Minnesota Fuel-Switching Stakeholder Process

Facilitating informed dialogue for effective policy planning

BURR ENERGY

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COMMERCE DEPARTMENT
ENERGY RESOURCES

Minnesota Fuel-Switching Meeting #2
Fuel-Switching Priorities and Policy Considerations
Sept. 11, 2019 | Minnesota Housing Finance Agency

Today's Agenda

9:00 - 9:05 Welcome and Introduction

Jessica Burdette, Anthony Fryer, Minnesota Department of Commerce

9:05 - 9:45 Fuel-Switching Policy National Update

Martin Kushler, American Council for an Energy Efficient Economy (ACEEE)

9:45 - 10:00 Summary of Stakeholder Written Comments

Michael Burr, Burr Energy LLC

10:00 - 10:15 Break

10:15 - 11:45 Panel Discussion – Fuel Switching Priorities

Prepared Remarks:

- Katie Frye, Minnesota Power
- Mike Bull, MN CEE
- Jeff Haase, Great River Energy
- Roger Leider, MN Propane Assn
- Nick Mark, CenterPoint Energy
- Stakeholder Discussion

11:45 – 11:50 Conclusion, Housekeeping, Next Steps

I. Welcome and Introduction

Jessica Burdette
Manager, Energy Regulation & Planning

Anthony Fryer
Conservation Improvement Program Coordinator

II. Fuel-Switching Policy National Update

Martin Kushler, Senior Fellow, ACEEE

Martin Kushler directs numerous widely acclaimed national studies of utility sector energy efficiency policies and programs, and provides technical assistance to help advance energy efficiency policies in many states. He has been directing research and evaluation regarding energy efficiency and utilities for three decades, has been widely published, and has provided consultation to numerous states and the federal government. He previously directed the Utilities program for ten years. He joined ACEEE in 1998.

Prior to joining ACEEE, Marty was supervisor of evaluation at the Michigan Public Service Commission (the utility regulatory commission in Michigan) for nearly ten years. Duties there included directing all evaluation activities relating to electric and natural gas energy efficiency programs in the state.

STATES EXPLORING FUEL SWITCHING AS PART OF THEIR UTILITY ENERGY EFFICIENCY POLICY

Presentation for the Minnesota Dept. of Commerce
September 11, 2019

Martin Kushler
ACEEE

CONTEXT FOR THE FUEL-SWITCHING DISCUSSION

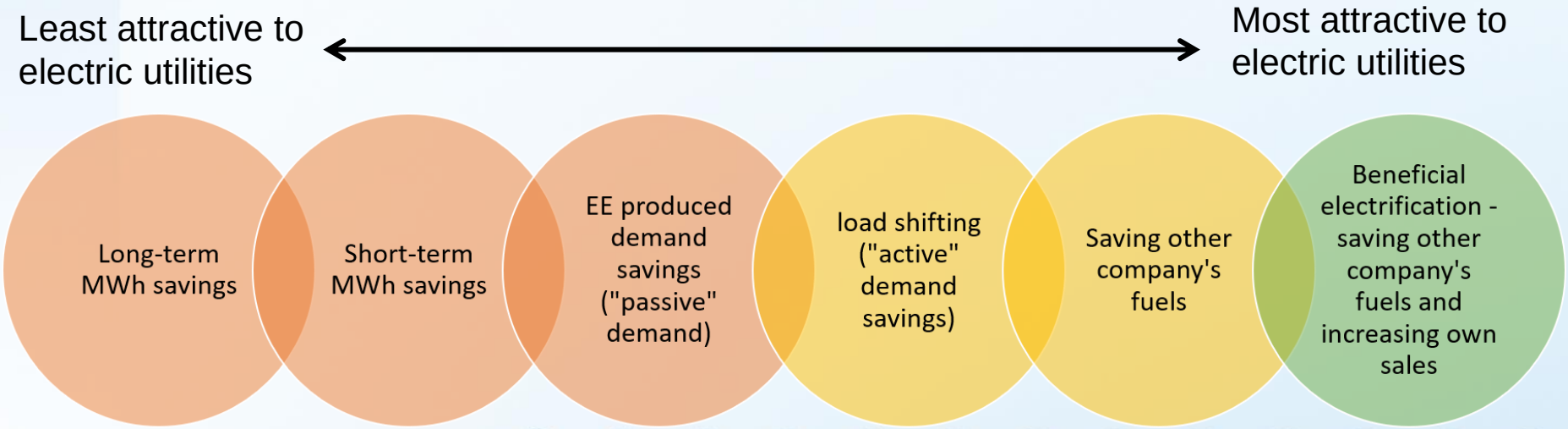
- Historically, states have tended to discourage/forbid utilities from pursuing fuel-switching
  - To discourage ‘load building’
  - To avoid inter-utility ‘turf wars’
- The concept of including fuel-switching (and electrification) in utility EE/DSM efforts is in its very early stages of development, in a handful of states
- Minnesota has a chance to be a real leader in establishing guidelines for doing this in a way that benefits ratepayers and society

OPTIMISM AND CAUTION

- There are many benefits to be gained by taking advantage of 'efficient fuel switching'
  - Economic
  - Environmental
  - Equity (e.g., providing EE benefits to deliverable fuel customers)
- But also important risks of undesirable impacts
  - Inefficient load building
  - Relative neglect of utility "own-fuel" energy efficiency, in favor of saving other providers' fuels
- Unfortunately, utilities have some inherent incentives to pursue those undesirable impacts

[Hence, strong guidelines are necessary]

TYPICAL UTILITY ORDER OF PREFERENCE REGARDING DEMAND SIDE OPTIONS



- These inherent utility preferences should influence
  - ✓ Whether any special performance incentive is needed, and
  - ✓ The relative amount of any such incentive

Fuel Switching Status Around the U.S.

Preliminary Analysis

- Don’t allow fuel switching: 6 states
- No apparent policy one way or the other: 10 states
- Allow fuel switching but don’t claim fossil fuel savings to energy targets or GHG reduction goals: 4 states
- Allow fuel switching (at least ‘pilots’) and recognize the savings in some form: 10

There are some states in each of these categories that did not respond to the data request. ACEEE is in the process of building on this data request and producing a policy brief detailing research on fuel-switching rules around the country (forthcoming, October).

ACEEE American Council for an Energy-Efficient Economy

N = 27 state respondents

STATES ALLOWING FUEL SWITCHING AND RECOGNIZING THE SAVINGS IN SOME FORM

California: Has a new “Fuel Substitution Test” (more later)

Connecticut: No clear policy, but utilities in 2019 are doing heat pump pilots targeting oil and propane homes.

District of Columbia: Fuel switching is allowed in some custom circumstances. Savings and electric increases would be applied toward the savings targets for the District.

Illinois: No clear policy, but it is possible to claim savings toward energy savings targets. Savings calculations for both CHP and ground source heat pumps are in the TRM.

Maine: Their Triennial Plan includes EE programs with funds for fuel-neutral measures save on residential heating and reduce GHG emissions.

Massachusetts: Starting in 2019, overall energy savings and emissions reductions from fuel switching measures will be accounted in the EE plans. Energy savings will be tracked by reporting MWh, therms, gallons, etc. along with MMBtu equivalent. GHG emission savings are measured on net energy savings & will reflect any benefits of fuel switching.

STATES ALLOWING FUEL SWITCHING AND RECOGNIZING THE SAVINGS IN SOME FORM

New Jersey: Allows heat pumps, consistent w/ Exec. Order establishing as a state goal to shift from fossil fuels to clean energy sources. All fuel savings are converted to Mmbtu and included in savings numbers.

Rhode Island: Currently only able to claim electric savings (if they exist) when a heat pump is installed. National Grid has requested to change program goals from therms (gas) and MWh (electric) savings to overall MMBtu savings in 2020 (including delivered fuel MMBtu savings). Currently doing a heat pump pilot.

Vermont: Fuel switching is eligible under the Renewable Energy Standard (Tier 3), but not currently included in EEU programs. Act 62 (2019) requires PUC to conduct a proceeding to consider whether all-fuels EE policy should be created.

Wisconsin: No explicit policy, but Focus on Energy can claim MMBTU savings if fuel switching is occasionally done on a Focus project.

MASSACHUSETTS

- 2018 legislation (HB 4857) added "**strategic electrification**" ("*measures that are designed to result in cost-effective reductions in GHG through the use of expanded electricity consumption while minimizing ratepayer costs*")
- 2019-2021 EE plans introduced new approach of "**Energy Optimization**", to "*reduce customers' total energy use, measured in MMBTU, in a fuel neutral manner*."
- Customers to be provided with information on all their energy options, and allow them to make informed decisions
- Specifically allows air source heat pumps, if they improve overall energy efficiency and reduce GHG

MASSACHUSETTS GOALS

MA goals are set in several categories:

Electric

- Net annual and lifetime MWh (w/o fuel switching) (2.7% annual)
- Net annual and lifetime MMBTU (can include fuel switching)
- Summer and winter peak MW
- CO2 reductions
- Net benefits

Gas

- Net annual and lifetime therms (1.25% annual)
- Net lifetime MMBTU (Can include fuel switching)
- CO2 reductions
- Net benefits

[**Note that distinct utility own-fuel EE savings requirements are preserved**]

CALIFORNIA

- CA's "3-prong test" for fuel switching was changed August 1st to a "**Fuel Substitution Test**", where resources "*must offer resource value and environmental benefits*". (It actually only requires no detrimental effect):
  - "*must not increase total source energy consumption when compared with the baseline*", and
  - "*must not adversely impact the environment compared to the baseline*"

  The prior measure level B/C requirement is also removed, now assessed at portfolio level like other EE measures

  Other requirements

  + "Fuel substitution measure and…. program **costs shall be funded by the ratepayers of the new fuel**, not ratepayers of the fuel being substituted."
  + Energy savings and goal accounting to be filed in a **separate accounting** from claims of other energy savings.

[NOTE: SB 350 doubling savings by 2030 only applies to electricity and gas]

MINNESOTA'S APPROACH IN "ECO" LEGISLATION (HF 2208)

+ Subd. 8.**Criteria for efficient fuel-switching improvements**
  1. Net reduction in cost and amount of source energy
  2. Net reduction in statewide GHG
  3. Cost-effective from societal perspective
  4. Doesn't unduly increase utility system peak or require significant new investment in utility infrastructure
+ **Energy savings and optimization policy goal**
  - Allows "efficient fuel switching utility programs" to contribute
  - Increases state policy goal from 1.5% to 2.5% savings
  - Maintains the 1.5% utility savings goal and the 1% minimum from "energy conservation improvements"
- **Other safeguards**
  - Requires reporting of "any annual energy sales or generation capacity increases resulting from efficient fuel-switching improvements"

CONCLUSIONS

- The concept of “efficient fuel switching” presents an opportunity for many potential benefits
- The concept needs to be carefully implemented, in order to avoid undesirable impacts
- States are in the very early stages of developing policies and procedures for ‘efficient fuel switching’
- Minnesota has put forth some of the best thinking on this issue, and has a chance to be a real national leader

III. Summary of Fuel-Switching Written Comments

Written Comment Period – July 30 - Aug. 22, 2019

Comment Period Questions for Stakeholders

1) During Meeting #1, several stakeholders discussed the need for a deeper analysis of various use cases and technology solutions that may result in utility fuel switching activity (between natural gas and electric utilities) that is prohibited for CIP incentives. Please describe:

a. Potential energy-saving measures that could result in fuel switching, and that you believe should be made eligible for CIP incentives;

b. Noteworthy benefits, factors, and considerations involving these use cases and technologies; and

c. Uncertainties and unintended consequences related to these use cases or technologies that should be addressed in the policy process.

2) Not all fuel-switching use cases involve switching between utility energy supplies. For example, implementing some energy-conservation measures can lead to increased utility sales and decreased sales of non-utility delivered propane and fuel oil. Please describe:

a. Use cases and technologies exemplifying potential energy-saving measures that you believe should be addressed in State energy policies (within CIP or otherwise);

b. Noteworthy factors and considerations involving these use cases and technologies; and

c. Uncertainties and unintended consequences related to these use cases or technologies that should be addressed in the policy process.

3) Criteria for allowing fuel-switching in CIP may be influenced by requirements and factors affecting specific high-impact use cases. Please comment on which fuel-switching use cases you believe will have the greatest beneficial impact on the State of Minnesota, and therefore should merit the highest priority in policymaking.

Written Comments Received from:

- Beneficial Electrification League (BEL)
- CenterPoint Energy
- City of Minneapolis
- Fresh Energy
- Great River Energy (GRE)
- Minnesota Center for Energy and Environment (MN CEE)
- Minnesota Center for Environmental Advocacy (MCEA)
- Minnesota Chamber of Commerce
- Minnesota Municipal Utility Association (MMUA)
- Minnesota Petroleum Marketers Association (MPMA)
- Minnesota Power
- Minnesota Rural Electric Association (MREA)
- Missouri River Energy Services (MRES)
- Otter Tail Power (OTP)
- Southern Minnesota Municipal Power Agency (SMMPA)
- Xcel Energy

Summary of Fuel-Switching Written Comments

General Comments

- Apply fuel-neutral approach to calculating energy savings
- Support proposed language in HF2208 and SF211 2019 legislation
- Department can and should take a broad view of term 'equivalent'
- Address transportation electrification in stakeholder meetings and CIP policy priorities
- Focus on policy priorities and criteria instead of technologies and use cases
- Legislative solution is preferable
- Expanding CIP to include transportation electrification should be authorized by Legislature
- Interference in competitive markets will create winners and losers
- Fuel-switching benefits vary depending on service territory and application, and change over time

Summary of Fuel-Switching Written Comments

1. **Utility fuel switching activity (between natural gas and electric utilities):**

   1a. **Potential energy-saving measures that could result in fuel switching, and that you believe should be made eligible for CIP incentives;**

- Electric heat pumps for space heating, domestic hot water, thermal process
- Electric storage water heaters coupled with renewables
- Electric thermal processes
- Natural gas heat pumps (in near future)
- Combined heat and power (CHP) systems

Summary of Fuel-Switching Written Comments

1. **Utility fuel switching activity (between natural gas and electric utilities):**

   1b. **Noteworthy benefits, factors, and considerations involving priority use cases and technologies;**

- Apply MN proposed legislative language; See CPUC 3-prong test revision
- Fuel-security, price stability, dual-fuel rates for many heat pumps
- Distinguish between partial and complete fuel-switching
- Municipal utilities unlikely to benefit from CHP or heat pumps
- Achieving GHG reductions may require statutory changes
- Comprehensive study of benefits and costs would help identify additional implications from fuel switching

Summary of Fuel-Switching Written Comments

1. **Utility fuel switching activity (between natural gas and electric utilities):**

   1c. **Uncertainties and unintended consequences related to priority use cases and technologies;**

- Reducing fuel oil and propane sales will increase costs for remaining customers who may not have options for natural gas or electric solutions
- Load-management programs needed to control electric load growth
- Gas-to-electric fuel switching could cause stranded assets
- Thermal energy storage reduces net efficiency and should not be eligible for efficiency incentives
- Traditional CIP solutions should be protected and prioritized
- Separate energy savings portfolio for strategic electrification

Summary of Fuel-Switching Written Comments

2. **Delivered fuels-to-utility switching activity**

   2a. **Potential energy-saving measures that could result in fuel switching, and that you believe should be made eligible for CIP incentives;**

- Heat pumps, EVs, electric lawn mowers and power tools; industrial processes; forklifts, golf carts, Zambonis, etc.
- Load-shifting measures support grid flexibility and emissions reductions, and merit CIP incentives if they yield overall savings compared to delivered fuels
- Delivered fuel-to-electric switching produces the same benefits as gas-to-electric fuel switching with better economics

Summary of Fuel-Switching Written Comments

2. **Delivered fuels-to-utility switching activity**

   2b. **Noteworthy benefits, factors, and considerations involving priority use cases and technologies;**

- Fuel-switching policy changes could address inequities in customers' access to CIP incentives
- The Department should prioritize equity issues in any policy review; low-income customers have the most to gain from fuel-switching benefits
- EVs support fuel diversity and cost stability and provide tools for the State to encourage GHG reductions
- DR-capable technologies yield system efficiencies and reduce costs

Summary of Fuel-Switching Written Comments

2. **Delivered fuels-to-utility switching activity**

   2c. **Uncertainties and unintended consequences related to priority use cases and technologies;**

- Omitting electric transportation in CIP effectively penalizes utilities for EV-charging load growth
- Calculating source metrics is relatively simple for electricity, but complex and uncertain for natural gas
- Heat rate and emissions metrics must change over time as electric fuels become cleaner and more renewable.

Summary of Fuel-Switching Written Comments

3. **High-impact use cases that merit highest priority in policymaking**

- Electric transportation and space heating, especially when switching away from higher cost and higher-emitting fuels
- Long-lived nature of space heating and water heating equipment merits fast action to capture full life-cycle savings

IV. Panel Discussion

Panelists

- Katie Frye, Supervisor, Customer Programs and Services
  Minnesota Power
- Mike Bull, Director, Policy and External Affairs,
  Minnesota Center for Energy and Environment
- Jeff Haase, Manager, Member Services and End Use Strategy
  Great River Energy
- Roger Leider, Executive Director
  Minnesota Propane Association
- Nick Mark, Manager, Conservation and Renewable Energy Policy
  CenterPoint Energy

IV. Conclusion

1. **Discussion recap and final comments**
2. **3rd Meeting: TBA**
3. **Stay tuned for updates**

Contact us

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