

CASE STUDY**HAWAIIAN ELECTRIC****2.5 MW Virtual
Power Plant****Program Details****Location**

Oahu, HI and Maui, HI

**Consumer Segment**Multi-family and Single-family;
Low and moderate income**Asset Type**Electric Resistance and
Heat Pump Water Heater**Grid Services**Fast Frequency Response,
Peak Load Reduction,
Renewable Firming**Consumer Services**Asset Monitoring and
Maintenance**Key Partners**

OATI, Hawaii Energy

Challenge

With a 100% clean energy goal by 2045, Hawai'i is increasing its reliance on wind, solar and other renewable energy sources. In 2021, Hawaiian Electric Company (HECO) generated 38% of its electricity from renewables.

As renewable penetration increases, HECO is exploring innovative new ways to cost-effectively balance the grid, address resource intermittency, and engage customer-sited resources.

Solution

In 2019 HECO solicited competitive bids from aggregators to deliver capacity and ancillary services from distributed energy resources. The first such contract, called the "Grid Services Purchase Agreement", was awarded to Open Access Technology International (OATI) under which Shifted Energy acts as a sub-aggregator.

Program

As of 2022, Shifted Energy has recruited, enrolled, and provided more than 3,000 families with smart water heater controls to deliver 2.5 MW of capacity for Capacity Reduction, Capacity Build, and Fast Frequency Response. Assets are aggregated into its industry leading virtual power plant platform, called Grid Maestro, which has successfully dispatched more than 100 events per year.

Shifted Energy provides 15-minute, 7-day-ahead capacity forecasts to HECO via OATI to deliver reliable capacity estimates. 98% of Shifted Energy's assets are located in multi-family buildings, many of which are classified as ALICE (Asset-limited, Income-constrained, Employed) homes.

Customer Testimonial

**Hawaiian
Electric**



“

We have successfully deployed multiple GIWH pilot projects with Shifted Energy over the last five years, so we are confident in the technology's capabilities. The key value propositions with two-way communications of GIWH technology are granular visibility into the current state of each asset, forecasting and provision of multiple grid services from a single device in a single day plus real-time monitoring and verification of performance during events.” - Yoh Kawanami, Co-Director of Customer Energy Resources at Hawaiian Electric

Key Metrics



2.5

MWs
provided
to HECO



30

Participating
Multi-family
Properties



3,000+

Assets
Connected



\$100K

Annual
Participant
Benefits



3%

5-minute
Telemetry
Accuracy



98%

Asset
Participation
Rate

Property Manager Testimonial



AVALON
DEVELOPMENT

“

As pioneers of this project, we're able to provide our clients with value while also enhancing our services in an engaging and innovative way. Our goal is to continue building developments with Hawaii's people and affordability in mind – and with Shifted Energy's grid-interactive water heaters, we're not only lowering the cost of living, but also reducing our carbon footprint in Hawaii.” -

Christine Camp, President & CEO at Avalon Development



The Element - Grid-Interactive Building

Shifted Energy, Inc. develops world-class aggregation software and deploys virtual power plants to convert distributed energy resources into revenue-generating energy assets, empowering electricity users and enabling utilities to stabilize their grids and accelerate renewable energy integration.



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