



These are the large, 30+-year-old boilers that were replaced in JBLM's decentralization project, which was incentivized by PSE's Custom Retrofit Grants program.

Efficient boiler upgrades at JBLM cut \$184k from annual energy costs

A case study of PSE's Custom Retrofit Grants program

Customer background

Joint Base Lewis-McChord (JBLM) is a combined Army-Air Force military base in Pierce County, Wash. It supports more than 40,000 service members; 14,000 civilian employees; and more than 90,000 family members, veterans and retirees.

Energy challenges and opportunities

In the early 2010s, it was noted that JBLM could realize substantial energy and water savings by decentralizing a high-temperature hot water and steam plant originally built in 1954. Doing so would eliminate the need for 10 miles of distribution piping used to transport domestic hot water and space heating for offices, shops and barracks.

Steam systems are complex, relatively inefficient and maintenance-intensive. Additionally, the miles of antiquated, in-ground supply piping created large distribution losses of heat and water before reaching end-use facilities.

Energy savings at a glance



GAS SAVINGS

319,083 therms

That's enough to supply 250 homes for a year.



PSE INCENTIVES PAID

\$1,595,415



ENERGY COST SAVINGS

\$184,916

* Energy and cost savings are annual.

“PSE incentives for energy-efficient upgrades are the gifts that keep on giving. This one was a huge win for JBLM. It offsets costs for future energy-saving projects that will earn more PSE incentives, all of which save us significant energy costs now and in the future.”

Matt Schreck
Energy program manager at JBLM

How PSE helped

Through PSE's Custom Retrofit Grants program, we provided incentives to install localized medium- to high-efficiency hydronic boilers and infrared radiant space-heating equipment in 58 JBLM buildings. The new equipment replaced large, 30+-year-old boilers and eliminated miles of failing distribution lines.

The overall project was contracted by the Army Corps of Engineers and funded under the Energy Resilience and Conservation Investment Program, an energy-conservation component of the Military Construction Fund. Design began in April 2018, construction started in November 2019 and the project was completed June 2021. The cost of the project was more than \$10 million.

“We involved PSE right away on this project. It was an expensive job, but the incentive factored greatly into our payback analytics and reinforced our decision to move forward.”

Patrick McLaughlin
Energy engineer at JBLM

Decentralizing the system and installing smaller, high-efficiency boilers in each of the buildings previously served by one plant saved energy and increased resiliency by reducing the single point of failure that the central plant posed. Placing heat-generating equipment closer to the loads they serve is also far more efficient than transporting the heat through lengths of piping, resulting in transportation loss.

This project also included some heating controls upgrades in 16 motorpool buildings with multiple garage bays. Each bay now has its own radiant heater and dedicated thermostat so that only the bays in use are heated.

“JBLM ensures that we incorporate energy efficiency through a strategic lens of resilience, efficiency and affordability. PSE rebates are a cohesive way to bring all three together, because every dollar received in utility rebates is reinvested in new energy-conservation and resiliency projects.”

Matt Schreck
Energy engineer at JBLM



Thirty-seven localized new boilers like this one were installed across the JBLM campus as part of the decentralization project.



In May 2022, PSE presented the Commanding General of Installation Management Command and other JBLM leadership with an incentive check for nearly \$1.6 million.

Results

Early energy savings met projections during the winter of 2021–22. The overall efficiency gain with the new equipment was greater than 20 percent. The new systems offer better energy tracking for the Army, reduced maintenance and the ability to monitor operations remotely.

With the nearly \$1.6 million incentive that JBLM received from PSE for this project, JBLM's energy program is planning to install smart meters on more than 150 existing buildings. This will allow for additional energy-saving projects that will in turn produce more savings and incentives in the future.

Start your energy-management journey

Learn more about PSE's Custom Retrofit Grants program at pse.com/customgrants. Or get in touch with the program directly by emailing grantapplications@pse.com.



pse.com/customgrants

