

**EXH. EAB-15
DOCKETS UE-220066/UG-220067
2022 PSE GENERAL RATE CASE
WITNESS: ED BURGESS**

**BEFORE THE
WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION**

**WASHINGTON UTILITIES AND
TRANSPORTATION COMMISSION,**

Complainant,

v.

PUGET SOUND ENERGY,

Respondent.

**Docket UE-220066
Docket UG-220067**

**FOURTEENTH EXHIBIT (NONCONFIDENTIAL) TO
THE PREFILED RESPONSE TESTIMONY OF**

ED BURGESS

**ON BEHALF OF NW ENERGY COALITION, FRONT AND CENTERED, AND
SIERRA CLUB**

JULY 28, 2022

Department of Energy

DOE Announces Breakthrough in Residential Cold Climate Heat Pump Technology

JUNE 17, 2022



[Energy.gov](#) » DOE Announces Breakthrough in Residential Cold Climate Heat Pump Technology

Lennox's Cold Climate Heat Pump Unlocks Potential for Domestic Manufacturing of Clean Energy Heating Products that Slash Energy Bills for Americans

WASHINGTON, D.C. — The U.S. Department of Energy (DOE) today announced that American heat pump manufacturer Lennox International became the first partner in the U.S. Department of Energy's (DOE's) Residential **Cold Climate Heat Pump Technology Challenge** to develop a next-generation electric heat pump that can more effectively heat homes in northern climates relative to today's models. Cold climate heat pumps (CCHPs) can provide high-efficiency heating in freezing temperatures without producing greenhouse gas emissions and can save families as much as \$500 a year on their utility bills. This achievement is a massive step toward providing reliable clean heating and cooling for millions of American families through domestically produced CCHPs, which is crucial to reducing energy costs and achieving President Biden's goal of a net-zero carbon economy by 2050.

"DOE's Cold Climate Heat Pump Challenge calls on American businesses to make heat pumps more effective at heating and cooling, more efficient in their energy use,

and more attractive options for consumers—so more households can unlock \$500 in savings each year on utility bills. With this newest prototype, Lennox has answered that call,” said **U.S. Secretary of Energy Jennifer M. Granholm**. “Tapping into the emerging clean energy market is a huge economic opportunity that will bring a bolstered manufacturing sector, good paying jobs, and a brighter, cleaner future to Texas and communities across America.”

Space conditioning and water heating account for 46% of building emissions and over 40% of primary energy used in American residential and commercial. They also account for 42% of all building energy bills and 56% of household energy bills each year.

DOE launched the CCHP Technology Challenge in 2021 to accelerate development and commercialization of next-generation heat pumps by supporting American innovation and manufacturing. Lennox International, headquartered in Richardson, Texas, developed the first prototype that achieved the Technology Challenge’s standards about a year ahead of schedule. The prototype delivers 100% heating at 5°F at double the efficiency, and 70% to 80% heating at -5°F and -10°F. DOE’s Oak Ridge National Laboratory validated the performance and efficiency of Lennox’s prototype.

Lennox is one of nine manufacturers competing in the CCHP Technology Challenge. Its product and others that meet the CCHP Technology Challenge will undergo trials in cold climate regions over the next two years to demonstrate performance, efficiency, and comfort when applied in the field throughout a winter. Deployment and commercialization are planned for 2024. Utility partners will work with DOE to establish consumer incentives to encourage adoption, and state partners will develop education and outreach campaigns to do the same. More than 20 utilities, cooperatives, and state agencies have committed to the Challenge.

The Cold Climate Heat Pump Technology Challenge is part of the **Initiative for Better Energy, Emissions, and Equity** (E3 Initiative) run by DOE’s **Building Technologies Office** in the **Office of Energy Efficiency and Renewable Energy**. DOE is partnering with the U.S. Environmental Protection Agency and Natural Resources Canada on this effort.