Highly Efficient Cold Climate Electric Heat Pumps Are Ready to Scale in New Jersey!

- **Heat pumps are an important part of the climate solution**. Leading states are moving aggressively to reduce carbon emissions economy wide. In addition to greening the electric grid and electrifying transportation, leaders have ramped up efforts to electrify buildings. Efficient electric heat pump heating and cooling, in combination with increased weatherization, stand ready to scale dramatically to play a key role in helping the Northeast states meet their ambitious climate goals.
- **The heat pump market is already growing rapidly and is primed for further growth.** The size of the regional residential air-source heat pump market[1] has grown over 350 percent since 2013, and continued to expand during the COVID pandemic. Manufacturers and installers continue to ramp up operations to serve this growing demand.
- **Heat pumps deliver comfort in cold climates.** The low-temperature performance of air-source heat pumps has improved greatly in the past decade, enabled by inverter-driven compressors, flash injection technology, and other advances. A recent study[2] conducted in New York and Massachusetts found that nine out of 10 consumers reported that they were extremely likely to recommend heat pumps in whole-house applications where the heat pump is the only heating source.
- **Heat pumps deliver efficient, affordable heating.** Numerous studies conducted across the region (New York/Massachusetts, Vermont, Maine) in recent years have demonstrated efficiencies ranging from 225-300 percent for air source heat pump systems. Ground-source systems can reach efficiencies of 500 percent. This means heat pump systems deliver 2-5 times more energy than they consume. Because of this high efficiency, homes using electric baseboard, oil, or propane for heat can save money by switching to heat pumps[3]. Efficient heat pumps are also cheaper to operate for cooling compared to existing systems (traditional window or central air conditioners). Air-source heat pump operating costs may be slightly higher compared to gas heating systems, although this comparison is dependent on fuel prices. If gas prices continue to increase as they have in the winter of 2021-22, the difference in operating costs may become negligible.
- **Strong program engagement will support the scaling of heat pump market.** Utility, state, and local programs have been effectively supporting building electrification in the region for years. Programs will continue to be useful in reducing the upfront costs of heat pumps, promoting home and building weatherization, and supporting the installer base to design and install systems effectively.
- **Regional Transformation**. Heat pump market actors across the region have been collaborating on market transformation solutions through the Northeast Energy Efficiency Partnerships (NEEP) Heating Electrification Market Transformation Initiative[4] since 2013. Reach out to learn more about opportunities to scale the heat pump market at ccASHP@neep.org.

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[1] https://data.ny.gov/Energy-Environment/HVAC-Market-Share-by-Efficiency-and-Capacity-Begin/tf22-v9nz ; Dataset is based on heating, ventilation, and air conditioning (HVAC) sales data reported to D+R International by Heating, Air-conditioning & Refrigeration Distributors International (HARDI) members participating in the Unitary HVAC Market Report

[2] Residential ccASHP Building Electrification Study, Cadmus; https://neep.org/sites/default/files/media-files/residential_ccashp_building_electrification_study_cadmus_final_031022_public.pdf

[3] Air Source Heat Pump Buying Guide, NEEP; https://neep.org/sites/default/files/resources/ASHP_buyingguide_5.pdf

[4] https://neep.org/smart-efficient-low-carbon-building-energy-solutions/air-source-heat-pumps