Overview

Energy Storage

AECOM's energy storage technologies can have immense impacts by stabilizing the electricity grid and providing a myriad of services valued by stakeholders.

AECOM has developed a process and methodology for strategic sustainability planning to help prospective clients with developing a holistic strategy to evaluate energy generation and storage, energy efficiency and conservation methods. The Sustainable Systems Integration Model (SSIM™) helps clients identify an optimal energy storage solution that is politically and financially acceptable. This methodology can be used to model energy storage systems to determine demand charge savings during peak and off-peak periods.

AECOM provides a variety of services required to execute and deliver energy storage projects across the globe. Our broad range of project management services, coupled with our technical resources, allows us to thoroughly plan, develop and execute environmental reviews, permitting, engineering and design, procurement, construction and commissioning. Our experience within the energy storage markets includes market analysis (international and domestic), siting and permitting and project execution.

A summary of energy storage initiatives and projects include:

- Compressed Air Energy Storage (CAES)
  - Demand charge management
  - Balance-of-plant system design, integration of turbo-machinery into overall plant design
  - Adiabatic - CAES initiative
  - Underwater - CAES initiative
- Multiple pumped storage projects serving as member of developer team
  - Rocky Point Pumped Storage project
  - Ludington Pumped Storage project
- Sample of battery storage projects:
  - 6 MW/1.5MWh US Government
  - 6 MW/1.6MWh Australian Mining Company
  - 1 MW/1MWh AusNet Services
  - 500 kW/2MWh Goleta, CA
- Energy storage study prepared for Australian Renewable Energy Agency
- Siting and permitting activities for multiple energy storage projects
- AECOM designed, constructed and operated an off-grid hybrid power system using 20 kW diesel generator, 1.44 kW solar array and lead-acid battery storage system
- AECOM developed hybrid power system utilizing 600kWh battery storage system for Bugala Island, Uganda, Africa

Services

Concept assessment
- Site selection
- Technology selection
- Conceptual design and system sizing
- Grid-interconnect investigation
- Risk analysis

Techno-economic assessment
- Feasibility studies
- Social impact assessment
- Cost estimations
- Financial modeling
- Economic benefit assessment
- Ancillary service benefits
- Project planning

Planning and permitting
- Environmental impact assessments
- Stakeholder management plan
- Resource planning
- Life cycle analysis
- Risk and hazard assessments
- Cost assessment

Project management
- Construction and site management
- Environmental health, and safety management
- Commissioning services
- Project reporting and stakeholder management
- Contract management

Engineering, procurement, construction
- Mechanical, electrical, civil
- SCADA
- Grid connection and integration
- Transmission and distribution
- Water/marine
- Fire and safety assessment
- Construction and site management
- Procurement services

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