
APPENDIX L: COST IMPACT ANALYSIS BY CUSTOMER CLASS

A. Introduction

Under Minn. Stat. § 216B.1691, subd. 2e., electric utilities must submit to the Minnesota Public Utilities Commission (“Commission”) a report containing an estimation of the rate impact of their resource plans. As part of the Commission’s review of a utility’s resource plan, it must evaluate the plan’s ability to “keep the customers’ bills and the utility’s rates as low as practicable, given regulatory and other constraints.”¹ In 2011, the Commission ordered Minnesota Power (or the “Company”) to include a “cost impact analysis by customer class” in its next resource plan.² The Company complied with this order point by including the cost impact analysis by customer class in its subsequent integrated resource plans. This Appendix is included to provide that information for this 2025-2039 Integrated Resource Plan (“2025 IRP”). For purposes of this analysis, the terms “cost impact” and “rate impact” are assumed to have the same meaning. It should be noted that these are estimated impacts and thus may not correspond with actual revenue requirements or rates that the Commission sets for various rate classes in the future. In addition, numerous assumptions have been made in both the calculation methodology and the input variables, and these assumptions naturally cause imprecision in the estimates. Long-term resource planning is inherently inexact and therefore causes additional uncertainty in the resulting rate impacts. Thus, the numbers estimated here should be used as guideposts on rate impact rather than viewed or used as determinative calculations on customer power costs.

This Appendix provides detail on the estimated rate impacts of the Company’s power supply plan for the next five years, which includes actions from prior approved IRPs and the recommended plan in the 2025 IRP,³ referred to in this Appendix as the “5 Year Power Supply Plan.” Specifically, this Appendix discusses the following items:

- Calculation of Plan Power Supply Costs
- Calculation of Base Rates
- Calculation of Rate Impacts
- Minimizing Customer Rate Impacts

B. Calculation of Plan Power Supply Costs

The estimated rate impacts are based on the revenue requirement outputs from the 2025 IRP long-term planning model. These outputs are referred to as the “IRP Power Supply Costs.” The first step in estimating the rate impacts by customer class is to calculate the annual incremental power supply cost of the 5 Year Power Supply Plan for the years 2025 to 2029, compared to the 2025 power supply costs.⁴ The 2025 power supply costs are subtracted from the annual power supply cost of the 5 Year Power Supply Plan for 2025 to 2029 to determine the incremental power supply cost relative to 2025. The estimated rate impacts by customer class are therefore calculated relative to the 2025 Base Rates, which are discussed in the next section.

The incremental 5 Year Power Supply Plan power supply costs are separated into two categories: power supply costs and solar costs. The power supply costs are allocated to

¹ Minn. R. 7843.0500, subp. 3.

² *In the Matter of Minnesota Power’s 2010-2024 Integrated Resource Plan*, Docket E-015/RP-09-1088, Order Accepting Resource Plan and Requiring Compliance Filings (May 6, 2011).

³ The 5 Year Power Supply Plan does not include the NTEC project for estimating cost impacts.

⁴ The 2025 Plan is described in Appendix K: Detailed Analysis Section.

jurisdiction and customer class as described below. The solar costs are divided by the projected non-exempt energy usage to obtain the solar cost rate in accordance with state statute.⁵

After the incremental power supply costs of the 5 Year Power Supply Plan for 2025 to 2029 are determined, these costs are allocated to the Minnesota jurisdiction and to customer classes based on projected revenue requirement allocators for 2025 to 2029. The allocators are based on the total revenue apportionment to the Minnesota jurisdiction and to each retail customer class in Minnesota Power's last retail rate case.⁶ The annual allocators are projected assuming perfect annual rate making that follows the fully allocated class cost-of-service study. In other words, the 2024 test year rate case relationships between jurisdictional and class revenue apportionment and jurisdictional and class energy usage are assumed to remain constant, thus allowing those relationships (ratios) to be used to estimate the allocators using the forecasted energy usage by jurisdiction and customer class from Minnesota Power's 2024 Annual Electric Utility Forecast Report (see Appendix A). The 5 Year Power Supply Plan incremental power supply costs are then divided by the projected energy usage by customer class to obtain the 5 Year Power Supply Plan incremental power supply cost rates by customer class.

The 5 Year Power Supply Plan incremental power supply cost rates and the solar cost rates are then added by customer class to obtain the total adjusted 5 Year Power Supply Plan incremental power supply cost rates by customer class.

C. Calculation of Base Rates

As mentioned above, the estimated rate impacts by customer class are calculated relative to Minnesota Power's 2025 Base Rates. The starting point to estimate the 2025 Base Rates is the 2024 test year rate case final approved rate design, sales, and revenue schedule from Minnesota Power's 2024 test year rate case.⁷ The estimated average rates customers will pay in 2025 for Minnesota Power's Renewable Resources Rider, Transmission Cost Recovery Rider, and the Capacity Revenue and Expense Adjustment are added to the 2024 test year base rates. Lastly, an estimated 2025 Fuel and Purchased Energy ("FPE") Adjustment and an estimated 2025 average Conservation Program Adjustment ("CPA") rate are added to arrive at the estimated 2025 Base Rates.⁸ The 2025 FPE Adjustment and CPA rate are estimated by comparing the 2024 rates in Minnesota Power's last rate case to the 2025 budgeted costs expected to be incurred through the FPE and in the new CPA rate expected to be implemented in 2025.

D. Calculation of Rate Impacts

The 5 Year Power Supply Plan incremental cost rates by customer class from 2025 to 2029 are divided by the estimated 2025 Base Rates to determine the estimated percent increase in rates. The 5 Year Power Supply Plan incremental cost rates by customer class from 2025 to 2029 are then multiplied by the projected average monthly billing units by customer class to estimate the average dollar per month increase by customer class. As shown in Table 1, the 5 Year Power

⁵ Pursuant to Minn. Stat. § 216B.1691, subd. 2f(f), retail electric sales to certain large power customers (iron mining and paper and wood product manufacturing) are excluded for the purposes of calculating a utility's total retail sales for purposes of the Solar Energy Standard.

⁶ *In the Matter of the Application of Minnesota Power for Authority to Increase Electric Service Rates in the State of Minnesota*, Docket E-015/GR-23-155, Order Accepting and Adopting Agreement Setting Rates (Nov. 25, 2024).

⁷ *In the Matter of the Application of Minnesota Power for Authority to Increase Electric Service Rates in the State of Minnesota*, Docket E-015/GR-23-155, Minnesota Power Compliance Filing, Schedule 12 (Dec. 20, 2024).

⁸ The CPA factor is not applied to Large Power customers that have obtained exemptions from Conservation Improvement Program charges.

Supply Plan incremental power supply costs change from 2025 to 2029 would be expected to increase the average Residential rate by about two percent Compound Annual Growth Rate (“CAGR”). That is equivalent to an increase of \$2.53 per month compared to 2025 Base Rates for Residential customers. The impact to the average Large Power rate would be an annual increase of about a two percent from 2025 to 2029. That is equivalent to an increase of \$122,302 per month.

Table 1. Estimated Average Rate Impacts of 2025 Plan Relative to 2025 Projected Base Rates

Rate Class Impacts ⁹	2026	2027	2028	2029	2026 – 2029 CAGR
Residential (average rate, cents/kWh)	14.961	14.961	14.961	14.961	
Increase (cents/kWh)	0.277	1.058	1.839	1.472	
Increase (%)	1.85%	7.07%	12.29%	9.84%	2.37%
Average Impact (\$ / month)	\$1.90	\$7.24	\$12.64	\$10.10	
General Service (average rate, cents/kWh)	15.005	15.005	15.005	15.005	
Increase (cents/kWh)	0.278	1.060	1.844	1.475	
Increase (%)	1.85%	7.07%	12.29%	9.83%	2.37%
Average Impact (\$ / month)	\$6.95	\$26.41	\$45.97	\$36.40	
Large Light & Power (average rate, cents/kWh)	11.584	11.584	11.584	11.584	
Increase (cents/kWh)	0.218	0.823	1.429	1.146	
Increase (%)	1.88%	7.11%	12.33%	9.89%	2.39%
Average Impact (\$ / month)	\$437.78	\$1,616.59	\$2,756.65	\$2,147.10	
Large Power (average rate, cents/kWh)	8.937	8.937	8.937	8.937	
Increase (cents/kWh)	0.160	0.634	1.109	0.885	
Increase (%)	1.80%	7.09%	12.41%	9.90%	2.39%
Average Impact (\$ / month)	\$94,071	\$371,582	\$600,104	\$489,207	
Lighting (average rate, cents/kWh)	45.778	45.778	45.778	45.778	
Increase (cents/kWh)	0.779	3.034	5.388	4.362	
Increase (%)	1.70%	6.63%	11.77%	9.53%	2.30%
Average Impact (\$ / month)	\$1.08	\$4.19	\$7.43	\$5.97	
Average Weighted Increase (cents/kWh)	0.192	0.746	1.298	1.035	
Avg Weighted Increase (%)	1.82%	7.09%	12.33%	9.82%	2.37%

⁹ Average current rates are 2025 estimates. These estimates are based on 2024 base rates from Minnesota Power's last rate case, Docket No. E-015/GR-23-155, with 2025 estimated cost recovery rider rates and the estimated 2025 FPE and CPA factor added. The CPA factor is not applied to Large Power Class.

E. Minimizing Customer Rate Impacts

Minnesota Power has been working hard to reduce the rate impacts of capital projects needed to support its *EnergyForward* strategy and compliance with state renewable and carbon free energy requirements. As discussed in Section V of the IRP, Minnesota Power has identified opportunities to capitalize on Production Tax Credits (“PTCs”) and Investment Tax Credits (“ITCs”). The Company has also been aggressively pursuing state and federal funding opportunities. To date, Minnesota Power has secured \$78.10 million in state and federal funding to support capital projects needed to maintain reliability of transmission and hydroelectric infrastructure. As shown in Table 2, the Company has applied for over \$261 million in funding since 2023. Federal funding opportunities are highly competitive, and the Company is proud to share that it has been awarded approximately 30 percent of the funding it has pursued.

Table 2. Minnesota Power’s State and Federal Funding Opportunities

Status	Funding Opportunity	Project(s) Supported	Type	Request (In Millions)
Awarded	GRIP I (TA2)	HVDC Modernization	Grant	\$50.00
Appropriated	MN Legislative appropriation	HVDC Modernization	Grant	\$15.00
Awarded	MN State Competitiveness Fund	HVDC Modernization	Grant	\$10.00
Awarded	Section 247 - applications (2)	Scanlon Gates; Blanchard #1	Incentive Payment	\$3.10
Total Awarded --->				\$78.10
Drafting	Rural and Remote	Burnett Substation/FDL	Grant	\$47.00
Not Selected	GRIP II (TA2) - concept paper	HVDC AC Interconnection	Grant	\$50.00
Not Selected	GRIP II (TA1) - application	Resilience & Preparedness Project	Grant	\$50.00
Not Selected	NEVI	DCFC Installation - Duluth	Grant	\$0.77
Not Selected	NEVI	DCFC Installations - Hinckley	Grant	\$0.78
Not Selected	Section 247 - applications	Scanlon Unit 2	Incentive Payment	\$0.63
Not Selected	Carbon Management	Biomass Capture Study	Grant	\$1.50
Not Selected	Energy Storage	GridStar Flow Battery Demonstration	Grant	\$30.00
Not Selected	Industrial Decarbonization	Mine Truck Electrification	Grant	\$25.00
Not Selected	GRIP II (TA1) - concept paper	HVDC 900 MW Line Upgrade	Grant	\$25.00
Total Not Selected --->				\$183.68
7 Concept Paper submissions (5 – Encouraged to submit full application)			Total Requested --->	\$261.78
12 Application submissions (4 – Awarded; 8 – Not Selected; 0 – Pending)			Award Rate --->	30%
22 Letters of Support provided to other entities seeking government funding			Total Supporting --->	\$1,004

Additionally, the Company has provided 22 letters of support for other entities seeking over \$1 billion in total funding. Projects the Company has provided support for and that have been awarded funding include:

- The City of Duluth’s application to the United States Department of Energy (“DOE”) Energy Future grant program
- Minnesota’s Climate Pollution Reduction Grant, Coalition Proposal for Equitable Residential Decarbonization - City of Duluth Partnership
- Center for Energy and Environment, Minnesota Advanced Energy Codes Partnership; DOE’s Resilient and Efficient Codes Implementation initiative
- University of North Dakota’s Carbon Ash Project
- Moving Greater MN forward
- Hydrogen Hub (regional)
- Minnesota Green Iron Project

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- City of Duluth Geothermal project; DOE Heating and Cooling Grant; Community Geothermal Heating and Cooling Design and Deployment
 - United States Department of Transportation Advanced Transportation Technologies and Innovation (“ATTAIN”) Grant - Grand Rapids, Minnesota Autonomous Rural Transit Initiative (goMARTI) expansion
 - LNKP 156 DOE Technical Assistance (DOE Local Energy Action Program (“LEAP”) Grant)
 - Bois Forte Tribal Government Electrifying Tribal Communities
 - Minnesota Industrial Transformation Initiative (“MITI”)

Minnesota Power will continue to monitor state and federal funding opportunities as they become available, as well as PTC and ITC availability, to reduce overall rate impacts as it implements actions identified in its IRPs. The Company looks forward to continued collaboration with regional and state partners to identify and secure funding to support our shared energy goals.