minnesota power
AN ALLETE COMPANY

30 West Superior Street
Duluth, MN 55802-2093
www.mnpower.com

December 22, 2020

VIA E-FILING
Will Seuffert
Executive Secretary
Minnesota Public Utilities Commission
121 7th Place East, Suite 350
St. Paul, MN 55101-2147

Re: In the Matter of the Application of Minnesota Power for Authority to Increase Electric Service Rates in Minnesota
Docket No. E-015/GR-19-442

In the Matter of the Emergency Petition of Minnesota Power for Approval to Move Asset-Based Wholesale Sales Credits to the Fuel Adjustment Clause and Resolve Rate Case
Docket No. E-015/M-20-429

Minnesota Power's Large Light and Power Rate Design Compliance Report

Dear Mr. Seuffert:

Minnesota Power respectfully submits this Large Light and Power Rate Design Compliance Report in compliance with the Minnesota Public Utilities Commission's ("Commission") June 30, 2020, *Initial Order Approving Petition and Resolving Rate Case with Conditions* in the above dockets. Order Point 2.B. required Minnesota Power to "Work with its Large Light & Power customers on rate design alternatives and file a report on those discussions within six months."

This report summarizes the process used and customer feedback received. As noted in the report, Minnesota Power requests that the Commission set a comment period on the report and subsequently schedule a Commission meeting to address this matter.

Please contact me at 218-349-1233 or mpodratz@mnpower.com if you have any questions regarding this filing.

Sincerely,

Marcia A. Podratz

Marcia A. Podratz
Regulatory Compliance Principal

MAP:th
Attachments

STATE OF MINNESOTA
BEFORE THE
MINNESOTA PUBLIC UTILITIES COMMISSION

In the Matter of the Application of Minnesota Power for Authority to Increase Electric Service Rates in Minnesota	Docket No. E-015/GR-19-442
In the Matter of the Emergency Petition of Minnesota Power for Approval to Move Asset-Based Wholesale Sales Credits to the Fuel Adjustment Clause and Resolve Rate Case	Docket No. E-015/M-20-429

MINNESOTA POWER'S LARGE LIGHT & POWER RATE DESIGN COMPLIANCE REPORT

I. INTRODUCTION

On November 1, 2019, Minnesota Power (or the "Company") filed a general rate case ("2019 Rate Case").[1] Consistent with rate case practice, the Minnesota Public Utilities Commission ("Commission") authorized Minnesota Power to begin collecting an interim rate increase beginning January 1, 2020. Due to the unprecedented nature of the COVID-19 pandemic and associated economic challenges, the Company filed a proposal to resolve and ultimately withdraw the 2019 Rate Case ("rate case resolution") on April 23, 2020.[2] Some topics that were introduced in the 2019 Rate Case initial filing, including potential Large Light and Power ("LLP") rate design changes, were set aside for future discussion rather than being addressed specifically in the rate case resolution.

On June 30, 2020, the Commission issued its Initial Order Approving Petition and Resolving Rate Case with Conditions (the "Order"). Order Point 2.B. required Minnesota Power to "Work with its Large Light & Power customers on rate design alternatives and file a report on those discussions within six months."

[1] Docket No. E-015/GR-19-442, *In the Matter of the Application of Minnesota Power for Authority to Increase Electric Service Rates in Minnesota*.
[2] Minnesota Power's Petition filed April 23, 2020, in Docket No. E-015/GR-20-429, *In the Matter of the Emergency Petition of Minnesota Power for Approval to Move Asset-Based Wholesale Sales Credits to the Fuel Adjustment Clause and Resolve Rate Case.*

Minnesota Power appreciates the opportunity to provide the following information in this report and looks forward to feedback and comments from the Commission and stakeholders:

- a brief overview of its LLP customers and current services provided to them,
- a summary of the process used to obtain feedback from LLP customers, as well as the general focus and topics of feedback they provided, and
- a description of existing programs, customer feedback, and future optionality for rate design alternatives in the main topic areas of renewable energy, demand response ("DR"), time-of-use ("TOU"), and other/additional customer feedback.

II. LARGE LIGHT AND POWER CUSTOMERS AND SERVICES

Minnesota Power has approximately 400 LLP customers with billing demands that vary greatly. They include a wide range of commercial and industrial businesses such as colleges, food processors, metal foundries, hotels and resorts, hospitals and other healthcare facilities, manufacturers, pipelines, restaurants, retail stores, schools, and many others. Minnesota Power has a long history of working with this class of customers to provide a variety of products and rate schedules. In addition to the standard LLP tariff, customers may also choose from optional services including Commercial/Industrial Dual Fuel Interruptible Electric Service; Commercial/Industrial Controlled Access Electric Service; the Rider for General Service/Large Light and Power Interruptible Service; Rider for Voluntary Energy Buyback; Rider for Voluntary Renewable Energy; General Service/Large Light and Power Area Development Rider; Rider for Foundry, Forging and Melting Customers; Pilot Rider for Large Light and Power Time-of-Use Service; Rider for Backup Generation Service; and most recently the Rider for Business Development Incentive, some of which are described in more detail later in this report. Some LLP customers have assigned Minnesota Power account representatives who serve as their main customer service contact, while other LLP customers are assisted by Minnesota Power's Distribution Customer Operations group to address questions and issues that arise.

III. LLP CUSTOMER FEEDBACK – PROCESS AND SUMMARY

Throughout the fall of 2020, Minnesota Power worked to develop an initial list and descriptions of current and potential rate design offerings for LLP customers, and planned customer interactions to solicit feedback on potential future rate design alternatives. Minnesota Power engaged with the LLP customers using a variety of means including individual customer discussions, a virtual meeting with interested LLP customers on November 11, 2020, and a brief online survey. A copy of the letter to customers regarding the survey and customer meeting is provided as Attachment 1. In addition to the letter, the Company used individual customer outreach and an automated call invitation in an attempt to reach as many LLP customers as possible.

At the November 11 meeting, Minnesota Power informed LLP customers of current Company programs and listened to feedback from participating customers to inform Minnesota Power's future rate alternatives. The main topics of discussion were renewable energy, DR, TOU rates, and miscellaneous/other rate options. A copy of the slides used for the meeting is provided as Attachment 2.

LLP customers who registered for the meeting included:

- Anderson Processing
- College of St. Scholastica
- Enbridge
- Essentia Health
- Falls Fabricating
- Flint Hills Resources – Minnesota Pipeline
- Gerdau
- City of Little Falls
- Little Falls K-12
- Polymet Mining
- Hom Furniture
- Involta
- ISD 2165
- Upsala K-12
- Mann Lake LTD
- Wabash National L.P.
- Team Industries
- Ferche Millwork
- West Central Telephone Association

More information, including descriptions of Minnesota Power's current program offerings, additional information on rate design alternatives that were discussed, and customer feedback regarding each of those rate design alternatives, is provided below.

Just as the size and type of customers in this customer class varies, their feedback related to potential rate design alternatives varied as well. In general, all customers indicated that safety, reliability and cost remain the top priority desired characteristics of electric service for them. Additionally, while some customers indicated interest in additional renewable energy offerings in both the customer meetings and the online survey, other customers do not have interest in additional renewable energy and have other energy priorities. In the meeting, some customers voiced strong interest in DR and TOU options; however, this interest was not replicated in survey responses. Customers who are interested in DR and TOU indicated they are willing to modify their energy usage (to varying degrees) in order to lower their energy costs.

Other areas of interest from the customers included energy conservation, more efficient equipment, electric rates that equitably represent cost of service, and incentives for electrification.

IV. EXISTING PROGRAMS, CUSTOMER FEEDBACK, AND FUTURE OPTIONALITY

A. Renewable Energy

1. Existing Programs

Minnesota Power is moving further and faster in incorporating renewable energy into its power supply portfolio and currently has a higher percentage of renewable energy in its mix than any other Minnesota utility. In December 2020, Minnesota Power reached a milestone of providing 50 percent renewable energy to customers.

In addition to renewable energy within the Company's power supply, Minnesota Power offers specific programs for customers who would like to secure additional renewables:

a. Rider for Voluntary Renewable Energy (Renewable Source)

Renewable Source is an existing renewable energy option with current enrollment of 123 customers. This rate option provides an opportunity for customers to reduce their carbon footprint and reach their individual renewable energy goals. There is a monthly premium for participation in the program, and customers choose the amount of renewable energy they want to purchase. Renewable Energy Credits ("REC") are retired on behalf of the customer without a requirement of equipment or a contract.

b. Community Solar Garden Pilot Program

The Community Solar Garden ("CSG") Pilot Program is an existing renewable energy option that provides flexibility and optionality for Minnesota Power customers who wish to participate in solar programs, but do not have a site that is well-suited for a solar installation. The fully subscribed program currently offers 520 one-kW blocks that customers can subscribe to with three convenient pricing options for customers to participate.

2. Customer Feedback

Customers were mixed in their responses regarding additional renewable energy. Some were not interested in more renewable energy beyond what Minnesota Power already has in its system resource mix. Others wanted to learn more about the type of renewable energy that would be available, with their interest depending on factors such as price and contract term.

3. Future Optionality

The Company continues to evaluate additional renewable energy programs based upon customer interest. One renewable option currently being evaluated is a green

tariff program, where the utility procures renewable energy on behalf of customers and customers retain ownership of the RECs. Generally, customers subscribe to a green tariff program for a five- to ten-year time period, the green tariff rate is locked in for the term of the agreement (whether the rate is flat or escalating), and the customer does not pay the standard fuel and purchased energy charge for any renewable energy elected. Additionally, as part of Minnesota Power's solar strategy, the Company will continue to evaluate additional community solar garden program offerings.

B. Demand Response

1. Existing Programs

Minnesota Power has a long history of offering DR for customers in all classes. Specific to the LLP class, Minnesota Power offers the Rider for General Service/Large Light and Power Interruptible Service ("GS/LLP Interruptible Rider") and Commercial/Industrial Dual Fuel Service.

a. <u>GS/LLP Interruptible Rider</u>

The LLP Interruptible Rider is an existing DR option for customers who have at least 200 kW of either certified or non-certified interruptible load. The customer receives a billing credit of 11 percent of billing before any other applicable adjustments. Currently, Minnesota Power does not require load interruption, but instead customers can either shed load or buy-through the interruption period at an incremental price when they are notified of an interruptible period. Two LLP customers currently take service under the LLP Interruptible Rider.

b. <u>Dual Fuel Service</u>

Dual Fuel is a current option for Minnesota Power's Commercial/Industrial Customers where an alternative source of energy is available to satisfy interruptible electric service requirements during periods of interruption. The

customer's primary energy source must be electric and the secondary or back-up energy source is capable of continuous operation. The interruptible load of the approved Dual Fuel installation is separately served and metered and not connected to facilities serving customer's firm load. Interruptions normally occur for reliability-related needs before interruptions for any certified interruptible loads for Large Power, Large Light and Power, and General Service. Upon receiving a control signal from the Minnesota Power, the Customer must shed its interruptible load and for a duration as required by the Company whenever the Company determines such interruption is necessary.

2. Customer Feedback

Significant time was spent discussing DR options at the customer meeting. Customers wanted to know more about what might change as Minnesota Power better aligns its DR products with Midcontinent Independent System Operator ("MISO") and develops additional products. Variables may include the load size threshold for participation, length of contract commitment, whether physical interruption is required, amount of notice provided before interruptions, and the frequency and duration of interruptions. In particular one stakeholder referenced MISO's DRR Type 1 program. The value for customers in the MISO market is currently low, but may increase in the future and give customers additional operational flexibility.

3. Future Optionality

The Company is continuing work on utilizing the willingness of its commercial and industrial customers to assume production risk through participation in DR programs as a way to provide benefit to the utility electric system. DR programs could enable these customers to realize electric cost savings through participation, while also providing broader system benefits. A broad suite of products would provide both the Company and its customers with the flexibility to match programs and quantities to specific operations as well as to Minnesota Power's needs for the electric utility system. Minnesota Power will also need to ensure that any future

DR program considered aligns with MISO requirements for resource adequacy or provides benefits to the increasingly dynamic and clean electric system and, thereby, all customers.

Minnesota Power continues to explore the use of DR in more flexible and longer-term products. This could include modification to existing DR programs available to the LLP class (such as modifying the GS/LLP Interruptible Rider), expansion of DR programs available to other classes (for example, expanding LP DR to LLP customers over 10 MW), and the creation of new programs. DRR Type 1 is an example of a potential new DR program for customers who have ability to reduce their energy requirements. However, Minnesota Power needs to balance the value for the customer with the administrative burden for the Company associated with implementing it.

On November 20, 2018 Minnesota Power hosted a DR workshop for commercial and residential customers with a focus on best practices regarding DR programs nationwide and a stakeholder perspectives panel discussion. The materials from this meeting can be found in the Company's Petition for Approval of Minnesota Power's Industrial Demand Response Product, which was filed on December 7, 2018 in Docket No. E015/M-18-735. A summary is found in the report, with detailed meeting materials included in Appendix B to the report. The material from this stakeholder meeting would be leveraged if DR changes are contemplated for LLP customers in the future.

C. Time-of-Use

1. Existing Programs

Minnesota Power's Pilot Rider for Large Light and Power Time-of-Use Service ("LLP TOU Rider") was approved by the Commission in 2011.[3] The LLP TOU Rider is available to customers who have demand of 10,000 kW or greater. The

[3] MPUC's August 8, 2011 Order in Docket No. E-015/M-11-311.

rate provides demand and energy pricing that differs for on-peak and off-peak periods. Since Enbridge began taking service under the LLP TOU Rider on July 1, 2019, they have been the only customer on it, partly because of the high demand threshold for participation.

2. Customer Feedback

Customers are interested in having a lower eligibility threshold for the LLP TOU Rider and having a shorter on-peak time period with more targeted costs. Customer input and Company research indicates that many different price structures and ratios can be found throughout the industry. Time-of-use rates vary by season, on weekdays versus weekends and holidays, and across multiple periods over the course of an individual day.

3. Future Optionality

In the 2019 rate case that was resolved, Minnesota Power proposed changes to the on-peak and off-peak energy charges that would have increased the ratio of the on-peak to off-peak rates to about 1.5.[4] The 1.5 ratio would have been equal to the lowest of the three options included in Minnesota Power's February 20, 2019, Residential Time-of-Day Rate Compliance Report[5] and slightly higher than the existing LLP TOU Rider energy charge ratio of 1.2.

Since then, Minnesota Power has continued to research best practices for TOU rates (e.g., ratio of on-peak to off-peak, seasonal, peak and off-peak time periods, for both demand and energy charges), with the goal of making the LLP TOU Rider more attractive to a larger group of customers and also better aligning the costs that customers see with the actual cost of producing electricity in an increasingly dynamic and clean energy system. The current LLP TOU Rider ratio of on-peak

[4] Minnesota Power's November 2, 2019 initial rate case filing in Docket No. E015/19-442, Direct Testimony of Marcia A. Podratz, pages 98 to 99.
[5] Docket No. E015/M-12-233.

to off-peak energy charges following the rate case resolution compliance filing[6] is about 1.3.

On December 1, 2020 Minnesota Power filed an updated residential rate design proposal[7] including an on/super-off-peak ratio of approximately 2.0. Analysis that was performed for this proposal may also be used in potential future LLP time-of-day ("TOD") rate design updates. Any LLP TOD rate must be consistent with Minnesota Power's system characteristics, with a mechanism to update the rate to match the future dynamics of the grid and Minnesota Power's system. The Company's system, and the industry more broadly, will be changing significantly in the years to come. In order for the TOD rate to complement additional renewable resources and shift customer behavior to create system efficiencies as it is intended to, it will need to be regularly evaluated to ensure it is incentivizing the appropriate customer energy usage patterns. A TOD rate that is not matched appropriately to specific system considerations will not produce the value for customers that it is intended to. Additionally a future TOD rate design must be supportable through billing and Meter Data Management ("MDM") system functionality. System customizations are costly to support, would erode the benefits of a TOD rate offering, and would introduce risk for ongoing support and maintenance.

On September 11, 2020, Minnesota Power filed its LLP TOU rate pilot evaluation report,[8] as required by the Commission following the first customer taking service for one year under the LLP TOU Rider. As described in the pilot evaluation report, the LLP TOU Rider application presents both metering and billing limitations.

For the one customer that is currently on the pilot, the Company must bill using manually calculated TOU buckets based on 15-minute interval data. This billing

[6] Minnesota Power's July 1, 2020 Final Rate Tariff Sheet Compliance Filing, Docket No. E015/20-429, Minnesota Power Electric Rate Book, Volume I, Section V, Page No. 90.0.
[7] In the Matter of the Petition for Approval of Changes to Minnesota Power's Residential Rate Design, Docket No. E015/M-20-850, filed December 1, 2020.
[8] In the Matter of Minnesota Power's Petition for Approval of a Pilot Rider for Large Light and Power Time-of-Use Service, Docket No. E015/M-11-311, Minnesota Power's Compliance Report filed September 11, 2020.

methodology decision was driven by the timeline of the rate change, development and integration of new metering technology, integration and functionality development for Minnesota Power's billing system, as well as the timeline of the replacement of Minnesota Power's billing system and the addition of an MDM System. The upgraded MDM and billing systems will allow for automated TOU bucketing and billing of Large Light and Power customers with existing metering technology. This Large Light & Power TOU functionality is currently scheduled as part of phase two of the replacement of Minnesota Power's billing system and addition of an MDM.

Currently the feasibility to roll-out the TOU rate to a broader group of customers would be difficult, and the Company feels that load profiles and stakeholder input should also be taken into consideration.

D. Other / Additional Customer Feedback

Throughout this process, Minnesota Power heard from customers that they were appreciative of the process and opportunity to provide feedback. Additionally, customers continue to stress the need for competitive electric rates, particularly during this time of economic challenges associated with the COVID-19 pandemic.

Customers shared that in addition to competitive rates, programs and rates should equitably represent cost of service within and between classes, whether that equity is built into standard rate tariffs, such as high voltage or high load factor discounts, or built into Minnesota Power programs to ensure that customers who change behaviors retain all associated benefits.

Additionally, customers expressed strong interest in conservation programs and power quality improvements. Minnesota Power has and will continue to utilize its successful Conservation Improvement Program that assists customers in these areas.

Finally, in regards to electrification efforts, customer discussion and interest was generally related to potential incentives or rebates.

V. CONCLUSION

Minnesota Power thanks the Commission for the opportunity to provide this update on its discussions of rate design alternatives with LLP customers. The Company looks forward to further understanding and evaluating the wants and needs of its LLP customers and incorporating their feedback into future rate design and product offerings, recognizing that any future offerings would need further evaluation and development. Minnesota Power also looks forward to feedback from the Commission and stakeholders. To facilitate that, Minnesota Power requests that the Commission set a comment period on this report and subsequently schedule a Commission meeting to address the matter.

Dated: December 22, 2020

Sincerely,

Marcia A. Podratz

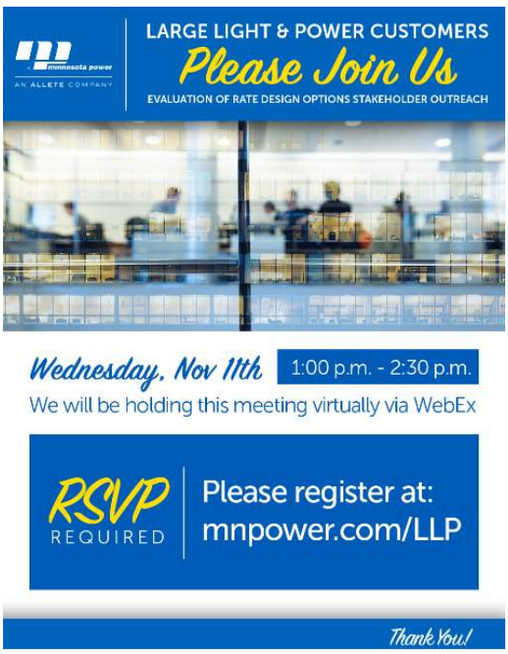
Regulatory Compliance Principal
Minnesota Power
30 W. Superior Street
Duluth, MN 55802
(218) 355-3570
mpodratz@mnpower.com

Address Line 1
Address Line 2
Address Line 3

October XX, 2020

Dear Minnesota Power Customer,

Please join Minnesota Power on November 11, 2020 from 1:00 – 2:30 PM CST to learn about, discuss, and provide feedback on Minnesota Power's evaluation of potential future rate design options for Large Light & Power customers. Please see the invitation below, and if you are able to attend RSVP by registering online for the Webex event.



Another option to provide feedback is by taking a brief online survey at mnpower.com/LLP by November 13. The survey will take about five minutes and your participation will be confidential.

Minnesota Power would appreciate your engagement through the stakeholder meeting, by taking the survey or both. If you have any questions, please contact Alison Paulseth-Bautch directly at abautch@mnpower.com or at 218-220-0379. Customer feedback will used in our upcoming Large Light & Power rate options compliance filing update to the Minnesota Public Utilities Commission that was required as part of Minnesota Power's 2019 rate case resolution.

Sincerely,

Frank Frederickson
Vice President – Customer Experience
ffrederickson@mnpower.com
218-355-3248

Large Light & Power Customer Stakeholder Meeting

November 11, 2020

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WebEx Tips

- Audio works best with a headset or have WebEx call you. Try to avoid using your computer's audio function.
- Please mute if you are not speaking.
- Use the chat box or raise hand function during our presentation for asking questions or clarifications.
- Participant list and chat function is located in the lower right corner of your WebEx screen.
- We encourage discussions with you during the whiteboard exercises.

Large Light & Power Customer Stakeholder Meeting

November 11, 2020

Minnesota Power Cross-functional Team:
Alison Paulseth-Bautch – *Strategic Account Manager*
Eric Clement – *Manager, Distribution Engineering & Asset Management*
Kristin Piontek - *Customer Business Analyst*
Leah Peterson – *Supervisor Customer Analytics*
Marcia Podratz – *Regulatory Compliance Principal*
Michelle Robbins – *Distribution Operations Advisor*

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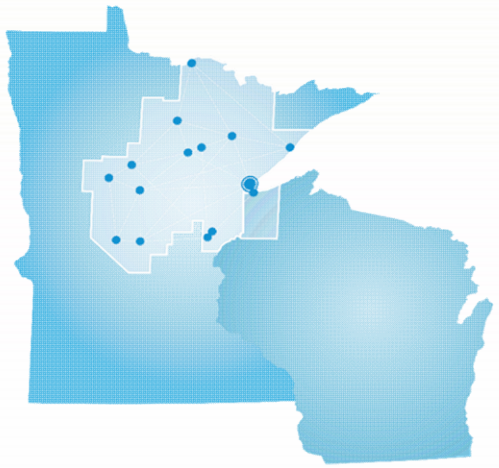
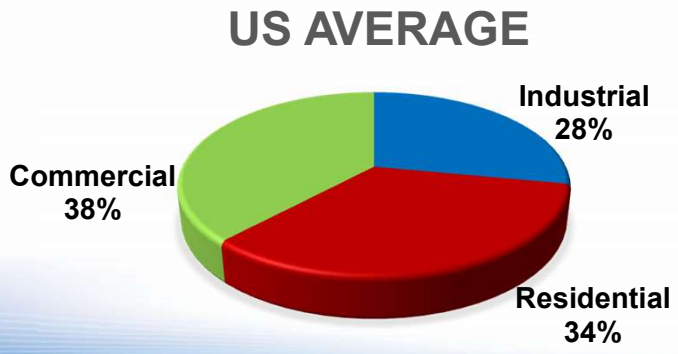
AGENDA

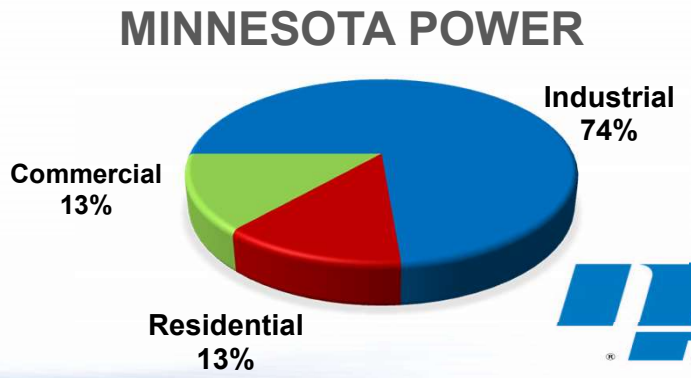
- Overview of Minnesota Power
- Overview of Current & Potential Programs
  - Renewable Energy
  - Demand Response
  - Time-of-use
  - Other Programs
- Questions/Discussions

MP – Current Customer mix

- Headquartered in Duluth, MN for more than a century
- Serve 145,000 customers & 16 municipalities across 26,000 square mile service territory
- Northeastern Minnesota is a natural-resource based economy
  - Our Industrial customers account for over 70% of MP's retail sales
  - Commercial & Residential customer classes much smaller than typical utility







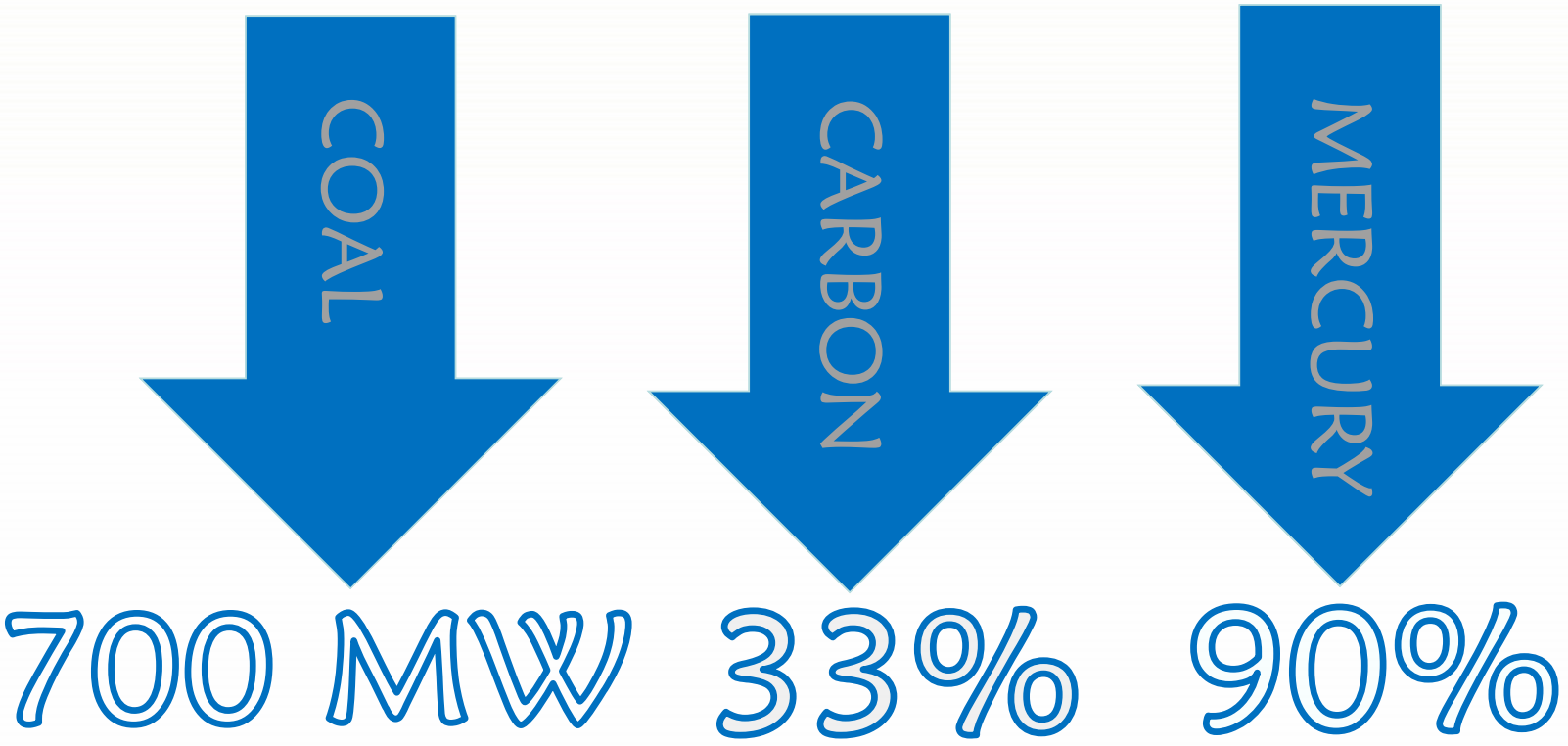
Purpose & Objective of Today's Meeting

"Work with its Large Light & Power customers on rate design alternatives and file a report on those discussions within six months."

- Inform customers of current MP programs
- Listen to feedback from customers to inform MP's future rate alternatives for Large Light & Power customers
- Feedback will be used in Large Light & Power rate options compliance filing to the MPUC by year end

Renewable Energy

In The Last Decade, MP Has Decreased:



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Minnesota Power's current Renewable Program options

	EnergyForward MP STANDARD ENERGY MIX	Renewable Source	Community Solar Garden	SolarSense
Energy source	30% renewable (wind, hydro, solar)	100% wind*	100% solar	100% solar
Additional cost to participate	—	✓	✓	✓
Financial benefit	A mix of the lowest cost renewable energy keeps rates low for all customers	—	✓	✓
On-site installation required	—	—	—	✓
Minimum contract length at signup	—	—	—	✓
Earn renewable energy credits (REC)**	—	✓	—	—

Renewable Program Options

Program Characteristics	Green Pricing	Green Tariff
Cost savings potential	No, products average around 1.5 cents/kWh premium	May be cost-competitive, depending on structure and term
Price stability	No, continue to pay utility rate that is subject to change	Possible under certain program structures
Contract length	Shorter contract terms (typically month-to-month)	Longer agreements possible (10-20 years)
Ease of joining	Typically a simple sign-up process	Often limited availability, longer contract is potential barrier
Choice of renewable resource	Utility determines	Customer may have input

Green Tariff products have a longer contract term and potential utility cost savings, while Green Pricing products involve a premium and shorter contract term.

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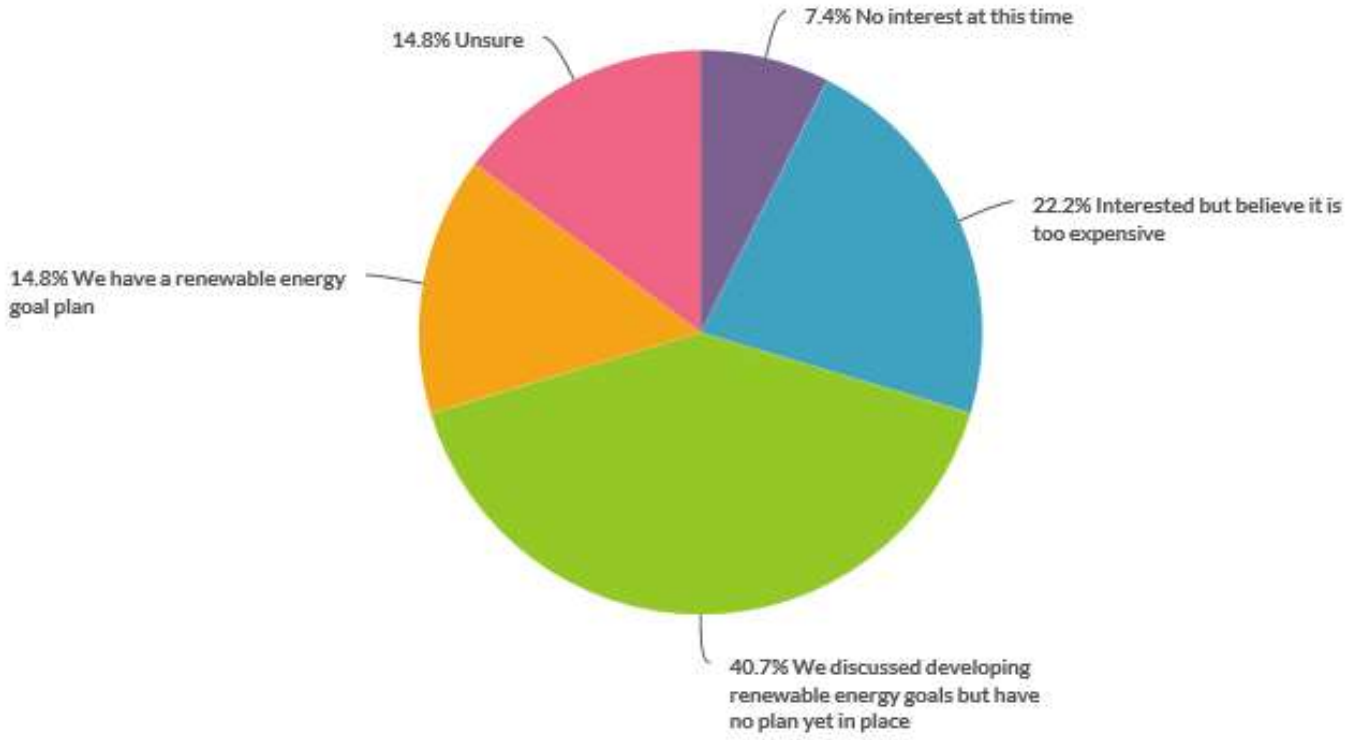
Which best describes your organization's interest in renewable energy?



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If you were to participate in a 100% renewable energy program, please rank the items below in order of importance

Item	Overall Rank
Cost	1
Flexibility to leave the program at any time	2
Knowing you are contributing to expansion of renewable energy	3
Meeting your organization's renewable energy goals	4
Location of the renewable energy	5

Green Tariff Stakeholder Meeting Moderated Exercise

Program Cost

- $0.01/kWh may be too high of a program cost, depending on participation level
- Allocating part of larger wind to bring costs down is beneficial
- Cost is first priority for participation
- Interest in potential higher cost if local solar is developed

Location

- Regionally located to mitigate adverse forms of energy in the area (carbon intensive)
- Geographic diversity to avoid outages
- Larger and distributed to get lower costs and a mix of resources

Contract Terms

- Scalability is important for government agencies, which could include program size or longer term contracts with lower prices
- Options for contract length/price
- Stability in cost of energy is important

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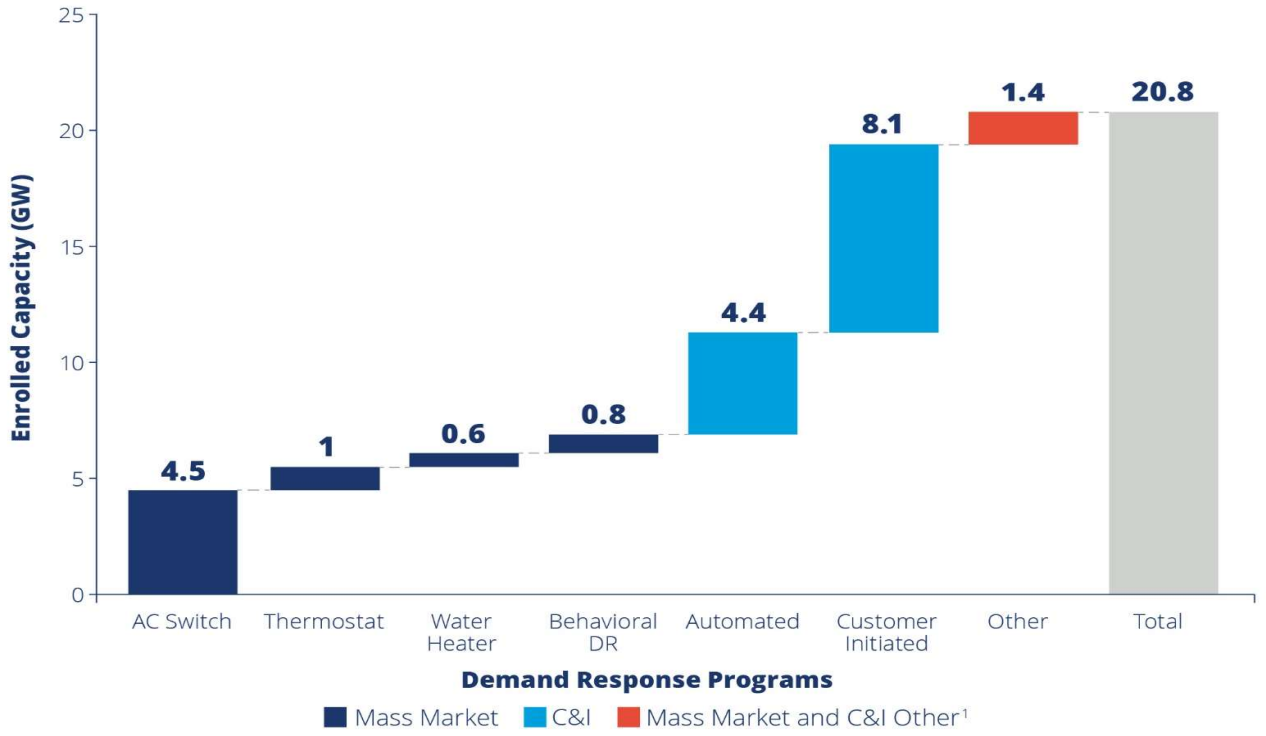
Demand Response Programs

Figure 1: 2018 Enrolled Demand Response Capacity (GW) by Program Type



Source: Smart Electric Power Alliance, 2019. N=190 Utility Survey participants.

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LL&P
Renewable Energy
Whiteboard Activity

Demand Response

Demand Response Overview

Demand response is the power grid's way of saying, "Hey, give me that electricity back!" Or—in some cases—the exact opposite: "Here, have some more!"

Excerpts from Customer DR Panel Discussion in November 2018

Question: As Minnesota Power moves forward and thinks about DR for commercial customers, what's the one thing you'd want us to keep in mind?

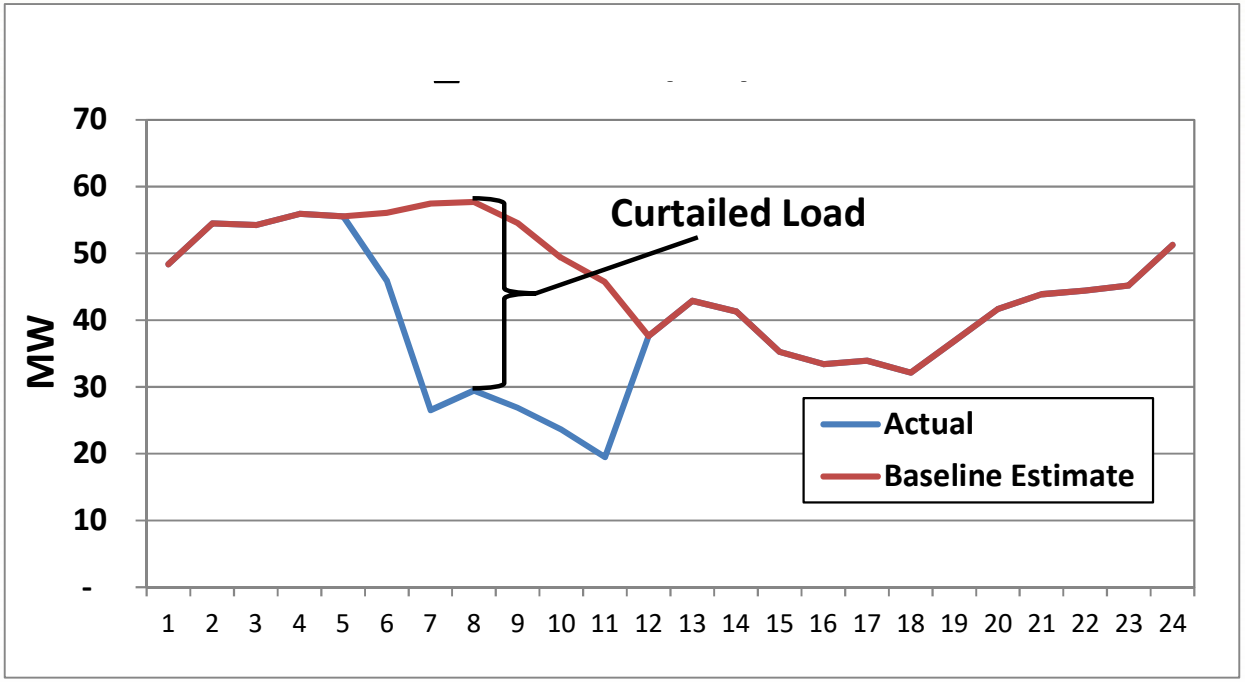
- *Help us identify where we can cut demand. We don't have a lot of information, notice time also helps with figuring out how to cover capital investment needs. – UMD*

- *CIP has been fantastic, is longstanding and entrenched in the community. Maybe DR could work in a similar way for education, benefits, risks and costs. –St. Louis County*

Dual Fuel

MP notifies dual fuel customer when interruptions will occur through text message, e-mail, or company website

Dual Fuel


70
60
50
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-
MW
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
Curtailed Load
Actual
Baseline Estimate

Interruptible Energy

RIDER FOR GENERAL SERVICE/LARGE LIGHT AND POWER INTERRUPTIBLE SERVICE

APPLICATION

Applicable to any customer taking service under General Service (Schedule 25) or Large Light and Power Service (Schedule 75) and which has at least 200 kW of load (Certified Interruptible Load and/or Non-Certified Interruptible Load) that qualifies for interruptible service. All provisions of the applicable standard Service Schedule shall apply to interruptible service under this Rider except as noted below.

Interruptible Energy

Highlights of Current Rider

- Option of having interruptible load certified
- Option to buy-through (billed at incremental cost)
- Interruptible load separately served and metered
- Customer receives a billing credit

FUTURE

Align with MISO Demand Response Program

How Demand Response Programs work on Minnesota Power's System

- Reduce energy demand during peak periods
- Minimize need to purchase energy during high priced hours
- Used to maintain reliable energy service to customers
- Displaces need to invest in new technologies

LL&P
Demand Response
Whiteboard Activity

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Time-of-Use

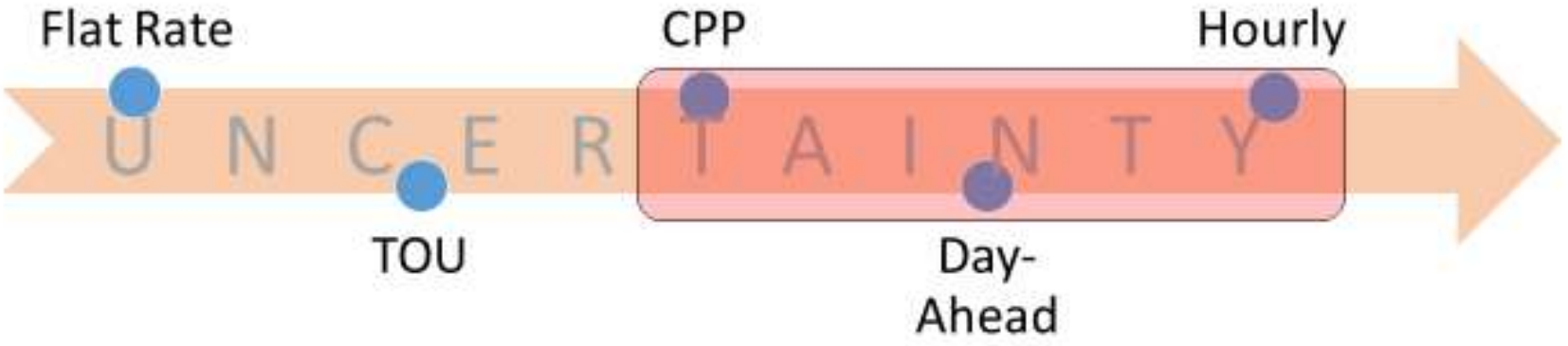
Time-Of-Use Overview

- Different energy rates for different time periods.
- Customer demand during on-peak hours results in higher system costs.
- Minnesota Power can pass cost savings on to customers by charging a discounted rate for off-peak usage.
- Customers can save money by shifting electricity use to off-peak hours.
- Becoming more popular across the industry.

What is dynamic pricing?

Dynamic Pricing is any rate design that changes with time and/or operating conditions. The more dynamic the rate, the more uncertainty for customers.

When will prices change?
Will the price go up or down?



LL&P Time-of-Use (TOU)

- Pilot Rider for LLP TOU
  - Voluntary participation for customers above 10 MW.
  - Fixed on/off-peak energy and demand rates.
  - On-peak period is defined as 7:00 a.m. to 10:00 p.m., Monday through Friday, excluding holidays.
- Recent Compliance Filing
  - Challenges
  - Opportunities
- What's next?

minnesota power
AN ALLETE COMPANY

LL&P
Time-of-Use
Whiteboard Activity

Other Rate Considerations

Other Rate Considerations

- **Power factor** – *benefits for customers with power factor above 90%*
  - Improving power factor can eliminate the power factor penalty charge
  - Solution for improving power factor is unique to each customer; consideration being given to cover the one-time installation costs

- **High load factor** – *by reducing peak demand, customers can use the same amount of total electric energy but benefit from lower demand charges and thus have a lower overall average rate*

- **Electrification** – *options with regard to electric vehicle charging, electric heating load, manufacturing and converting other loads to electric.*

LL&P
Other Rate Options
Whiteboard Activity

Conclusions and Closing Comments

- Next steps and deliverables
  - Incorporate customer input ideas and themes
  - MP to draft language on topics for compliance filing.

- Questions

Thank You!

STATE OF MINNESOTA	)	AFFIDAVIT OF SERVICE VIA
	) ss	ELECTRONIC FILING
COUNTY OF ST. LOUIS	)	

Tiana Heger of the City of Duluth, County of St. Louis, State of Minnesota, says that on the 22nd day of December, 2020, she served Minnesota Power's Compliance Filing in **Docket Nos. E-015/GR-19-442** and **E-015/M-20-429** on the Minnesota Public Utilities Commission and the Energy Resources Division of the Minnesota Department of Commerce via electronic filing. The persons on E-Docket's Official Service List for this Docket were served as requested.

Tiana Heger