

# To Fuel Switch or Not to Fuel Switch: Policy Considerations for Utility Sponsored Programs

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# Objective

Purpose: Review issues and key policy considerations

Goal: Highlight the opportunities and challenges

Limitations: Policy focused only

# Background

- What is fuel switching and fuel choice?
  - > Space Heating
  - > Water Heating
  - > Cooking
  - > Drying
  - > Process Heating
- Changing Times....may bring a renewal
  - Aggressive energy efficiency and renewable resource standards
  - GHG legislation
  - Monetization of carbon
  - Decoupling

# Fuel Switching History

- Parts of the country (such as Vermont) – switching from electric space heat and domestic hot water to fossil fuels was popular in 1990's
- Vermont and New Brunswick also address fuel choice in new construction
- Never hit the mainstream
- Today – active only in select pockets and on minor scale due to increased cost of fossil fuels (VT, Puget Sound, PGE, WI FOE, New Brunswick, OPA)
- Fuel switching – historically the “third rail” in DSM planning

# Everyone Agrees...

- In high \$/kWh service territory, customer economics may be favorable
- Utility incentives accelerate conversions
- Lower emissions (assuming utility fuel mix is predominantly coal-based)
- Savings potential is sizeable

# Everyone Does Not Agree...

- Who should pay fuel switching incentives?
- Electric utility vs. gas utility? (not to mention unregulated fuels)
- In fully decoupled electric and gas service territory – perhaps these issues are easier....?
- What about customer self generation of electricity or major utility scale renewables?

# What about Externalities?

- Incorporation of carbon costs or other emissions impacts into B/C analysis
- If GHG is priority: Especially with large “clean” fuel mix (hydro, nuke, wind). Should a two-way street be considered – fuel switching from fossil fuels to efficient electric end-uses (particularly with customer sited renewables)?
- How does the utility supply mix, and time horizon of the analysis influence outcomes?

# To Be Continued...

- These questions are currently being investigated by Nova Scotia Power (NSPI), Canada
- NSPI also conducting residential sector fuel substitution DSM potential study
- Findings available in 2010



# Vermont-Case Study

- 1990's- Burlington Electric Department , Vermont
- 16,300 customers
- 2,500 had electric space heating
- Goal to convert 90% to natural gas (achieved 70% of goal)
- Average savings 8,000 kWh/customer; 7 to 40 kW savings/customer
- Average incentive: Hot Water ~\$900 ; Space Heat \$1,100
- First year cost of electricity savings: ~\$0.14 - \$0.28 per kWh
- Program TRC: 1.5
- Keys to success:
  - > Intense "hand holding": assisting with arranging contractors, site visits, etc.
  - > Required weatherization as a prerequisite

# Pugent Sound Energy-Case Study

- In 2007-2008 PSE performed comprehensive energy, environmental, and economic analysis of fuel switching.
- Analysis suggests that while fuel switching can provide long-term overall economic benefits, the utility may suffer a net negative financial loss.
- Currently offers incentives: space only - \$500-\$2,500; water only - \$950; space and water - \$1,950 - \$3,950
- Early results show that water heater conversions in homes that already have gas service dominate program activity (expedience due to existing gas line)
- First year costs ~\$0.55/kWh

# Conclusions

- Fuel switching has a high potential for meeting short-term EERS and emissions targets... but long-term uncertainty exists with ramped up RPS targets
- For service territory with different electric and gas utilities– changes in cost-recovery and rate-making should be explored so impacts are equitable.
- Require minimum weatherization standards prior to fuel switching, and emphasize cost-effective renewables (e.g. solar hot water)
- Don't dismiss fuel switching / fuel choice until you run all the numbers and have policy guidance.

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