Energy Storage Services

Over our 100-year history, we have engineered and/or constructed more than 250,000 MW of electricity worldwide — more than any other contractor and equivalent to approximately one-fourth of the current generating capacity in the United States.

Areas of Expertise

- Conceptual Studies/ Planning
- Siting and Permitting
- Engineering/Design
- Procurement
- Construction/ Commissioning

More Information

1.978.905.2100
AskEnvironment@aecom.com

Overview

THE NEED FOR ENERGY STORAGE

An energy transformation is underway, with energy storage playing a critical role in creating more reliable, sustainable, and flexible assets and electric grid.

There are a number of factors contributing to the viability of energy storage technologies for both grid-connected and grid remote applications, such as:

- Costs for energy storage technologies have significantly fallen in recent years due to a variety of market forces.
- The increased amount of variable energy resources connected to the grid will require flexible assets (e.g., energy storage) to mediate between electricity generation and load.
- Our power networks and supply / demand points are becoming more dispersed and fragmented through an expanding de-centralized system which will continue to be a challenge for grid operators to maintain power quality, flexibility and stability on our electrical systems.

As these influences become more prevalent, there will be a greater need for more economical solutions to maintain the delicate supply-demand balances in our energy systems. Energy storage technologies are expected to move down the cost curve and are well suited to mediate between variable energy resources and consumer demand. Energy storage technologies can enhance grid reliability and resiliency, provide ancillary services and support higher penetrations of variable energy resources.

Areas of Expertise

SITING AND PERMITTING. AECOM has conducted numerous conceptual studies, siting and permitting activities for various energy storage technologies including Li-ion batteries, PHS, and select CAES technologies. We continue to expand our design and project execution services to help our customers integrate new energy storage solutions into their operations

PROJECT EXECUTION. AECOM provides the full complement of services to develop energy storage projects across the globe. Clients benefit from our broad range of project management experience and technical resources, providing them with a single source to thoroughly plan, develop, and execute environmental reviews, engineering/ design, procurement, construction and commissioning.

As the only global planning, engineering and construction management firm also accredited by the National Association of Energy Service Companies (NAESCO), AECOM is vendor and technology neutral. We carefully evaluate both proven and new technologies and make decisions based on what is best for our clients.

ENERGY STORAGE TECHNOLOGIES. Our energy storage project experience includes the following solutions:

- Battery energy storage systems (BESS)
- Advanced Compressed air energy storage
- Pumped Hydro storage
- Thermal Energy Storage
- Battery backup systems

Project Experience

GAS TURBINE AND BATTERY ENERGY STORAGE SYSTEM HYBRID PROJECTS (CUCAMONGA AND NORWALK, CA). AECOM provided on-site construction and project management along with commissioning and operations support of hybrid storage systems at two peaker plans for Southern California Edison.

FORT CARSON BATTERY ENERGY STORAGE SYSTEM (COLORADO SPRINGS, CO). As part of a comprehensive energy savings performance contract (ESPC) at Fort Carson, AECOM de-signed and installed a 8.5 MWh battery energy storage system (BESS) with a discharge rate of 4.2 MW. The BESS includes a smart energy management control system that manages electrical demand charges.

ANGAS ADVANCED COMPRESSED AIR ENERGY STORAGE PROJECT (STRATHALBYN, SOUTH AUSTRALIA). AECOM conducted a front-end-engineering and design (FEED) study as well as detailed engineering and design services for a 5 MW A-CAES facility to be sited at an idled zinc mine. The A-CAES facility will be dispatched into the National Electricity Market to provide ancillary services, support grid security and reliability.

DESIGN AND PERMITTING FOR BATTERY ENERGY STORAGE SYSTEMS (SANTA BARBARA, CA). AECOM supported a confidential energy company's efforts to install two BESS on the site of an existing generating station. Project components include two lithium ion BESS, power conversion systems, transformers, and other auxiliary electrical equipment. AECOM was responsible for both project design and permitting.