



Representing America's Natural Gas Utilities

FINANCIAL AND OPERATIONAL INFORMATION SERIES

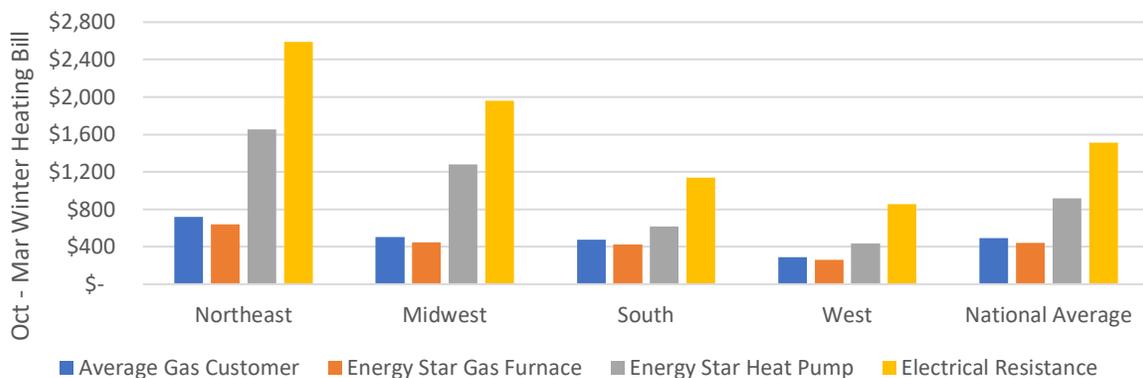
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ESTIMATED WINTER HEATING COSTS BY FURNACE TYPE

Findings

- The average natural gas home is estimated to spend \$494 this winter on space heating compared to \$919 with an 8.8 HSPF Energy Star heat pump or \$1,514 with an electrical resistance furnace.
- January is typically the coldest month of the year, experiencing most of the peak days for gas consumption in the residential market. Heating with natural gas is estimated to cost only \$111 this January compared to \$277 for a heat pump or \$397 with an electrical resistance unit.
- Heat pump performance and max output are reduced as outdoor air temperatures decrease. Throughout the winter season, 33% of all heat pump output may come from a backup resistance heater. Based on AGA's model, during January, that ratio could climb to 44%. Installing a much higher rated heat pump and oversizing its capacity could reduce dependence on backup heat but at higher installation costs.
- Compared to the 56 million households that heat primarily with natural gas, only 16.5 million households use a heat pump, and 32 million still use an electrical resistance furnace. Also, electrical resistance heating still occupies 28% of electric sourced space heating in new construction.
- This winter, customers using natural gas could emit 19% less CO2 compared to an 8.8 HSPF heat pump and as much as half the emission of an electrical resistance unit.

2020 - 2021 Winter Heating Cost by Furnace Type



Methodology

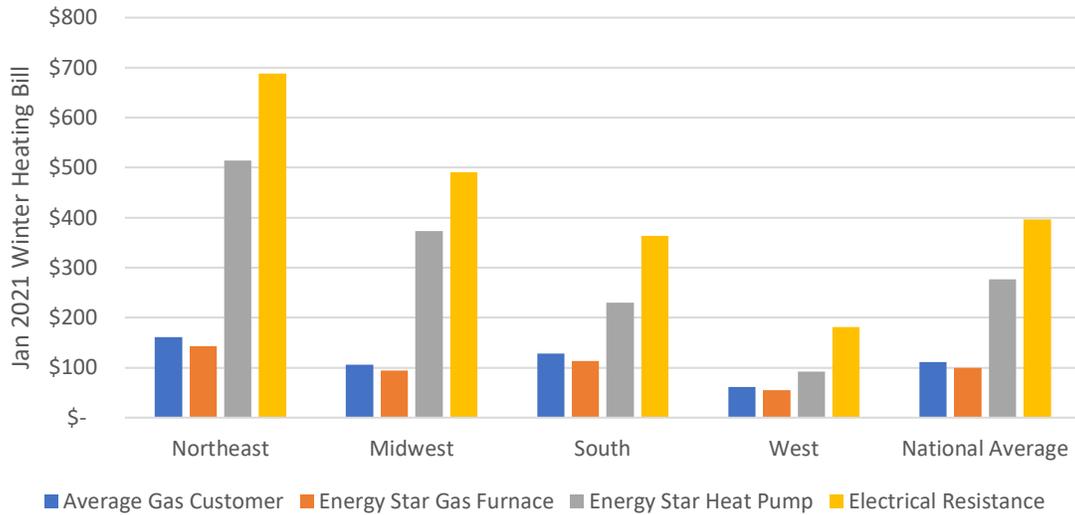
- Real heat pump performance for an 8.8 HSPF air-sourced Energy Star rated unit derived from the ASRAE handbook and NOAA local hourly weather data during the 2018 winter heating season. The 2018 winter heating season had an average HDD value of 3543, which closely matches the estimated 2021 seasonal HDD forecast of 3611. Nameplate efficiency of 8.8 HSPF was selected to represent the 16.5 million units in the existing market, not what could be installed.
- Average space heating consumption based on EIA monthly residential gas consumption by state. Baseload volumes assumed to be average consumption during July and August, with the excess consumption in other months considered to be the space heating load.

Source: Based on AGA modeling using data from Energy Information Administration, NOAA, American Housing Survey 2019, US Census Bureau Characteristic of New Housing 2018.

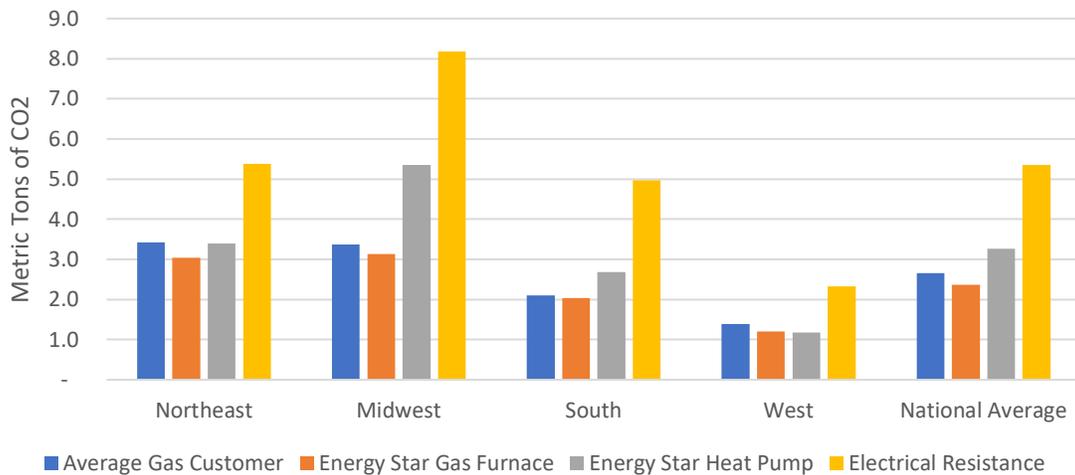
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January 2021 Winter Heating Cost by Furnace Type



2020 - 2021 Winter Heating Emissions by Furnace Type (Metric Tons CO₂)



- Emissions based on the most recent EPA eGrid data from 2018 for each of the NERC regions. The 2018 EPA eGrid numbers are a represented average for the entire year. They may be higher or lower depending on the time of year and what renewable generation resources are available.