



Power Station

Everything You Need to Know About Solar Batteries

THE HOTTEST TOPIC IN THE SOLAR industry these days is batteries. The foundation of any solar panel system, batteries need to meet the requirements of variable grid energy, irregular recharging and discharging along with deep cycling every day for many years. Which battery is right for your home depends on a variety of factors including life cycle, cost, installation and maintenance.

“When choosing a solar provider, you have to carefully consider the type of battery they offer,” says Michael Hallinan of Sunetric. “Regardless of type, all battery performance is ruled by chemistry, physics and math.”

Here are the positive and negative aspects of each:

LEAD-ACID BATTERIES

Renewable energy has been making use of lead-acid batteries for ages now. They’re safe, economical and up to 90 percent efficient. “It’s an older technology, so it’s a known energy performer,” says Hallinan. “But it’s very heavy, reliable and safe when deployed properly, but requires maintenance.”

DID YOU KNOW?
Lead-acid and GEL batteries are 50 to 90 percent less expensive than other technologies.

GEL BATTERIES

An offshoot of lead-acid batteries, advanced gel batteries are 95 percent efficient but can be larger and heavier than other battery options. Still, Hallinan says, there’s a lot to like. “They have an extremely fast discharge and recharge rate so they’re capable of taking on larger energy loads, are environmentally safe and operate at less than body temperature,” he says. GEL batteries are dependable, green and cost effective over the short- and long-term.



Plug and play energysystems.com system installation

LITHIUM-ION BATTERIES

These are considered the most widely used energy storage technology and can be found in things like tablets and smartphones, power tools and electronic vehicles. They are limited by short life, high cost and requires a battery-management system to protect against cell damage and overheating. Plus, fewer than 20 percent of lithium-ion batteries are safely recycled. “They work fine on cell phones, but they’re less than 60 percent efficient,” says Hallinan. “Plus, there’s a higher potential for overheating.”

FLOW BATTERIES

A fast emerging storage option is the flow battery. The charging/discharging procedures are managed by the integrated power electronics and offer minimal cost. However, the chemistry of the battery can be complex and typi-

cally requires supporting equipment such as sensors, pumps and additional containment vessels. “It’s a promising new technology, but the performance is still being tested,” Hallinan says. Flow batteries require a lot of space, venting and have yet to prove reliable.

POWER UP?

Popular brands of solar batteries in Hawaii include:

Aquion — Aqueous salt ion

Blue Ion — Lithium-Ion phosphate

LG — Lithium-Ion Phosphate

Power Lord — High-Density GEL and Sodium Nickel

Sonnen — High-Density GEL

Sony — Lithium-Ion Phosphate

Tesla (Panasonic) — Lithium-Ion Phosphate, liquid-cooled

FOR MORE INFORMATION

Call Sunetric today at 262-6600 and ask about its available solar battery systems.