EXH. EAB-10
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**

NINTH 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

BEFORE THE WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

Dockets UE-220066 & UG-220067
Puget Sound Energy
2022 General Rate Case

NWEC DATA REQUEST NO. 123:
REQUESTED BY: Jaimini Parekh

Re: Gas System Costs

Please refer to slide 26 in "PSE Resp WUTC DR 146_Attach C." This slide describes the different heat pumps included in PSE/E3's modeling work, and it defines "LowT99" heat pumps as "cold climate heat pumps." However, in the actual model provided by PSE in "PSE Resp WUTC DR 146_Attach B," the note at the top of the "RESHAPE All Years" tab states that "LowT99" heat pumps actually have a lower COP at 5 degrees F than "HighT99" heat pumps (1.75 vs. 2.5). In addition, for the modeling scenarios that use "HighT99" heat pumps rather than "LowT99," the incremental electricity sector costs decrease, which is what one would expect if heat pumps were operating more efficiently at lower temperatures. Can you resolve this discrepancy?

Response:

Puget Sound Energy disagrees with the characterization that there is a discrepancy. The naming convention Energy and Environmental Economics, Inc. ("E3") used in the model refers to the relative efficiency and sizing of different types of air-source heat pumps.

The "Low" vs "High" portion of that convention refers to the performance curve of the heat pump, expressed as the systems' coefficients of performance as a function of outdoor temperature. Both systems are considered cold climate heat pumps per the Northeast Energy Efficiency Partnerships ("NEEP") Cold Climate Heat Pump Product Specification, where the "Low" system is consistent with less efficient systems that are reported to NEEP by manufacturers and the "High" system consistent with best-in-class systems reported to NEEP. Notably, all systems on the NEEP listing are substantially more efficient than current federal minimum appliance standards.

The label "T99" refers to the sizing of the heat pump. "T99" refers to an arrangement where the heat pump is sized to cover the full load of the building up to the 99th percentile coldest temperature in the 40 years of weather data used by E3. In colder temperatures, the heat pump continues to produce heat, but is supplemented by electric resistance heating.

With that, the “HighT99” system is more efficient than the “LowT99” system and therefore has less impact on electric system infrastructure needs and cost.