Battery Energy Storage Systems (BESS) and Microgrids

Escondido Battery Energy Storage System project

As part of San Diego Gas & Electric's (SDG&E®) commitment to sustainability, we are integrating a growing amount of Battery Energy Storage Systems (BESS) and Microgrids. This will help support grid reliability, advance clean energy goals and maximize the use of renewable electricity produced by the sun and wind.

Overview

SDG&E has been rapidly expanding its battery energy storage and microgrid portfolio. We have around 21 BESS and microgrid sites with 335 megawatts (MW) of utility-owned energy storage and another 49+ MW in development.

Typically, these battery systems and microgrids are installed on SDG&E-owned property. They are most often adjacent to our existing substation facilities or in critical locations where grid reliability and resiliency are needed the most.

What's a microgrid?

Microgrids are small-scale electric grids that can operate independently of or parallel to the larger regional grid. They can keep critical community facilities powered during outages. Battery storage is an important part of every microgrid.

Battery Energy Storage Systems (BESS)

Battery storage works by absorbing electricity when it's abundant on the power grid. It sends excess power back to the grid when it's most needed, such as during the evening after the sun sets and solar energy fades away. For example, SDG&E's Melrose BESS project is a 20 MW battery system that can provide a total of 80 megawatt hours (MWh) of power to our local grid. This is equivalent to powering about 13,000 residential customers for roughly four hours.

Types of batteries

SDG&E is building a diverse portfolio of battery system solutions – including lithium-ion manganese, lithium-ion phosphate, vanadium redox flow and iron-salt flow batteries and hydrogen – to build grid reliability and help store surplus renewable energy.

Benefits of batteries and microgrids

SDG&E aims to reach net-zero greenhouse gas emissions by 2045. Battery and microgrid systems will help advance our state's and region's renewable energy goals. These systems also support grid reliability and the integration of more clean energy into the electric grid by maximizing the use of renewable energy. They can also extend the availability of renewable energy into peak demand hours. Battery and microgrid systems also prepare communities to mitigate the impact of rotating power outages, planned outages, Public Safety Power Shutoffs (PSPS) and other emergency or unplanned service interruptions.

Some of SDG&E's battery and microgrid projects are connected to the state's market. This means the California Independent System Operator (CAISO) will be able to dispatch energy from our batteries at any time to balance supply and demand on the statewide grid.

Construction installation

Microgrid and battery projects are complicated systems comprised of batteries, inverters or power conversion systems (PCS), transformers, cyber-secure communications, metering, switching, energy and battery management systems, microgrid controllers (if applicable) and auxiliary equipment. Typically, batteries are installed in custom-built, above-ground enclosures with a fire suppression and warning system to maximize safety. SDG&E will try its best to minimize impacts like construction noise and dust. Construction may take place in phases. Sometimes planned outages may occur due to the nature of this work and customers will be promptly notified.

For more information

Visit our project website at **sdge.com/Major-Projects**. To learn more about SDG&E's clean energy projects, visit **sdge.com/sustainability**. If you have any questions or concerns, please contact us toll-free at **1-844-210-5821**.

Map of SDG&E battery and microgrid projects:
- Ortega 2 MW
- Fallbrook 70 MW
- Pala-Gomez Creek 10 MW
- Borrego 8 MW Microgrid
- Melrose 20 MW
- Escondido 30 MW
- Ramona 500 kW Microgrid
- Carmel Valley 1 MW Microgrid
- Miramar (Top Gun) 30 MW
- Kearny 20 MW
- Elliott 10 MW Microgrid
- Santee 10 MW
- El Cajon 7.5 MW
- Miguel 2 MW Microgrid
- Clairemont 9 MW Microgrid
- Westside Canal 131 MW
- Paradise 10 MW Microgrid
- Boulevard 10 MW Microgrid
- Cameron Corners 500 kW Microgrid

● Energy Storage ● Energy Storage + Microgrid

SDGE™