July 19, 2023

Heat Pump Cost Effectiveness

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Cost-Effectiveness Screening

- By Statute, the Department is required to ensure the three-year plans are cost effectiveness at the sector level.
- The Department also requires PAs to report on cost effectiveness at the program and core initiative levels.
- In determining cost-effectiveness, the Department relies on the Total Resource Cost ("TRC") test, which includes
  - All benefits related to the energy system(s) based on Avoided Cost Study modeling
  - non-energy impacts related to programs
  - societal value of GHG emissions reductions
  - costs of PA program implementation
  - costs borne by participants to install EE measures
- Individual measures/projects are not required to be cost effective

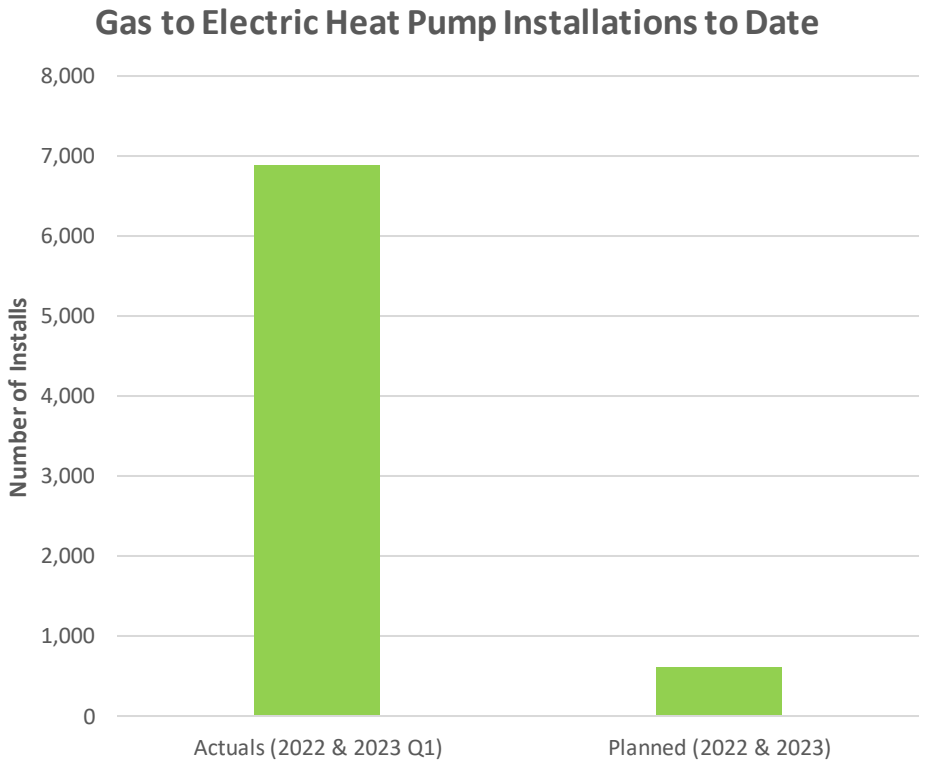
GHG Emissions Reduction Goals

- The Climate Act of 2021 established GHG emissions reduction goals for the 2022-2024 Energy Efficiency Three-Year Plans
- As recognized in the 2050 Decarbonization Roadmap, “combustion of natural gas, oil, and propane for building heating is the largest end use contributor to emissions in the buildings sector”
- To accomplish these ambitious goals, the PAs are aggressively promoting electrification, particularly where customer economics and building characteristics are favorable

Gas to Electric Conversion

- **The good news:** PAs are seeing high demand for natural gas electrification projects
- Demand for gas to electric heat pumps is running well above what was expected or planned for
- The majority of conversions are in weatherized homes

- **The not-so-good news:** Gas to electric heat pumps are not cost-effective for residential customers under the TRC
- The dominance of heat pumps in the Res Retail core initiative is driving the cost-effectiveness of the whole Res Existing Building Program and even the Residential sector for some PAs below 1.0



Department Guidance

- PAs are committed to the displacement of natural gas through electrification in pursuit of aggressive GHG reduction goals
- PAs are also committed to legislative and Departmental mandates to deliver programs cost-effectively and to minimize customer bill impacts
- Both the 2022 Term Year Report and expected mid-term modifications include requests for guidance from the Department on balancing the competing demands for cost-effectiveness, customer bill impacts and the pursuit of GHG reductions