How do Heat Pumps Really Perform in Cold Climates?

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ABSTRACT

Heat pumps have been around for a long time, and they've been tested and have failed in cold climates—at least that is what many have come to think. This presentation will challenge the assumption that heat pumps do not work in climates such as those experienced in New York. We will explore recent developments in heat pump technology and how cold climate heat pumps that are on the market now operate in real life. The information presented will be based on measured performance of ground- and air-source heat pumps in single-family and multi-family homes in New York State and in similar climates.

BIOGRAPHY

Carina is an energy performance validation and data visualization expert with a decade of global experience in multiple renewable and distributed energy technologies. She leads several of Frontier Energy's endeavors related to air- and ground-source heat pumps, including analyzing and quantifying energy performance of air-source heat pumps and providing quality assurance for ground-source heat pumps in residential and commercial buildings.

Adam leads Frontier Energy activities with NYSERDA's Performance-Based Programs, verifying technical compliance with program rules and monitoring the performance of projects for the Industrial Process and Efficiency (IPE) program and the On-site Power CHP and ADG programs. Adam has over 20 years of experience in building energy audits, industrial energy efficiency, remote site monitoring, energy data analysis, building systems modeling, and computer system configuration and programming.

Nick focuses on sustainable building operations monitoring and verification through analysis and data collection. In his past 3 years at Frontier Energy, Nick has been deeply engaged in ground-source and air-source heat pump design reviews, inspections, monitoring, and performance validation analysis.