

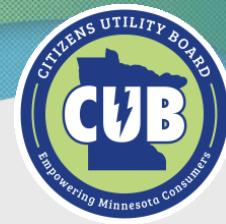
Cold Climate Rate Design and Planning Considerations

NECPUC Retail DR Working Group Presentation

Brandon Crawford

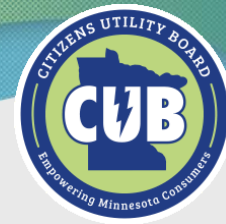
Regulatory Advocate, Citizens Utility Board of Minnesota





State of Minnesota Energy Policy Objectives

- **Carbon-free by 2040 standard** (Minn. Stat. § 216B.1691)
 - 2030 80 percent carbon-free for public utilities; 60 percent for munis and coops
 - 2035 90 percent for all electric utilities
 - 2040 100 percent for all electric utilities
- **Greenhouse gas emissions reduction goal** (Minn. Stat. § 216H.02)
 - Statewide goal across all economic sectors, including energy systems
 - 50 percent reduction by 2030; net-zero by 2050
- **Energy Conservation and Optimization** (Minn. Stat. § 216B.241)
 - Energy savings goals of 1.75 percent and 1.0 percent of gross annual retail energy sales for electric and gas investor-owned utilities, respectively

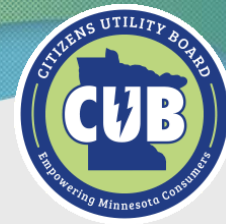


Energy Savings and Optimization Policy Goal

“...energy savings are an energy resource, and ... cost-effective energy savings are preferred over all other energy resources.”

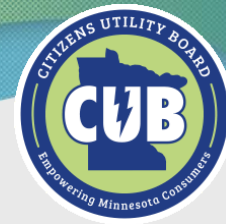
“[T]he legislature finds that optimizing the timing and method used by energy consumers to manage energy use provides significant benefits to the consumers and to the utility system as a whole.”

Minn. Stat. § 216B.2401



Rate Design at the Public Utilities Commission

- **Performance-Based Ratemaking** (Docket No. E-002/CI-17-401)
 - Limited to utilities with multiyear rate plans
 - Reporting across multiple different areas, including metrics on affordability, reliability, customer service quality, environmental performance, and cost-effective alignment of generation and load (demand response)
- **Demand Response Programs**
 - New and ongoing demand response programs
 - Commercial and industrial; residential A/C cycling, dual fuel rates
- **Default Time-of-Use Rates**
 - Minnesota Power, Northern States Power Company (pending application)



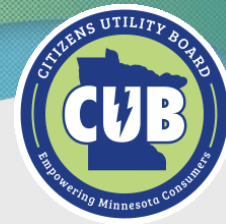
Time-of-Use Rate Design

Benefits

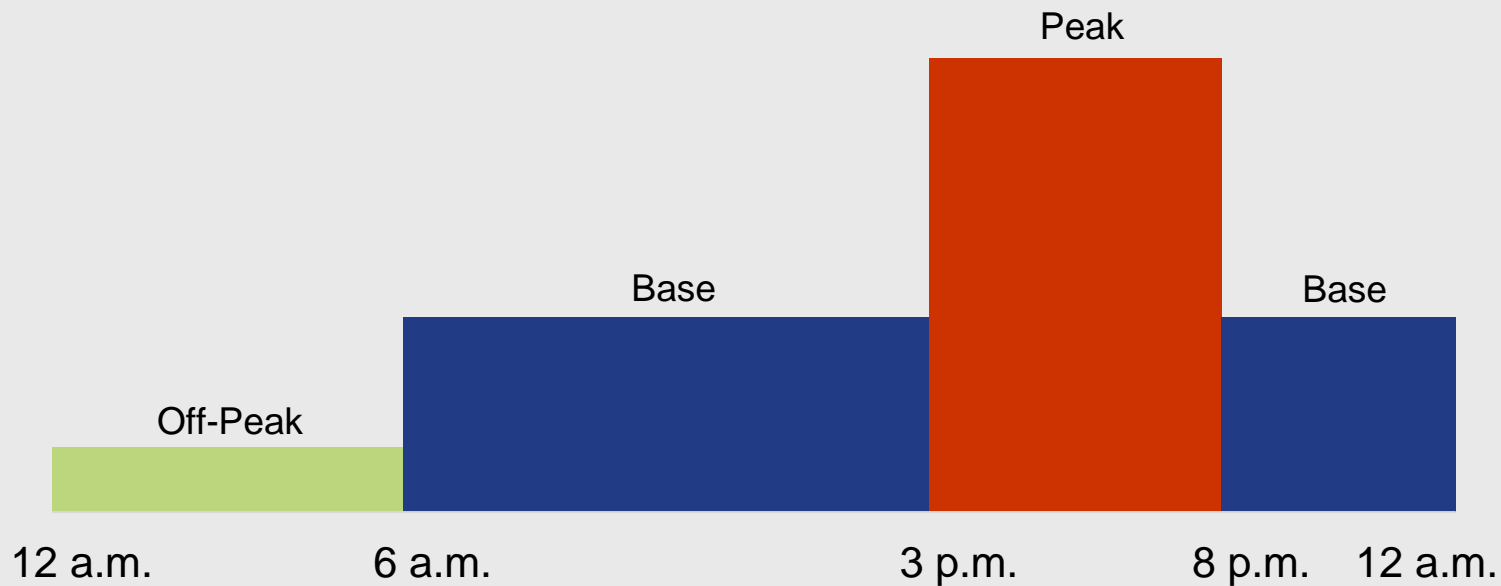
- Peak/ coincident peak reductions
- Potential to avoid new investments in peaker plants and/or other generation assets
- More reflective of utility generation costs
- Potential for lower customer bills
- Reduced emissions

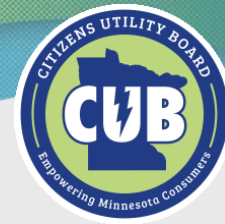
Challenges

- Seasonal variation
- Customer education and acceptance
- Limited residential load flexibility
- Unevenly distributed impacts across customer subgroups (low-income, elderly, renters, etc.)

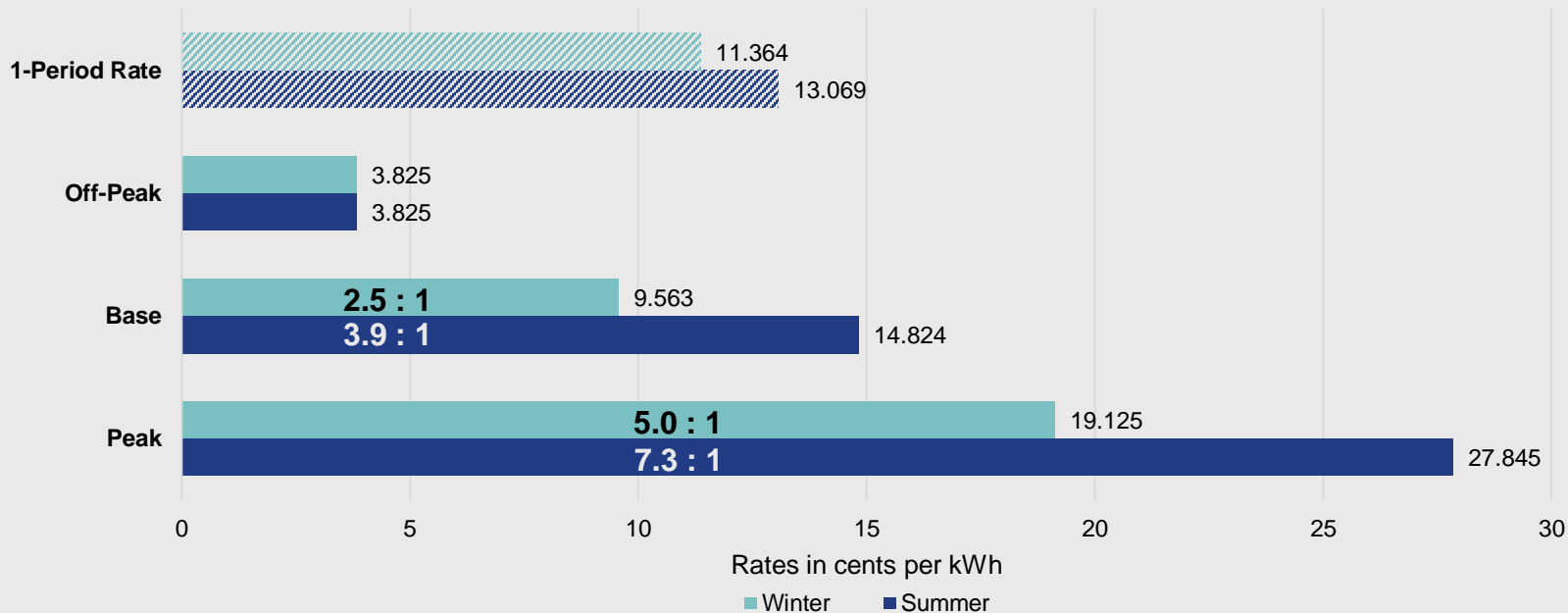


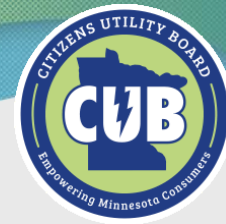
Xcel Pilot and Default Peak Period Selection





Proposed Default Residential TOU Rate Design





Northern States Power TOU Pilot

Benefits

- Peak/ coincident peak reductions
 - **Average peak demand savings of 1 – 1.6%**
 - **Up to 2% coincident peak demand savings**
 - **Minimal winter demand impacts**
- Reflective of utility generation costs
- Potential for lower customer bills
- Reduced emissions

Challenges

- Seasonal variation
- Customer education and acceptance
 - **Limited understanding of rate structure**
- Limited residential load flexibility
- Unevenly distributed impacts across customer subgroups (low-income, elderly, renters, etc.)



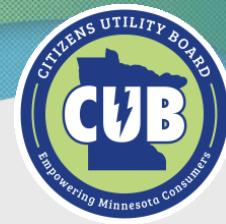
Northern States Power TOU Pilot

Benefits

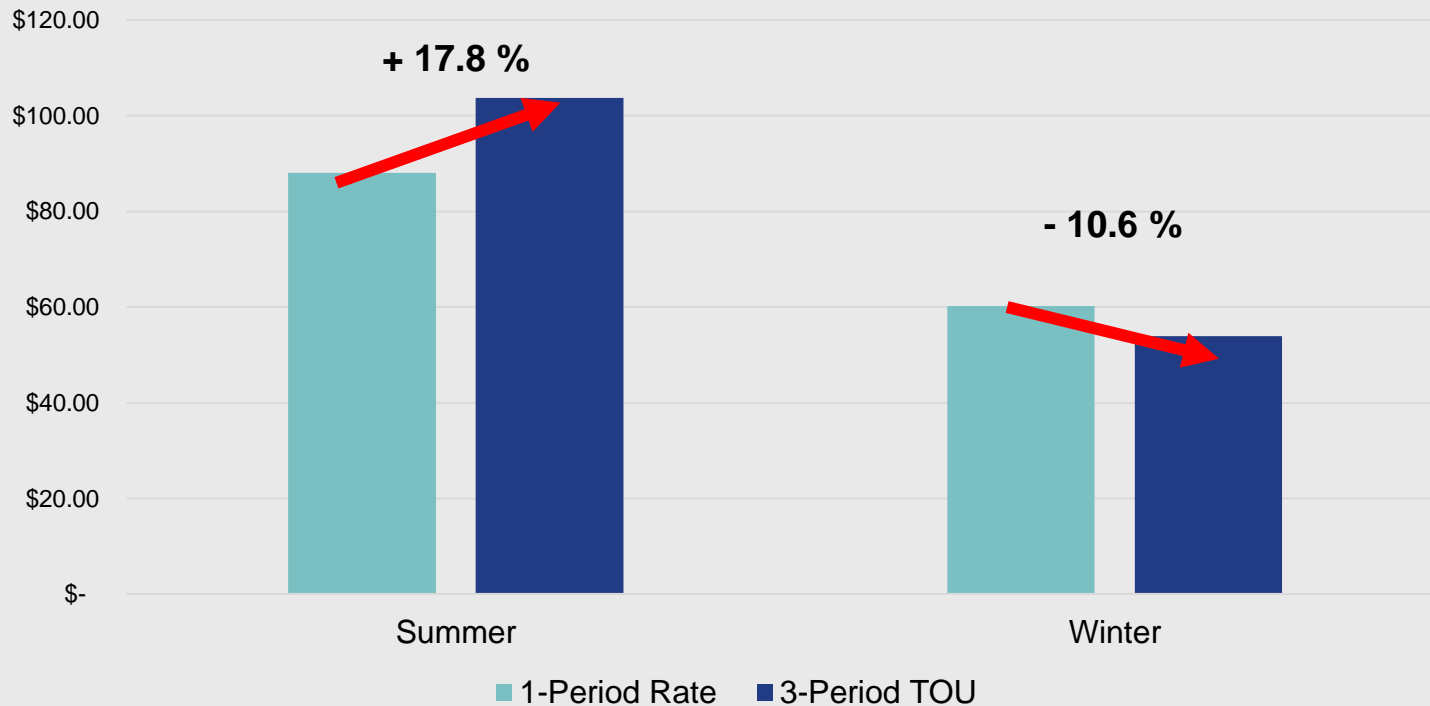
- Peak/ coincident peak reductions
 - **Average peak demand savings of 1 – 1.6%**
 - **Up to 2% coincident peak demand savings**
 - **Minimal winter demand impacts**
- Reflective of utility generation costs
- Potential for lower customer bills
 - **Minimal annual bill impacts**
 - **Variation based on season, geographic location, and customer subgroup**
- Reduced emissions

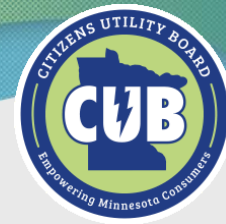
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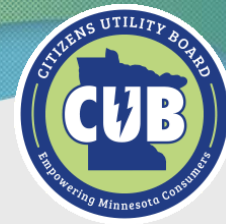
Estimated Average Monthly Residential Bill Impacts



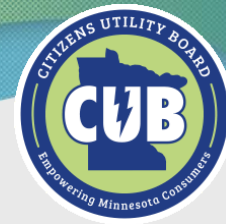


Potential Improvements

- Adjusting price differentials and reducing seasonal variation
- Gradual rate rollouts
 - Phased implementation based on customer bill impacts
 - Enrolling customers during the winter to allow households more time to adapt usage behavior prior to summer bill increases
- Extensive customer engagement and education
- Shadow billing tools for effective rate comparisons

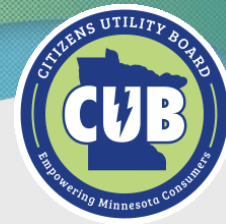


Natural Gas Resource Planning and Rate Design Considerations



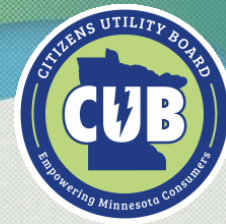
Gas Protection Plans

- Winter Storm Uri
 - \$660 million in extraordinary expenses incurred
 - ~ \$60 million disallowed in cost recovery for imprudent utility actions
- Required filings on how each respective utility would “improve or modify its practices to protect ratepayers from extraordinary natural gas price spikes in the future.”
 - Potential changes to interruptible tariffs, peak-shaving, storage dispatch

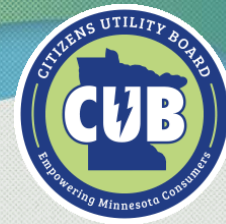


Gas Protection Plans

- Commission Order (Docket No. G-999/CI-21-135)
 - Directed utilities to update tariffs to ensure customers on interruptible rates understand the possibility for economic curtailment
 - Opened a docket to develop gas integrated resource plans
 - Focused on examining resource needs, evaluating demand- and supply-side resource options under a range of potential futures, and identifying an action plan for reliably serving customers and complying with policy objectives at the lowest reasonable cost
 - Established a stakeholder process for evaluating how rates could be modified to maintain affordable and equitable service



Questions?



Contact Information

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