

# HEAT PUMPS REDUCE COSTS FOR UTILITIES & CUSTOMERS

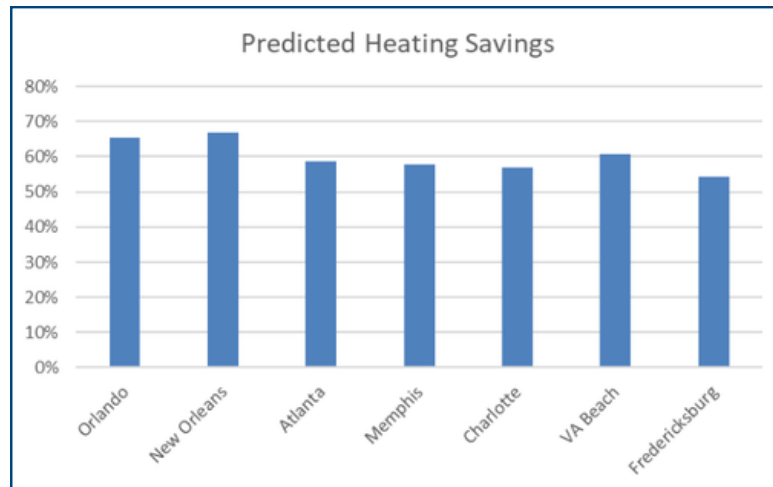


Central electric furnaces (aka straight cool) are the least efficient forced air heating systems, yet they are ubiquitous in the Southeast. Over 30% of households have electric furnaces, which use only electric resistance elements to produce heat.

Heat pumps have advantages for utilities and their customers in every climate zone and should be the highest priority retrofit measure. When utilities offer more compelling incentives for converting electric furnaces to heat pumps, benefits to utility load include peak demand reduction, total annual energy savings, and avoided costs. The Southeast Energy Efficiency Alliance (SEEA) and the Florida Solar Energy Center partnered on an analysis of the impact of heating system choice on annual energy use and cost and peak energy demand across the Southeast. The analysis included the influence of housing conditions including envelope air leakage, insulation, and duct leakage.

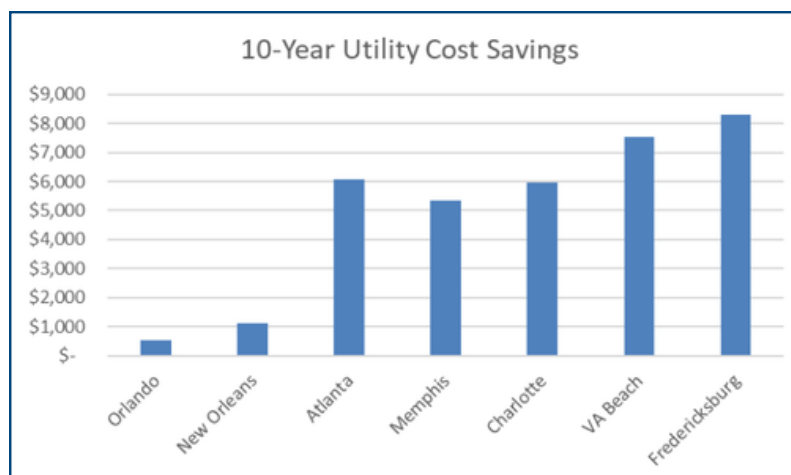
## HEAT PUMPS ARE COST-EFFECTIVE

For most of the South, it is cost-effective to choose a heat pump rather than an electric furnace at replacement or in new construction. Across the Southeast, heating energy savings are over 55% for a typical home. The analysis used current Federal minimum efficiency values for both appliances and current average electricity rates within states.



*Figure 1. Heat pumps will save at least 55% in heating compared to electric furnaces across the Southeast.*

North of Orlando, Florida, the energy cost savings for a heat pump covers the incremental cost in less than 10 years, easily within the lifespan of the appliance. In Atlanta, Georgia, annual energy cost savings is over \$600 and simple payback is less than two years. Utility incentives are important to decrease the incremental cost, especially in instances where the payback is longer than five years.



*Figure 2. Heat pumps are a cost-effective upgrade for customers in most areas of the South.*

## HEAT PUMPS REDUCE PEAK LOAD

In many regions heat pumps dramatically reduce peak load by eliminating the need for strip heat. In Orlando and New Orleans, the heat pump is predicted to satisfy 100% of the heating load without calling on emergency heat during typical seasonal weather.

## OLDER HOMES PRODUCE LARGER SAVINGS

Older homes, built prior to modern building codes, as well as manufactured homes built to HUD code, tend to be leakier and less insulated, which results in these homes having higher heating loads. These characteristics make older homes and manufactured homes prime candidates to actualize the energy savings and shorter payback period for an electric furnace to heat pump swap. In the Southeast, 36% of homes were built before 1980 and 72% were built before 2000, representing large potential savings, as represented geographically in Figure 3.

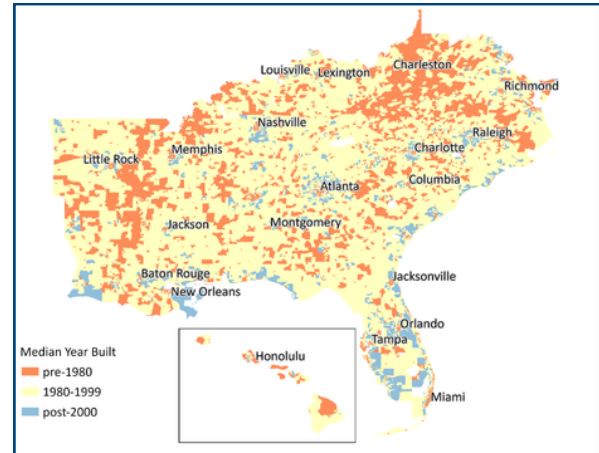


Figure 3. Median year built for homes by census tracts. Data estimates from U.S. Census 2023 American Community Survey (ACS).

Figure 4 depicts additional savings that can be expected over ten years when an electric furnace is swapped with a heat pump in an older home with a leakier envelope, leakier ducts, and less insulation. To secure even more energy savings and comfort benefits, it is recommended that the HVAC upgrade is combined with air sealing, duct repair, and insulation upgrades.

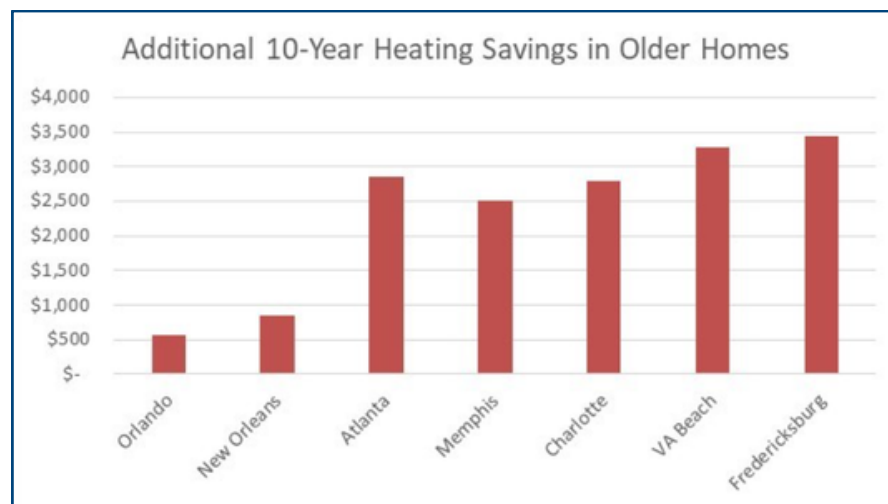


Figure 4. Additional heating savings over 10 years from switching an electric furnace to a heat pump in older homes across Southeast locations.

## **UNTAPPED POTENTIAL IN MANUFACTURED HOUSING**

Approximately 40% of all new manufactured homes are shipped to the southeast region and most of these homes are shipped with a central electric furnace. Incentivizing heat pumps at the time of purchase/order is an opportunity to benefit the household and increase grid resilience for decades to come.

## **HIGHER EFFICIENCY = GREATER SAVINGS**

Increasing heat pump efficiency above the federal minimum efficiency, including to variable capacity, increases annual energy and energy cost savings. ENERGY STAR most efficient units can save as much as 65% on heating and cooling compared to a minimum efficiency electric furnace with AC.



*This blog post was created in collaboration with FSEC (Florida Solar Energy Center) & SEEA (Southeast Energy Efficiency Alliance). Engage SEEA and our members to dive deeper into comprehensive solutions for the Southeast at [info@sealliance.org](mailto:info@sealliance.org).*