



Solar Energy Is Only Natural for Windward Community College

Challenge

Windward Community College (WCC), located in Kāneʻohe, Hawaii, is a public community college and part of the University of Hawaii system. The administration wanted to transition to renewable energy to reduce operational costs and contribute to the state's climate action goal to become 100% renewably powered by 2045.

Solution





Working with Honolulu-based SunSpear Energy, WCC transformed three of its campus parking lots into shaded parking, with the help of SunPower® solar carports.

Benefits

The elegantly designed solar carports provide shaded parking for 250 vehicles while generating 1.87 megawatt hours (MWh) of clean energy per year. Together with energy efficiency measures, going solar will offset 70% of the campus' electricity use in addition to removing 33,000 metric tons of carbon dioxide from Hawaii's environment.



Quick Facts

-  **1.4 MW**
Total System Size
-  **SunPower® Long-Span Carport**
Installation Type
-  **\$392,784**
Estimated First-Year Savings
-  **\$17,860,554**
Savings Over 25 Years



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Prior to the energy conservation measures, 80 to 90% of campus energy needs were from air conditioning. However, with the installation of solar, the campus will generate much of that energy itself.

Making the Net Zero Switch

Windward Community College is known for its strengths in Hawaiian studies and natural sciences as well as fine arts and vocational training. Keeping tuition costs affordable is central to WCC's mission to enrich the lives of students and community members.

Being in harmony with the natural environment is also part of the school's mission; in fact, one of the core values of WCC is "to care for Hawai'i and the planet." So when the administration began researching ways to be a better environmental steward, transitioning to solar energy was only natural.



In 2015, Hawaii became the first state to commit to becoming 100% powered by clean energy by 2045. The state legislature and University of Hawaii system have also established a collective goal of being "net-zero" by 2035. This means that the campuses will aim to produce as much energy as they use, with on-site generation coming from renewable sources.

A Decade of Energy Due Diligence

Building solar-powered carports on campus parking lots is Phase II of an energy plan that originated more than 10 years ago. Phase 1 included energy conservation measures such as improving air conditioning, heat and ventilation systems, as well as lighting improvements.

The carport system is located in three different parking lots, each of which had their own design challenges. SunSpear connected the systems to the campus' electrical system and to the local grid. An energy storage system with 6 MWh of potential output was installed to give the campus the flexibility to dispatch power generated by the sun during the day by storing the solar power for later use. The battery also helps reduce peak energy demand charges, regulates and improves power quality, and provides other benefits to the campus' electrical infrastructure.

Because the solar carports are being paid for by the money they save, student tuition will not be affected by the costs. In fact, the solar plus energy storage system is expected to reduce the HECO utility bill by an estimated \$17.8 over the next 25 years.

Best of all, WCC's solar carports are expected to offset up to 70% of campus electricity needs while eliminating the carbon dioxide equivalent of 36 million pounds of coal burned. That's a legacy its students can hand down to the next generation – and beyond.

SUNSPEAR Energy
525 Kokea St., C6,
Honolulu, HI 96817
sunspearenergy.com
(808) 439-6446