

A Look at a Long-Term Energy Strategy in the Pacific Northwest

A Strong Tradition of Success in Resource Efficiency Management

THE PACIFIC NORTHWEST enjoys some of the lowest energy rates in the nation and relatively mild weather. Both of these factors work against energy efficiency project economics, yet over time Navy installations in the Northwest have

the Secretary of the Navy. Smaller commands outside the installation fence lines, including Naval Hospital Bremerton and Naval Magazine Indian Island, also participate in the Northwest Energy Program, and have also received awards and recognition.

lighting systems (such as light-emitting diode parking lot lights and high output fluorescent fixtures in industrial high bays), and even base-wide steam decentralization at the Keyport location, which reduced their total energy consumption by more than 30

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excelled in energy and water conservation performance.

The installations, all located in Washington State, are:

1. Naval Base Kitsap, which has several sites including Bremerton (which includes Puget Sound Naval Shipyard), Bangor, Naval Undersea Warfare Center Division at Keyport, and Manchester Fuel Depot
2. Naval Air Station Whidbey Island
3. Naval Station Everett

Each installation has received multiple energy awards and recognition from

Naval Facilities Engineering Command Northwest is tasked with planning and executing the Region's energy program, and shares some of their strategies for success.

Efficiency Projects

Energy and water efficiency projects are absolutely essential to reducing consumption. Navy installations in the Pacific Northwest have a long history of executing efficiency projects using every funding source that is available. The projects have included a full range of energy technologies such as sophisticated controls, state-of-the-art

percent. The key is to develop and execute a considerable volume of new projects each and every year.

Additionally, Pacific Northwest installations constantly look out for low-cost, locally-fundable improvement projects which over time add up to substantial results. The projects incorporate simple technologies such as lighting controls (occupancy sensors, photocells, adding switches), leak detection and repair (steam, compressed air and water lines), insulation, heating and air conditioning system tune-ups and weather-stripping. Much of the total water

savings achieved over the past nine years came from installing low-cost temperature-activated freeze protection valves on pier-side water distribution lines. The savings were so dramatic that the water utility company called to see what was going on.

Structured for Success

Core members of the Navy’s Energy Team in the Pacific Northwest are the regional energy program manager and support staff, the installation energy managers and the resource efficiency managers, who provide support to the regional energy program manager and installation energy managers. Additionally, team members reach out to other departments, such as asset management and capital improvements, through cross-functional team meetings focused on integrating energy improvements into all aspects of facility management. Team members also work with the building managers, who are tasked by a regional instruction to monitor energy performance in their buildings. Installation energy managers and resource efficiency managers provide training and support to ensure that building managers can spot problems and initiate corrections.



The Department of the Navy’s energy mascot, “BRITE,” was developed in the Pacific Northwest, and still makes regular appearances to generate interest in energy issues.

Energy Culture & Behavior

The Navy’s Energy Team in the Pacific Northwest helps keep energy top-of-mind for Sailors and civilians throughout the Region by its weekly energy and water

Major Energy Projects Awarded

THE FOLLOWING TABLE shows that Navy installations in the Pacific Northwest have awarded a steady stream of major energy and water efficiency projects over a nine-year period.

Year Project Awarded	Project Cost	Annual Cost Avoidance	Annual Energy MBTU* Savings	Annual Water KGAL* Savings
FY04	\$15,864,225	\$2,702,646	356,629	0
FY05	\$13,013,469	\$1,976,696	286,781	0
FY06	\$8,935,574	\$1,540,738	169,834	0
FY07	\$6,699,803	\$679,577	70,091	2,928
FY08	\$10,632,530	\$1,109,931	97,458	0
FY09	\$13,899,743	\$1,303,092	112,993	48,666
FY10	\$27,274,367	\$3,889,869	263,243	9,203
FY11	\$14,958,804	\$1,695,044	129,881	4,557
FY12	\$6,337,064	\$822,705	37,207	8,532
TOTAL	\$117,615,579	\$15,720,297	1,524,117	73,886

*MBTU = million British thermal units, KGAL = thousand gallons

Low Cost Activity Fund Projects

THE FOLLOWING TABLE shows that smaller (less than \$100,000), locally-funded projects can add up to significant savings over time.

Year Project Awarded	Project Cost Totals	Annual Cost Avoidance	Annual MBTU Savings	Annual KGAL Savings
FY04-12	\$14,553,915	\$6,651,102	641,229	571,891

conservation newspaper column, the “Energy Edge,” and by sending weekly energy tips for inclusion in installation plans-of-the-week. Additionally, energy tips with eye-catching graphics are sent to building managers across the Region to post and distribute every two to four weeks. Each energy tip sheet includes local energy team contact information and a local hotline number so that all-hands know how to report energy waste. The Department of the Navy’s energy mascot, “BRITE,” a brightly-colored compact fluorescent lamp costume, was developed in the Pacific Northwest, and still makes regular appearances throughout the Region to generate interest in energy issues.

The Naval Station (NAVSTA) Everett Energy Team has provided considerable training in new technologies to operations and maintenance personnel, and as a result they often install a more efficient technology rather than a one-for-one replacement when equipment fails. Naval Station Everett is also a leader in using alternative transportation fuels and sustainable building practices. They have eleven Energy Star certified buildings.

Energy experts talk of the benefits of commissioning building systems—making sure they are operating as designed—but few facility managers actually budget for the

A key component of the Northwest’s Energy Program is the team of resource efficiency managers.

Incorporating New & Underused Technologies

Pacific Northwest installations participate in the Navy’s Technology Validation Program using successful technologies such as oil-free magnetic-drive chiller compressors and aerosol duct sealing technology, in select facilities. (For more information, see our sidebar entitled, “The Basics About the Technology Validation Program.”) Pacific Northwest installations already make significant use of newly-developed light-emitting diode lighting technology, and incorporate commercially viable technologies rarely seen on government property, such as high speed roll-up doors that open and close automatically when forklifts approach and pull away from the door.

process. Commissioning of existing facilities has been identified as the technology that could cost-effectively save the most energy Navy-wide, based on energy audits performed in accordance with the Energy Independence and Security Act of 2007. The Pacific Northwest’s Bremerton naval complex, which accounts for approximately half of the Region’s shore energy use, has a Certified Commissioning



The Basics About the Technology Validation Program

THE TECHNOLOGY VALIDATION Program demonstrates commercially available technologies that are reported to save energy, but are not currently in widespread use in the Navy. Over the years, the Technology Validation Program has validated the performance of a number of emerging technologies. Navy and Marine Corps personnel can contact Team Lead Paul Kistler to discuss specific technologies at paul.kistler@navy.mil or 805-982-1387. For more information about the Technology Validation Program, visit <https://portal.navfac.navy.mil/portal/page/portal/centers/nfesc/energy/tab5894331>. This web site is on the Naval Facilities Engineering Command portal, and requires a Department of Defense Common Access Card plus a Naval Facilities Engineering Command portal account for access.

Professional assigned to continuously monitor energy systems and facilitate corrections as needed.

Resource Efficiency Managers

A key component of the Pacific Northwest's Energy Program is the team of resource efficiency managers. These contracted energy specialists survey facilities and facilitate outside surveys, develop energy and water efficiency projects, manage energy and water data and prepare metric reports, support data calls, suggest operation and maintenance improvements, assist with project measurement and verification and assist to foster a culture of energy and water conservation in support of the Region and installation energy management goals. The Navy's first resource efficiency manager was deployed at the Pacific Northwest's Naval Undersea Warfare Center Division Keyport in 1999, and the program has been so successful that it has expanded and been adopted Navy-wide.

What's Next

Moving forward, the Pacific Northwest Energy Team will continue to use these proven strategies for success. Expanding commissioning efforts throughout the Region



Energy efficient cooling towers are part of upgrades being done at Naval Undersea Warfare Center Division, Keyport.

Pat Hardesty

and incorporating even more sophisticated controls will be top priorities. An industrial control system aimed at integrating systems and securing networks provides the ability to correlate energy-related data in ways that have not been possible before. A project scheduled for award this year will add a number of facilities to the industrial control system, further integrating systems, securing networks, and revealing energy saving opportunities. ⚓

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