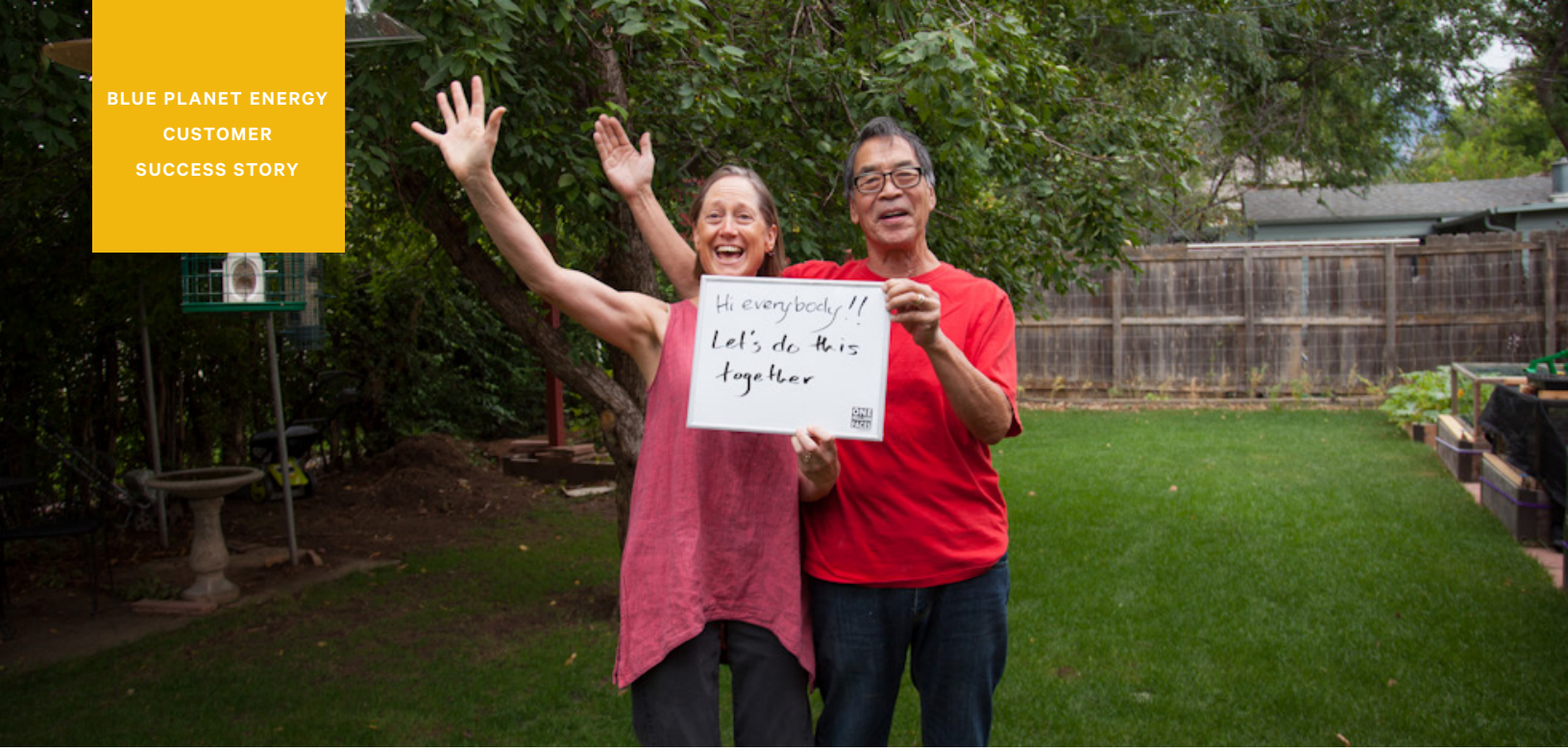
BLUE PLANET ENERGY
CUSTOMER
SUCCESS STORY



GRID-ISLANDING ELECTRICITY SYSTEM

Colorado Homeowners Lower Carbon Footprint With Energy Independence

After a wildfire destroyed their home in 2010, and the town of Boulder, Colorado experienced year after year of destructive wildfires and flooding, David and Emily Takahashi took a hard look at the consequences of global warming. Determined to be part of the change, they set out to lower their carbon footprint.

PROJECT
Residential: The Takahashis

LOCATION
Boulder, CO

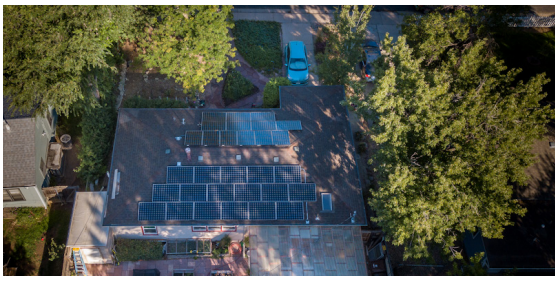
APPLICATION
Solar-Plus-Storage System

PRODUCT
Blue Planet Energy Blue Ion 2.0

BATTERY SYSTEM
Blue Ion 2.0 cabinets, 32 kWh capacity total

INSTALLER
Independent Power Systems

SOLAR
10.7 kW Solar PV Array

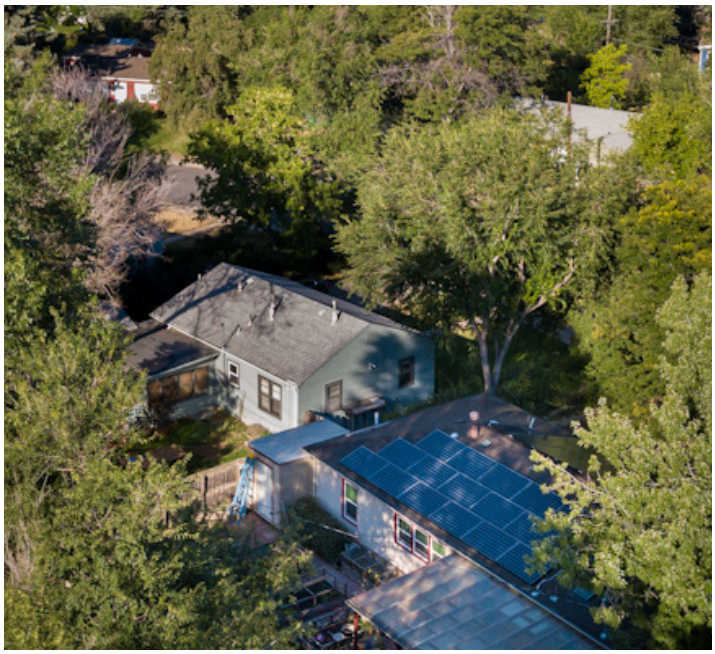


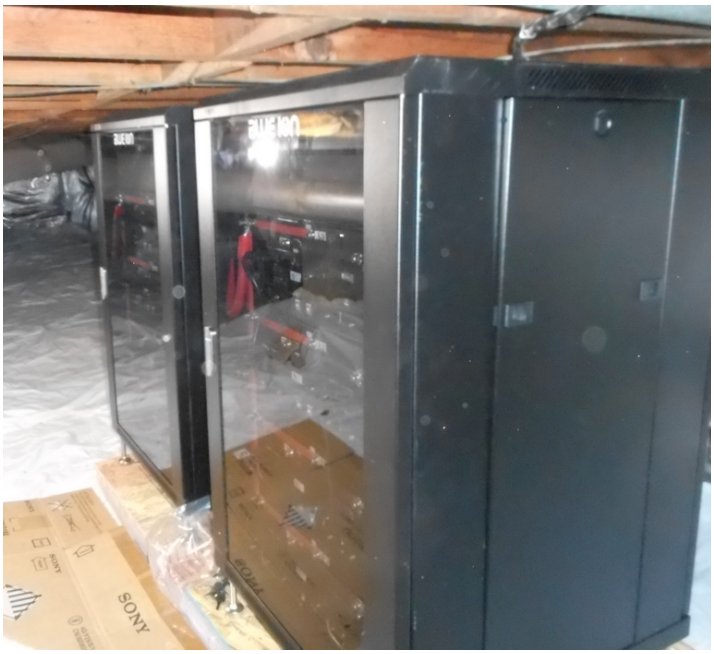
Ice storms, hurricanes, wildfires, and high wind events all prove the harsh impact of global warming on climate change, ultimately increasing the frequency and length of power disruptions. To David Takahashi, creating energy resilience for his house meant not only being prepared for future power outages, but also maintaining basic electricity for his family and neighbors for as long as necessary.

Moving off the grid was a way David could achieve energy independence while simultaneously reducing his carbon footprint. In 2015, the Takahashis embarked on their quest to take their 60-year old replacement home off-grid.

"I quickly realized that if I wanted other people to lighten their footprint, I had to walk the talk. The average U.S. citizen's carbon footprint amounts to 100 pounds a day per person, but the carrying capacity of our planet is roughly 18 pounds a person per day. The work on our home brings the footprint of my wife and I to 12 pounds each per day."

—David Takahashi
Homeowner





"Our entire retrofit cost less than the Tesla X that the world is so interested in bringing home."

—David Takahashi

Becoming "Net Positive"

Initially, the Takahashis questioned whether their home was capable of becoming "net positive," so they started by evaluating their energy efficiency. According to the Home Efficiency Rating System (HERS) Index, the score of new homes built to code is 100. The Takahashi's was 190. Through many retrofits, they lowered their score to 66, and in January 2017 they disconnected from their natural gas line completely.

Most off-grid homes aim to be net zero, where the total amount of energy used is roughly equal to the amount of renewable energy created. But for David, that wasn't enough. He wanted to be net positive, creating excess energy he could share with his neighbors.

Knowing they needed to maximize use of the energy pulled from the roof, David considered several battery choices. He wanted a battery that uses solar to recharge, is compact enough to save space within his home, and capable of running solely through direct current (DC).

By September 2018, David commissioned Independent Power Systems to install a 10.7 kW solar array and 32 kWh of Blue Ion 2.0 battery storage, dropping their HERS score to -50, or net positive.

Blue Planet Energy's Blue Ion 2.0 batteries were energy dense enough to be installed in the home's crawl space and saved valuable space inside the Takahashi's modest 1,000 sq. ft. home, yet provided the capacity to capture 100% of the energy being generated from the solar array.

Utilizing the crawl space was possible only because of the safety of Blue Planet Energy's Blue Ion Ferrous Phosphate (LiFePO4) batteries, which are made from an intrinsically safer cathode material than other Lithium Ion batteries on the market.

Long-Lasting Reliability

The solar-plus-storage system has the ability to connect with or disconnect from utility power to provide constant electricity regardless of whether the electric grid is functioning or not.

The Takahashis take comfort in knowing their system will provide them with heat, cooking, refrigeration, internet and charged cell phones during a power outage. With judicious use of energy, for instance using the microwave instead of stovetop cooking, the Takahashi's battery system could keep them powered for four straight days, even in winter.

After a full year of use the Blue Ion batteries had only gone through 100 of its rated 8,000 charge cycles, making David confident that the batteries will continue working for years to come with minimal to zero maintenance.

Though the Takahashi's home was built in 1954, and its surrounding trees had grown 35 to 50 feet, the Takahashis proved that even a seemingly less-than-ideal home can be retrofitted for a solar-plus-storage system. In under four years, they achieved an 87 percent reduction in greenhouse gas emissions.