

# Electrification in Minnesota: A State Perspective

MEEA Midwest Energy Solutions Conference  
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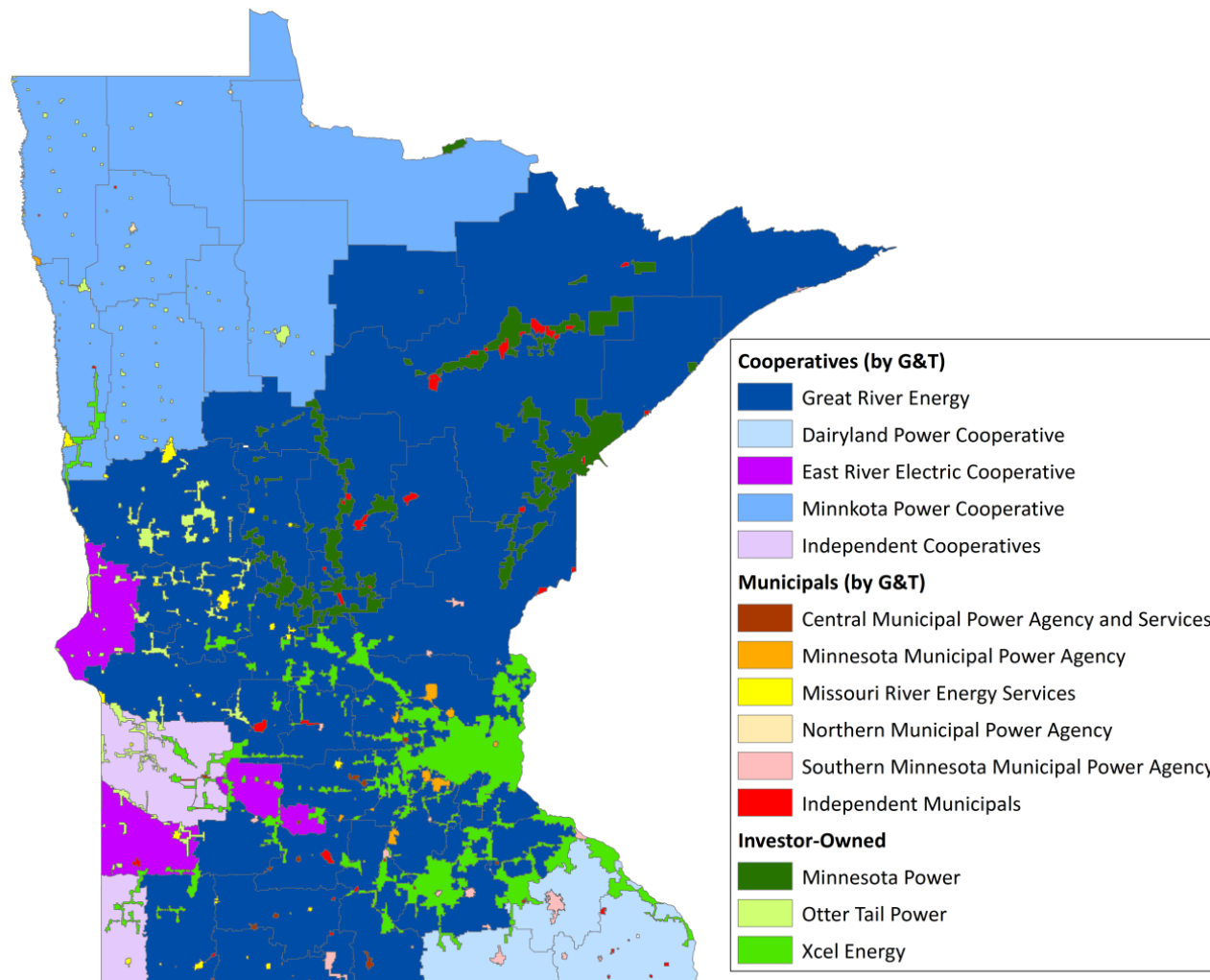
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Minnesota Department of Commerce

- Minnesota Electric and Natural Gas Utilities
- Minnesota Energy Efficiency Policy Framework
- State-led Electrification/Efficient Fuel Switching Initiatives
- Next Steps

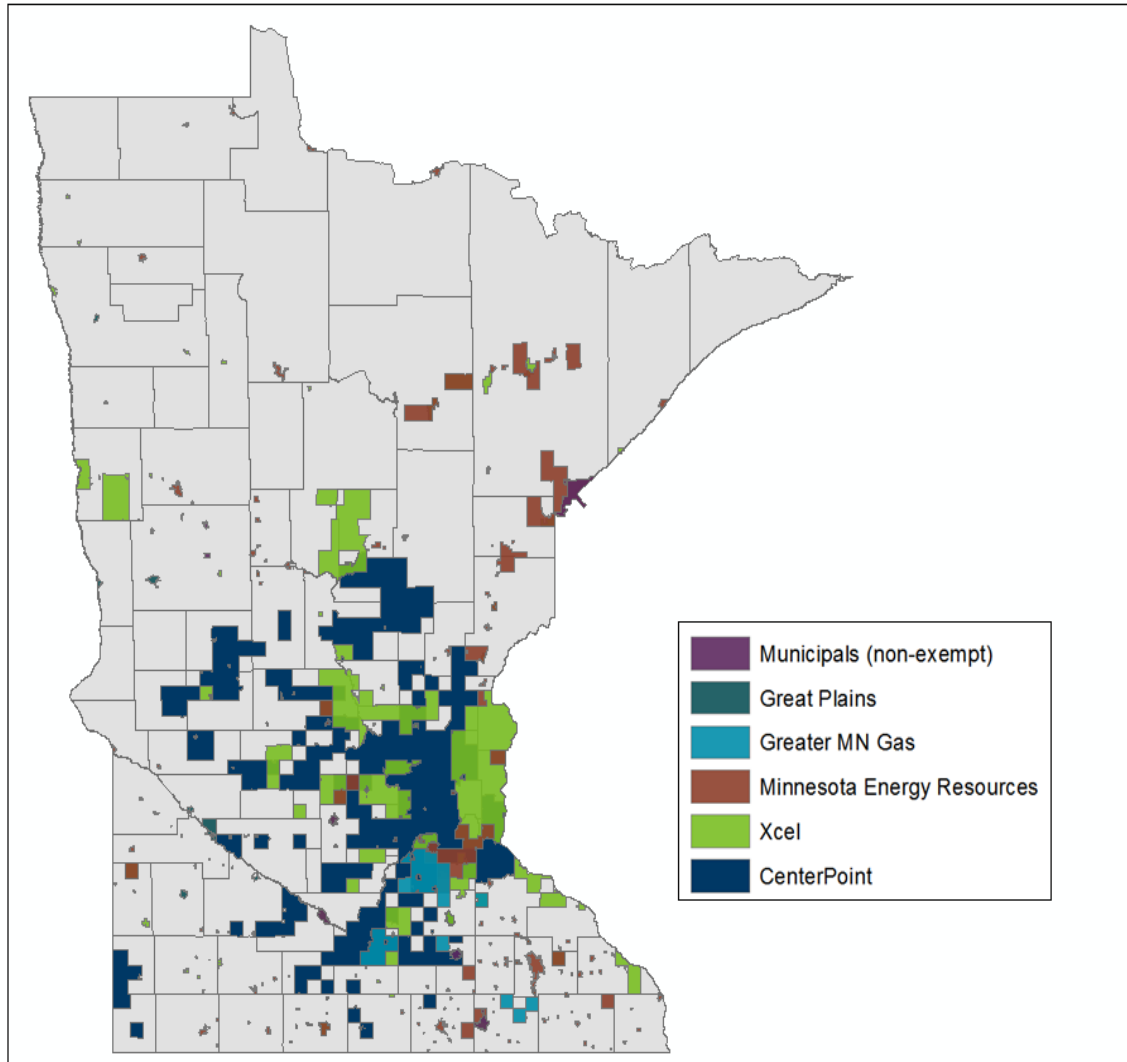


# Minnesota Electric Utilities



- 3 Investor-owned (62%)
- 47 Cooperatively-owned (23%)
- 126 Municipally-owned (15%)

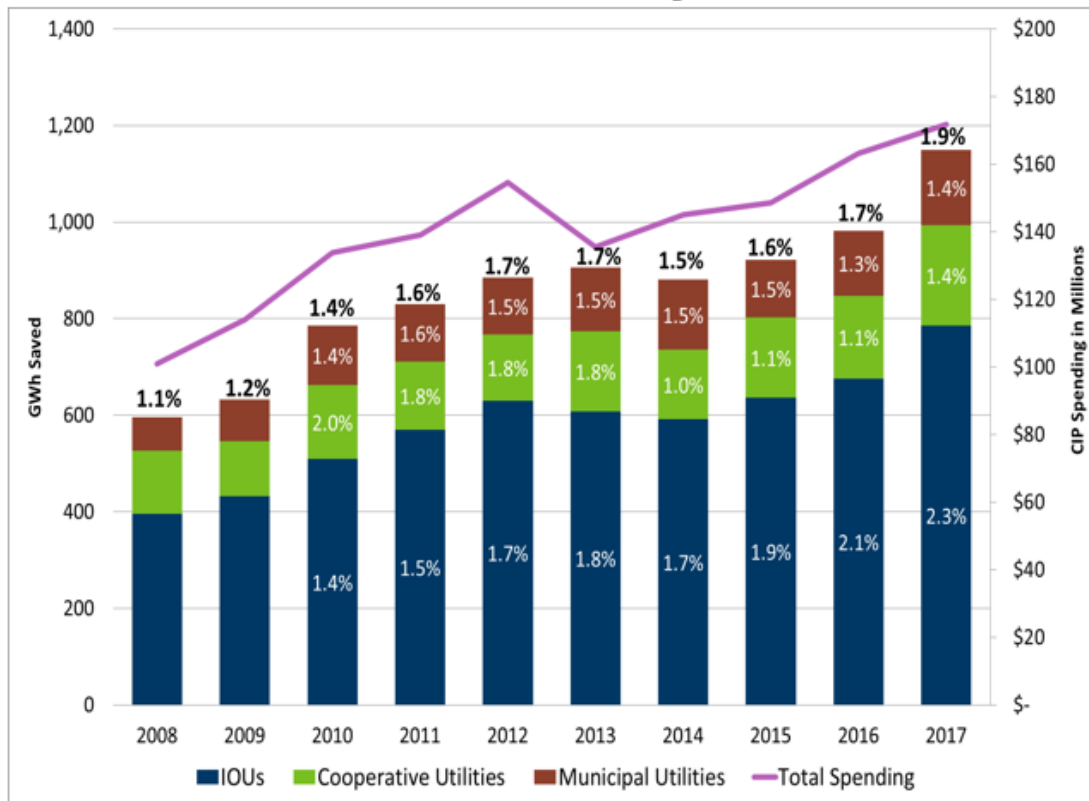
# Minnesota Natural Gas Utilities



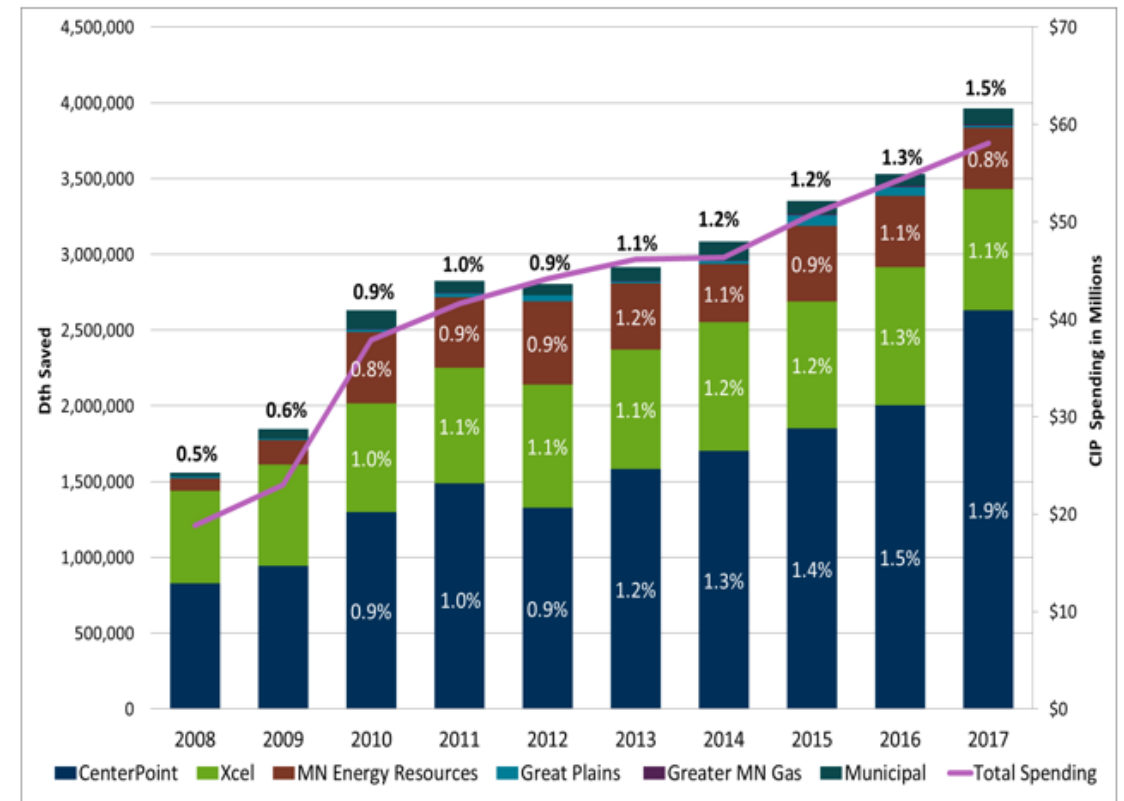
- 5 Investor-owned (94% sales)
- 30 municipally-owned (6% sales)

# 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

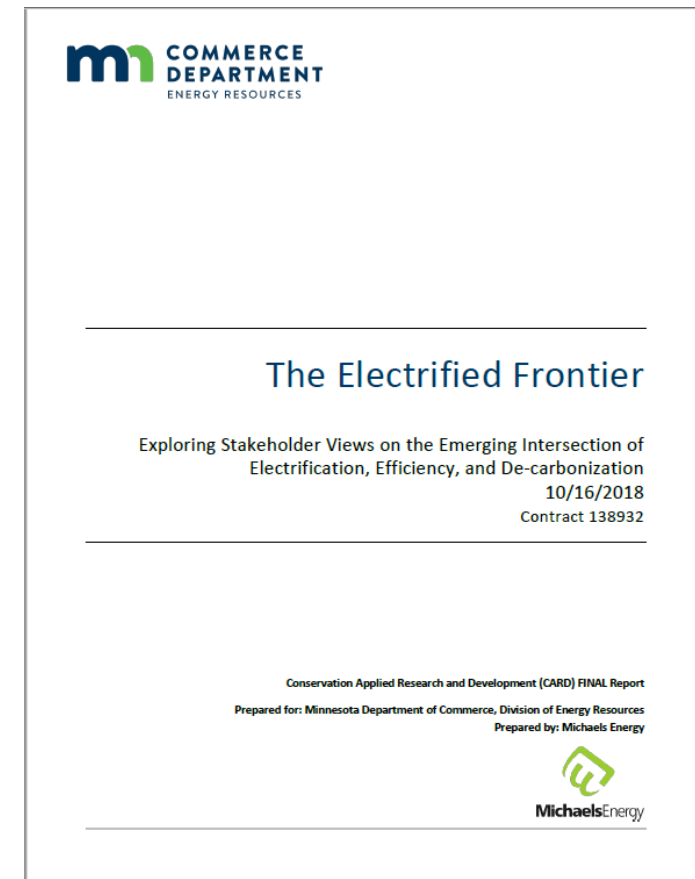
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1. Electrification White Paper (2018)
  2. Fuel Switching Stakeholder Process (2019-2020)
  3. US DOE Funded Electrification Action Plan (2019-2021)
  4. Electrification Related Research (ongoing)



# 1. Electrification White Paper

Commissioned by DOC, completed by Michaels Energy in 2018.  
Provided MN stakeholders with:

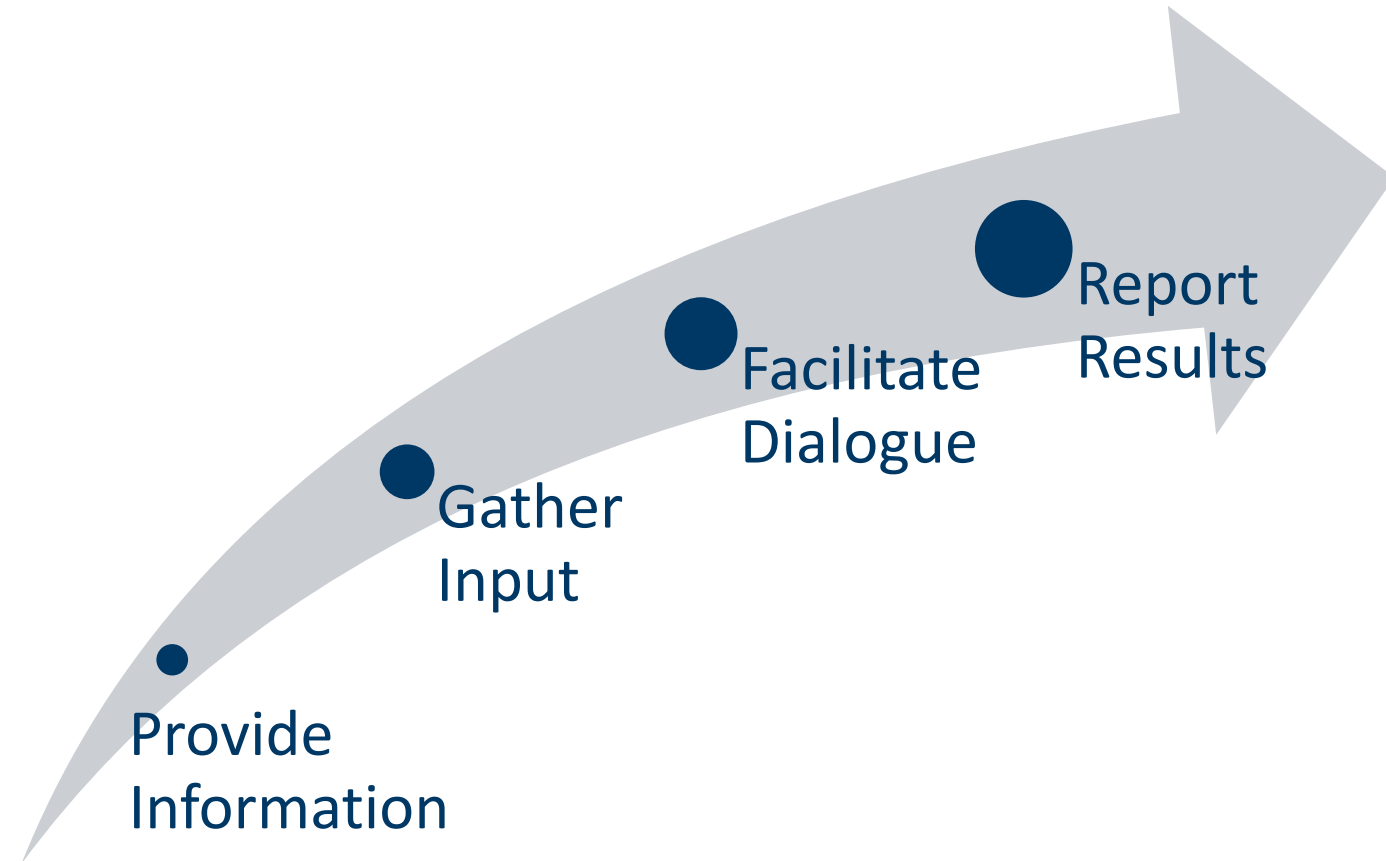
1. Introduction to electrification
2. Minnesota policy review
3. National policy review
4. Summary of stakeholder interviews
5. Technology review



## 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?



### 3. U.S. DOE Funded Electrification Action Plan

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

# Electrification Action Plan

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)

# Concluding Thoughts

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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