel’s proposed DSM cost adjustment factor for 2025. Revised Table 6 provides the estimated bill impacts of Xcel’s proposed DSM cost adjustment factor for 2025 with Staff’s recommended changes.

Table 6: Bill Impacts of 2025 DSM Cost Adjustment Factor

Usage (kWh)	Prior Rates				New Rates				Amount of Bill Increase	Percent Increase
	Other Rates	Prior DSM Factor	Prior DSM	Prior Bill	Other Rates	New DSM Factor	New DSM	New Bill		
400	\$57.02	\$0.000487	\$0.19	\$57.21	\$57.02	\$0.000457	\$0.18	\$57.20	(0.01)	-0.02%
500	\$69.19	\$0.000487	\$0.24	\$69.43	\$69.19	\$0.000457	\$0.23	\$69.42	(0.01)	-0.01%
600	\$81.37	\$0.000487	\$0.29	\$81.66	\$81.37	\$0.000457	\$0.27	\$81.64	(0.02)	-0.02%
750	\$99.64	\$0.000487	\$0.37	\$100.01	\$99.64	\$0.000457	\$0.34	\$99.98	(0.03)	-0.03%
1000	\$130.09	\$0.000487	\$0.49	\$130.58	\$130.09	\$0.000457	\$0.46	\$130.55	(0.03)	-0.02%
2000	\$251.88	\$0.000487	\$0.97	\$252.85	\$251.88	\$0.000457	\$0.91	\$252.79	(0.06)	-0.02%

Revised Table 6: Bill Impacts of 2025 DSM Cost Adjustment Factor

Usage (kWh)	Prior Rates				New Rates				Amount of Bill Increase	Percent Increase
	Other Rates	Prior DSM Factor	Prior DSM	Prior Bill	Other Rates	New DSM Factor	New DSM	New Bill		
400	\$57.02	\$0.000487	\$0.19	\$57.21	\$57.02	\$0.000452	\$0.18	\$57.20	(0.01)	-0.02%
500	\$69.19	\$0.000487	\$0.24	\$69.43	\$69.19	\$0.000452	\$0.23	\$69.42	(0.01)	-0.01%
600	\$81.37	\$0.000487	\$0.29	\$81.66	\$81.37	\$0.000452	\$0.27	\$81.64	(0.02)	-0.02%
750	\$99.64	\$0.000487	\$0.37	\$100.01	\$99.64	\$0.000452	\$0.34	\$99.98	(0.03)	-0.03%
1000	\$130.09	\$0.000487	\$0.49	\$130.58	\$130.09	\$0.000452	\$0.45	\$130.54	(0.04)	-0.03%
2000	\$251.88	\$0.000487	\$0.97	\$252.85	\$251.88	\$0.000452	\$0.90	\$252.78	(0.07)	-0.03%

3.0 LED Light Bulbs

In docket EL23-013, Commissioner Fiegen asked Xcel to provide an evaluation that customers wouldn't buy LED light bulbs without the rebate. In response to DR1-24, Xcel provided its most recent Colorado Home Lighting and Recycling Product evaluation which was from 2021. Xcel specifically directed Staff to sections 2.3.1 and 2.3.2.

One page in particular Staff wants to point out is page 6 of the attachment to DR1-24. The chart on this page shows that the trend for LED adoption significantly trended upwards from 2015 to 2020 and at the end of 2020 was 71%. Also worth noting on this page is the Sales Data Analysis section. This paragraph states that in areas within the Xcel Colorado territory, LED market share is 79.2% and outside of the territory without a program it drops to an estimated 67.6%. And in the next section over the report states that nationwide the areas without an LED Program have a LED market share of 62.9%. So clearly, based on this report, specifically noted in the conclusions on page 8, in areas with a program there is a higher adoption rate of LED lights. The question then remains, at what point is the LED market shares percentage high enough to not warrant a rebate any longer? Staff does not have an answer for this as it would ultimately be a policy decision on what that threshold would be.

Xcel primarily provides their LED rebates as directly to the consumer without the need for forms and filings to get the rebates. Xcel's retail partners, listed in response to DR1-25, provide the point-of-sale rebate for Xcel. Xcel does not have a separate estimate for how many non-Xcel or Xcel customers are able to take advantage of this LED. Xcel only has a total number of rebates paid.

4.0 STAFF RECOMMENDATION

For Docket EL24-016, Staff makes the following recommendations:

- 1) The Commission approve Xcel's 2023 DSM tracker account;
- 2) The Commission approve the performance incentive earned in 2023;
- 3) The Commission approve Xcel's proposed DSM Plan for 2025 with the exception that the water heating program be removed; and
- 4) The Commission approve the revised 2025 DSM Cost Adjustment Factor, excluding water heating, of \$0.000452/kWh, with an effective date of January 1, 2025, and the associated tariff sheet.