

POWER DELIVERY

Battery Energy Storage Systems

OWNER'S ENGINEER SERVICES

- > RFP development
- > Submittal evaluation
- > Construction management
- > Testing and commissioning

SERVICES

- > Project permitting
- > Cost-benefit analysis
- > Return on investment analysis
- > Balance of plant design
- > System analysis and modeling
- > System protection
- > SCADA interface
- > Protection and control

STUDIES

- > Technology selection
- > Storage system sizing
- > Site selection assistance
- > Power quality analysis
- > System impact studies
- > Feasibility studies



Gain reliability and ROI

Battery energy storage systems (BESS) can be a good investment, today. POWER Engineers will help you take advantage of advances in storage technology that provide greater grid reliability and that pay for themselves with a positive return on investment now.

The choices can be complicated. POWER's experts will help you with the studies, modeling and site selection that are the keys to a successful energy storage project. Our team will provide the technical analyses, system impact studies, simulations and design recommendations you need to develop and test your systems for interconnection performance and reliability.

Energy storage systems are essential for utilities to effectively manage the mix of energy sources coming onto the

modern grid. POWER has extensive experience with renewable energy sources such as wind, solar, geothermal and biomass. This expertise includes integrating renewable sources into microgrids, utility power grids and within regional transmission organizations across the country.

A breadth of services

We will show you how a BESS improves your ability to provide the needed frequency regulation and power balancing to deal with the fluctuations that come with renewables.

You gain a very efficient, fast-acting energy storage system that provides a breadth of services. These include controlling voltage, modifying load profiles and enabling a greater adoption of renewable energy.

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Battery Energy Storage Systems



Advances in storage technology can provide you greater grid reliability and can pay for themselves with a positive return on investment now.

Your trusted advisor

When you have more than technical needs, we can help with that, too. Our team of experts can provide the financial and economic analyses that help you figure out if a BESS makes sense for you. With POWER you gain a trusted advisor who works with you from the request for proposals through project completion.

Project Highlights

San Diego Gas & Electric

Served as owner's engineer for a lithium ion battery storage facility, two projects totaling 37.5 MW with an energy capacity of 150 MWh, the first facility of its size. Provided the functional specifications that helped SDG&E fast-track installation of the two projects, a 30 MW BESS at Escondido substation and a 7.5 MW BESS at El Cajon substation. Provided procurement support, including proposal evaluation, drawing and document review, as well as witnessing factory testing.

Imperial Irrigation District

Served as owner's engineer and construction monitor for 30 MW lithium-ion BESS with an energy capacity of 20 MWh, the first of its size in North America. Performed critical system studies to help IID select a location and size for the BESS. Following a major system outage and continued growth in solar generation, IID needed to install the BESS to provide grid flexibility and increase reliability on its system. The BESS responds to variabilities of intermittent resources and provides peak shaving, frequency regulation and power balancing to support IID's system.

AltaGas

Provided detailed design to fast-track a 20 MW BESS with an energy capacity of 80 MWh, one of the largest lithium-ion BESS projects in the United States, at the Pomona natural gas-fired peaking power plant. Services included architectural,

structural and mechanical design for the new battery enclosure and electrical components, as well as fire protection system design. Also provided detailed electrical design for interconnecting the battery systems to the transmission grid.

Confidential Client

Serving as a major utility owner's engineer for a hybrid system composed of a 15 MW gas turbine and a 6 MW BESS with an energy capacity 48 MWh. Providing engineering and design, project management, permitting, licensing support, material and construction services. Also providing procurement support and management of the contractors.

Golden Valley Electric Association

For one of the earliest grid-tied storage projects in the United States, provided owner's engineering services for the addition of a 40 MW, 20-minute BESS. BESS provided spinning reserve and var system support at the northern terminal of a new northern intertie in Fairbanks. Provided turnkey specifications for reworking a storage building to house the batteries, power conversion system and associated controls. Included services for reworking HVAC and auxiliary AC and DC station. Connected the BESS to the electric system by way of a 15/138 kV transformer located in a new 138 kV substation.