Northern Climate Specification

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What's the history of the heat pump water heater?

In the early 1980s, electric utilities in colder, northern portions of North America introduced heat pump technology into the residential water heating market. These programs have spanned three generations of heat pump technology and produced detailed measurement of technical performance and consumer acceptance. The experience gained from these programs has also yielded definitive direction about key consumer needs, as well as important technical criteria for proper application of this technology in cold climates.

In 2008, the ENERGY STAR program released its first specification for residential water heaters, which included qualifying criteria for heat pump water heaters (HPWHs).

In 2009, several major manufacturers launched integrated HPWH units in North American markets which were ENERGY STAR qualified but failed to address key northern climate issues.

How are Northern climates defined?

The specification is intended for climates with 4,000 heating degree days or higher and average ambient temperatures, below 60 degrees Fahrenheit. This equates roughly to locations in North America with latitudes above 40 degrees, herein referred to as Northern climates, including Idaho, Montana, Oregon and Washington.

What does the specification offer manufacturers?

The specification provides guidance to manufacturers who are interested in developing products that not only meet ENERGY STAR criteria but are able to provide high levels of consumer satisfaction and energy performance in cooler, northern climates. The end goal of this effort is to ensure that the North American introduction of this new generation of HPWH products will be as successful as possible in order for HPWHs to become the standard product for the electric water heating market.

What is NEEA's role?

According to the Northwest Power and Conservation Council's 6th Power Plan, heat pump water heaters have the potential to save the region nearly 500 average megawatts (aMW) by 2029, the equivalent to powering 381,500 homes each year. To achieve these savings, NEEA is collaborating with its utility partners to influence manufacturers to develop a product that is appropriate for northern climates and to implement a market intervention strategy to overcome market barriers to adoption of this product. To do this, NEEA leverages existing market relationships and the combined market power of the Northwest to serve as a buying-

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block with manufacturers, retailers and distributors to increase product availability and develop and refine a product channel. By helping the market voluntarily adopt a northern climate heat pump water heater, NEEA is working towards federal standards that would make the Northern Climate Specification standard practice in heat pump water heaters.

What's the region's utility involvement?

The specification is intended as a foundational document for utility program efforts that will work in partnership with manufacturers to accelerate market adoption of HPWHs for northern climates. Using this specification will help improve market acceptance of HPWHs and ensure the savings materialize.

What's the ultimate goal of the specification?

The objective of this effort is to successfully accelerate the innovation and adoption of HPWH products in the Northwest, such that HPWHs become the standard product for the electric water heating market. This specification will also provide vital input into the federal standards process to incorporate northern climate considerations into DOE and EPA standards.

Is the most current version of the Northern Climate Specification available?

The current version of the specification can be found here.

What products on the market currently meet the Northern Climate Specification?

A list of products that have been tested and found to be compliant with the Northern Climate Specification can be found here.

For more information please contact:

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