



**HAWAI'I
STATE
ENERGY
OFFICE**

What are Battery Energy Storage Systems?



Battery energy storage systems (BESS) store energy to use later when it's needed. The batteries in our everyday electronic devices are small versions of the battery energy storage systems we use in the electric grid.



Battery storage comes in many sizes, from home-use to utility-scale.

Lithium-ion batteries are the most common BESS, but scientists are researching new storage systems every day.

Battery Energy Storage Systems & Intermittent Power

Intermittent renewable energy resources – like solar, wind, and hydroelectricity – use battery storage to save energy generated on productive days. The stored energy can be used when the resource can't make electricity, such as on cloudy days, at night, during grid outages, or days without wind. Batteries can only discharge for a limited time and do not turn an intermittent source of energy into a firm source of energy.



Intermittent energy resources don't make power 24/7.

Our Grid Needs Battery Energy Storage Systems

Hawai'i needs a safe, reliable electric grid to provide electricity when we need it. Battery energy storage systems help keep our energy grid stable and accepting of more renewable energy.



Provides back-up power



Can provide electricity immediately with no waiting period



Limits power outages



Makes the electric grid more reliable by balancing frequency and voltage

Battery Energy Storage Systems in Hawai'i

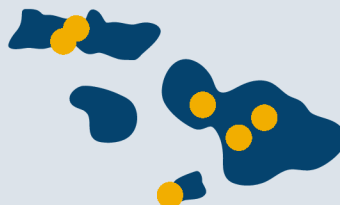
Hawai'i has one standalone energy storage facility on O'ahu. Most of the battery energy storage systems are connected to solar power facilities.



Solar PV + Storage



Standalone Energy Storage



Battery Energy Storage Systems & Safety



All batteries are an extreme fire risk and must be **properly installed and maintained**.



Batteries contain hazardous materials and **require proper handling and disposal at end of life**.



Learn more about battery energy storage systems at www.energy.hawaii.gov



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