



Case Study

Customer
A Hawaiian Beach Resort

Location
Lihu'e, Hawaii

Industry
Lodging

Product
Aegis W 350
Mark I HX Module
Lync Storage Tanks



Hawaiian Resort Boosts Efficiency with Aegis and an Advanced Hybrid Solution

What the Client Needed

In recent years, the rising costs of propane in Hawaii have left many property owners seeking alternative solutions for their energy needs, particularly for domestic water heating. A leading provider of Energy Savings Performance Contracts (ESPCs), offered a unique approach: they enable building owners to implement energy-saving upgrades with zero out-of-pocket costs by structuring partnerships based on shared energy cost savings.

The ESPC company approached the beach resort and partnered with them on the project to upgrade its domestic hot water and chiller systems. The ESPC company was tasked with finding a solution that would reduce reliance on propane and integrate smoothly with the resort's existing infrastructure. The resort needed a water heating system to meet the high demands of its 350 guest rooms, extensive laundry facilities, and large commercial kitchen – without a costly upgrade to its existing electrical service. Additionally, the resort required a solution that could work with the existing storage tank to efficiently serve two separate buildings on-site.

The Solution

For this project, Lync designed an innovative hybrid water heating solution that included an Aegis water-source heat pump water heater, one 300-gallon Lync storage tank, reuse of the existing storage tank, and three AERCO Innovation water heaters for backup. This customized system was engineered to satisfy the resort's substantial domestic hot water demands, which included supporting 350 hotel rooms, five high-capacity commercial washing machines, and a busy commercial kitchen. Two separate recirculation loops were integrated into the system, operating at 120°F and 140°F respectively to meet varied hot water requirements throughout the property.



The Aegis water-source heat pump water heater was designed to operate with the chiller water loop, which runs at a temperature of 50-55°F. This setup not only provided the necessary hot water for the resort but also contributed additional cooling to the chiller water loop, benefiting the cooling system of the hotel. This dual-purpose design leveraged the high efficiency of the Aegis heat pump, achieving a combined COP (Coefficient of Performance) of an impressive 6.4 by optimizing the energy used for both cooling and heating.

The resort required high redundancy for uninterrupted service, and with Lync being part of the Watts family of brands, the ESPC company was able to integrate three AERCO Innovation high-efficiency gas-fired water heaters. These units serve as a seamless backup for the heat pump system, utilizing the existing propane hookups to ensure continuous hot water availability even during peak demands or maintenance periods. This hybrid solution provides a system with low operating costs, a high level of redundancy, and a lower first cost than a multiple heat pump plant.



Return on Investment

The project was a resounding success, providing the beach resort with an upgraded chiller and domestic heat pump water heating system—all at no upfront cost. Since startup, the heat pump and storage solution have reliably served as the primary domestic hot water source. Josh Jackson, Sales Engineer for Lync's representative in Hawaii, noted, "It is extremely rare for all HVAC and plumbing equipment not to have a callback in 1.5 years of operation, but since startup, there have been none."

The system design ensures that if the heat pump requires maintenance, the Innovation water heaters automatically provide full backup, meeting the hot water demand without interruption. This high-performance solution not only provides long-term cost savings but also enhances the hotel's cooling capacity by offloading the condenser water loop.

Hot Water Packaged Systems