

Fuel Switching Paper

Two perspectives: non-participating customers and participating customers with ground source heat pumps.

- 1) Non-participating- Rate Impact
 - Put together and look at the net impact on rate costs
- 2) Participating customers – cost to operate ground source heat pump (GSHP) for a particular utility customer
 - Compare existing gas bill with furnace (assuming old 80% efficient) to electric bill with GSHP. Calculations for natural gas and propane.
 - Compare new Energy Star 98% gas furnace to GSHP. Calculations for natural gas and propane.
 - Break into summer and winter load.
 - Net Present Value payback and Internal Rate of Return analysis.
 - Multi-stage analysis.
 - Estimate fuel costs over life cycle of systems.
 - Monte Carlo vs. base, low, and high scenario.
 - Determine fuel mix for generation fleet.
 - Determine what coefficient of performance we should use.
 - Determine upfront cost and paybacks.
 - Calculate carbon emissions/reductions.
 - Commercial vs. residential
- 3) Recommendation - determine proper incentives, rebates, and programs.