OutBack POWER™
an EnerSys company

Hawaii Schools Heat Abatement

OFF-GRID CASE STUDY

SYSTEM SPECIFICATIONS	
Location	Hawaiian Islands
System Power	12 to 36kW
Components	• (77) OutBack Radian inverter/chargers • (155) OutBack FM80 charge controllers • (554) SimpliPhi Batteries

OVERVIEW

Hawaiian schools found themselves in a predicament with air conditioning and heat abatement until they partnered with OutBack and SimpliPhi to install solar PV systems and battery storage. In some cases, the temperatures exceeded 100°F, creating a difficult learning environment for both teachers and students. Hawaiian state lawmakers budgeted $100 million in 2016 for heat abatement of school classrooms. Deploying air conditioning to the classrooms seemed to be the obvious solution, but in 2010, one Hawaiian elementary school saw its electric bill increase more than two-fold after the installation. To avoid skyrocketing utility bills, the current heat abatement program chose OutBack Power's Radian Series inverter/charger with lithium-ion batteries from Simpliphi Power. The combination of solar PV systems and energy storage has improved the learning environments of 1,300 classrooms in 88 schools and decreased in the school's electricity bills.

CHALLENGE

- Significant and costly upgrades if schools wanted large scale air conditioning
- Adding air conditioning would overburden an already power-starved grid
- New AC systems need to operate nearly off-grid under restrictive utility support times

SOLUTION

- Install OutBack inverter/chargers and charge controllers and a SimpliPhi battery bank
- PV systems will power individual classrooms and/or building sections for direct connection to the AC units, minimizing significant modifications to the existing electrical system
- Fully-compliant UL 1741 SA system operates off-grid within Hawaii's narrow grid connection windows

OUTCOME

- Over 1,300 classrooms in 88 schools on the islands of Ohau, Maui, Molokai, Kuai and the Big Island have had air conditioning installed as of December 2017
- School's overall electric bill has decreased by 6%—even with the added AC loads
- Thousands of school children and teachers have a cool and comfortable learning environment

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