ENERGY STORAGE SERVICES

Comprehensive solutions for the entire lifecycle of a project

When it comes to energy storage, Barr not only understands what it takes to integrate energy storage into existing power systems, but we also understand the big picture—how battery materials are mined and how the industry is evaluating transformation energy storage concepts and planning for the future.

From battery storage and fuel cells to pumped storage and compressed air, our projects encompass all types of energy storage. We can help you choose the energy storage solution that will best fit your needs now and in the future.

Project development

We provide high-level ballpark estimates or detailed AACE cost estimates, which include preliminary design, to help you evaluate your business case and plan for the years ahead. Our relationships with energy storage technology vendors and developers can help connect you to the right partners for planning and implementation.

Site engineering

Barr's multidisciplinary team of engineers can perform geotechnical, civil, and structural and foundation design. We perform NFPA, IEEE, and other jurisdiction code reviews and evaluate safety, hazard, and environmental impacts for multiple forms of energy storage.

System engineering

Our engineers can assist with battery selection, electrical design, power electronics, relay settings, protection and control design, SCADA, lightning protection, hazard mitigation analysis, interconnection, fire suppression systems, exhaust ventilation, and signage.

Electric-energy resource options study

Barr completed an electric-energy resource options study to assist with development of an integrated resource plan for replacement of the power station and preparation for the Clean Power Plan (the U.S. EPA's regulations for reducing greenhouse gas emissions). The plan process is based on consideration of costs to customers, reliability as an energy source for the region, environmental stewardship, future uncertainty and risks, federal regulations, local generation capacity, and economic development. Barr's conceptual study of 17 resource options generated cost, schedule, plant-performance, and emission data that informed an analysis of the associated strengths, weaknesses, opportunities, and threats.

Procurement

We can assist with equipment procurement, bid administration, and vendor and contractor negotiations.

Construction-phase services

Barr's project controls specialists and construction managers can help you with a smooth, trouble-free construction process. Our services include field inspection and testing and construction management.

Commissioning

Our commissioning services include field testing, training facility operations and maintenance staff, developing operations and maintenance (O&M) manuals and emergency operations plans, and preparing commissioning reports.

Operations and maintenance

Successful energy storage facilities need to be proactive about operations and maintenance (O&M). We perform environmental and safety reporting, performance testing, and recommissioning.

Geotechnical investigation for the East Valley Battery Storage Facility

M.A. Mortenson retained Barr to conduct a geotechnical investigation and provide recommendations to support foundation design and construction for a new battery storage facility in Chandler, Arizona, including the site's battery storage building, transformers, HVAC units, and other project infrastructure. Barr performed geotechnical borings to document and sample the soils within the storage facility's footprint, as well as collected samples for laboratory testing and further evaluation of soil strength and general classification. Fieldwork also included electrical resistivity testing to support electrical grounding design. We then developed a report, presented results, and provided analyses and recommendations for foundation design as well as construction considerations. As Arizona's first standalone energy-storage site, it injects power into the grid for Phoenix-area utility customers during high peak demand.