

## SHOWCASE PROJECT: LENDLEASE: ISLAND PALM COMMUNITIES

### SOLUTION OVERVIEW

Lendlease owns and manages approximately 40,000 homes for military families across the U.S. at 19 military installations under the Military Housing Privatization Initiative (MHPI). Island Palm Communities (IPC) in Oahu, Hawaii is one of the largest communities in Lendlease's MHPI portfolio, with nearly 8,000 homes.

Island Palm Communities is a master-planned development that offers 3-, 4-, and 5-bedroom floor plans. As part of its efforts to continually modernize the homes, the community sought out solutions that would improve the comfort for residents as well as provide operational savings, given the high cost of energy in Hawaii.

### SECTOR TYPE

Commercial, Residential

### LOCATION

Oahu, Hawaii

### PROJECT SIZE

5,800 homes

### SOLUTIONS

In 2018, IPC partnered with the joint venture (JV) company [Energy Solutions and Security \(ESS\)](#), a 50/50 Joint Venture between Lendlease and Ameresco to modernize more than 5,800 homes. The ESS JV provides turnkey energy efficiency improvements and new renewable energy solutions, including this [\\$150 million energy security and modernization project](#) that included the installation of over 5,300 new super high-efficiency water source heat pump HVAC systems and an additional 6.45 MW of rooftop solar to add to existing systems. The project was designed to reduce grid consumption at IPC by one-third and is the first step in a coordinated, multiphase strategy to reduce the carbon footprint and provide renewable energy solutions and resiliency to the residential community.

Island Palm Communities expects to reduce total energy consumption by 32M kWh, including the offset from the new rooftop solar systems, resulting in 21,961 metric ton of avoided CO<sub>2</sub> under the ESS agreement and progress towards their goal of becoming a zero-energy community. During each year of the contract, the improvements will reduce electric utility costs by \$6.9M with over \$2.7M in savings from operational improvements.

Since their participation with the Better Buildings Challenge starting in 2014, Island Palm Communities has implemented long-term strategies to achieve a 30% EUI reduction and this new project will continue that success:

### **Water conservation**

- To conserve water within the large-scale community, IPC is utilizing dual-flush toilets, high-efficiency showerheads, and aerators in new and renovated homes.
- Reducing water usage across the military installation can also lead to a reduction in energy-related to treating, pumping, and heating the water.

### **Sustainable design methods**

- Highly efficient HVAC systems to improve resident comfort, reduce mechanical outages, and standardize HVAC system types across the portfolio to lower O&M costs.
- Provide housing envelope improvements, weatherization sealing, attic insulation, domestic water conservation, residential and street lighting improvements through LED lighting technology.

### **Renewable Energy**

- Solar installations across the community – totaling nearly 23 MW.
- The ESS program will provide an additional 6.45 MW of rooftop solar.

Estimated savings from the water and sustainable design projects is estimated to be \$6.9 million in electricity savings, \$800,000 in water savings, and \$2.7 million in operations and maintenance savings.

### **OTHER BENEFITS**

In addition to the savings in energy and water use, the project will enhance the energy security and resiliency for the military housing community with additional renewable power. Newer equipment also has the additional benefit of reduced maintenance and increased comfort for residents.

Note: The ESS project is “offsetting” an additional 8.3 million kWh with new solar PV systems, but that doesn’t impact the total project consumption amount.

### Annual Energy Use

(Source EUI)

Baseline(2016)



**Energy Savings**

**22%**

### Annual Energy Cost

Baseline(2016)



**Cost Savings**

**\$6.9 million**



Island Palm Communities