Electrification in Minnesota: A State Perspective

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Overview

• Minnesota Electric and Natural Gas Utilities

• Minnesota Energy Efficiency Policy Framework

• State-led Electrification/Efficient Fuel Switching Initiatives

• Next Steps
Minnesota Electric Utilities

- 3 Investor-owned (62%)
- 47 Cooperatively-owned (23%)
- 126 Municipally-owned (15%)
Minnesota Natural Gas Utilities

• 5 Investor-owned (94% sales)

• 30 municipally-owned (6% sales)
Minnesota CIP Achievements

Electricity

Natural Gas
Current CIP Fuel Switching Policy

• Department order issued in 2005 prohibits inclusion of targeted fuel-switching projects in CIP.

• Department guidance issued in 2012 provided exception:
  • Electric utilities may provide direct space heating and domestic hot water energy savings measures to low-income delivered fuel customers and low-income small gas utility customers offered in conjunction with the Weatherization Assistance Program.
Proposed Legislation

HF 2208/S 2611 (2019) – Four-part criteria for efficient fuel-switching improvements:

1) Reduces cost and amount of source energy consumed on a fuel-neutral basis;

2) Results in lifetime net reductions of GHGs;

3) Is cost-effective on a societal basis; and

4) Does not increase utility peak demand or require significant new infrastructure.
Department of Commerce Initiatives

4. Electrification Related Research (ongoing)
Commissioned by DOC, completed by Michaels Energy in 2018. Provided MN stakeholders with:

1. Introduction to electrification
2. Minnesota policy review
3. National policy review
4. Summary of stakeholder interviews
5. Technology review
2. Fuel Switching Stakeholder Process

Topics discussed included:

• DOC authority to allow fuel switching
• Criteria for fuel switching
• How/would fuel switching advance CIP goals?
• How could fuel switching measures be included in CIP portfolios?

1. Examine benefits and concerns of increasing electrification as a tool for grid optimization, energy efficiency, and emissions reduction in Minnesota.

2. Convene series of stakeholder meetings to provide information, facilitate discussion and solicit recommendations on key electrification topics.
“Plans are useless, but planning is indispensable”

- Dwight D. Eisenhower
Considering stakeholder engagement, including stakeholder recommendations, project team will develop action plan detailing:

1. How Minnesota can most effectively leverage and support electrification

2. Metrics, policies and tools needed to determine if/ensure that electrification is beneficial for Minnesota
Overview of Stakeholder Process

- A series of public stakeholder meetings
  - 3 meetings in 2020, others later to review and release Action Plan

- Technical Advisory Committee of approximately 20 members
  - Focused analysis on Metrics, Technology, and Grid Modernization
  - TAC outcomes and learning reported back to public stakeholder group

- Written Action Plan capturing all stakeholder and TAC outcomes
  - Expected to be published in June 2021
4. Electrification Related Research

Air Source Heat Pumps

• Ductless cold climate heat pumps for multifamily applications (CEE, due 2022)
• Optimized installations of ASHP for single family homes (CEE, due 2022)
• Understanding market barriers and opportunities for ccASHPs in residential households (Cadmus, due 2020)

Heat Pump Clothes Dryer

• Field and market assessment of residential heat pump clothes dryers (Slipstream, due 2020)

Grid Optimization

• Market potential for saving energy and CO2 with load shifting measures (Slipstream, due 2020)
1. Continue to preserve/enhance efficiency efforts

2. Regulatory action v. legislative action

3. Electrification/efficient fuel switching in Minnesota should be part of larger CIP modernization
Thank You!

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