



## HVAC TECH TIP: HEAT RECOVERY AND VENTILATION - A TRUE WIN/WIN

At the Network we've seen recent growth in the application of heat and energy recovery ventilators (HRVs and ERVs) as part of commercial building retrofits. Installing either is a great way to improve indoor air quality (IAQ) and lower the cost of providing outdoor air for ventilation.

Ventilation has been a key part of building health for decades. It's recently been brought to the forefront of the commercial HVAC system discussion because of the COVID-19 pandemic and increased wildfire activity in the region. Proper ventilation involves bringing in ample outdoor air to replenish oxygen and limit or remove moisture, odors, smoke, dust, airborne bacteria, and carbon dioxide. A downside of bringing in outside air is that it needs to be conditioned and that requires energy.

HRVs and ERVs are a great way to ventilate while limiting the associated energy penalty. They do so by exchanging heat between incoming outdoor and outgoing exhaust air streams via a heat exchanger. Heat recovery can be integrated into heating and cooling equipment or come as standalone and bolt on solutions. The latter are typically comprised of a casing, blower motors, a heat exchanger, and controls. We are focusing on these as they're becoming increasingly prevalent in the market as additions to Ductless Heat Pump (DHP) and Variable Refrigerant Flow (VRF) retrofits. DHP and VRF retrofits can often qualify for utility incentives.

You may be asking yourself; how do I size an HRV? They're primarily rated based on two factors, airflow and sensible recovery efficiency (SRE). SRE is the measure of how effectively heat is transferred between the outdoor and exhaust air streams and uses a percentage scale. ASHRAE Standard 62.1: Ventilation for Acceptable IAQ is what is most used to determine appropriate outdoor air volume. Section 6: Ventilation Procedure details how to calculate air volumes for both specific zones and an entire system. Overviews of the processes can be found at the following links: [Zone Calculations](#) and [System Calculations](#) (courtesy of Trane). Additionally, many manufacturers have their own calculators and can help with sizing if needed.

"This was an exciting and unique opportunity to vastly reduce Pacific Seafood's energy usage," says Andy Gerde a field specialist with the Trade Ally Network NW.

Biennially, BPA provides Jefferson County PUD with about \$900,000 in reimbursements toward energy efficiency improvements. These dollars help pay for energy savings projects like Pacific Seafood's lighting upgrade, along with others in businesses and homes throughout Jefferson County PUD's service territory. BPA's funding efforts support its mission to save electricity while meeting the needs of the Northwest without acquiring additional generation.