

ENERGY STORAGE SERVICES OVERVIEW



CEA Services are Designed to Get Your Project Completed on Time and Within Budget

Given the phenomenal growth of energy storage around the world, project developers, financiers, EPC's, utilities and IPP's are continuing to identify the opportunities and challenges associated with Battery Energy Storage Systems (BESS). CEA provides a full suite of services that support project development, due diligence, detailed engineering, system sizing and performance assessments of energy storage projects - ensuring both project competitiveness and success.



Project Development

- Economic Model Reviews
- Site Layouts
- Technology Selection
- Performance Analysis
- System Design Reviews
- Interconnection Support
- EPC / Integrator Bid Reviews
- PPA / Performance / Warranty Reviews



Commercial Support

- Supplier Tours & Relationship Management
- Technical Specification Development
- Commercial Contract Reviews
- Sourcing Support
- Warranty T&C Reviews
- Performance Warranty Evaluations
- RFP Development & Technical Analysis



Technical/Construction Support

- Technical Assessment / Due Diligence
- Battery Due Diligence
- IE / OE Reports
- Technical Feasibility Reports
- EPC / System Integrator Due Diligence
- EPC Contract Review
- Construction Monitoring
- Commissioning Support



Market Intelligence

- Battery Raw Material Risks & Insights
- Manufacturing Capacity Insights
- Supply / Demand Insights
- Battery Technology Roadmaps & Technical Projections
- Battery Cost Roadmaps & Projections
- Supplier Factory Auditing / Benchmarking



PROJECTS

- Insight into over **42 battery** manufacturers and completed more than 8 GWh QA projects
- Client base from Project Developers to some of the largest IPP's in North America
- Over 50 years of combined energy storage experience

Market: Residential
Location: U.S. & Puerto Rico (2018-2019)
Type: Supply Chain, Technical Services
Service: RFP Development, Supplier Qualification & Use Case Validation

CEA Value Added: Identified qualified hardware and software providers to provide energy storage systems for installation in the United States and Puerto Rico. Assisted with navigating third party certification requirements and test protocols.



Market: Utility Scale
Location: U.S. & China (2018)
Type: Supply Chain
Service: Supplier Assessments & Qualification

CEA Value Added: Reviewed and provided feedback on BESS performance requirements outlined in the energy storage PPA. Proposed revisions to protect the Client and ensure the metrics were applicable to the selected battery chemistry.



Market: Utility Scale and C&I
Location: Europe (2018-2019)
Type: Supply Chain & Technical Services
Service: RFP Development & Supplier Qualification

CEA Value Added: Identified qualified hardware providers to provide energy storage systems for projects in Europe and MENA. Developed and distributed RFP to qualified suppliers and compiled results and recommended appropriate shortlist to Client. Assisted with negotiations and supported procurement of the selected provider.



Market: Utility Scale
Location: U.S. (2020)
Type: Engineering Services
Service: Technical Assessment

CEA Value Added: Provided technology and feasibility review on NCM and LFP chemistry systems supporting 2+ GWh battery energy storage project pipeline. Performed engineering and financial analysis of commercially available, as well as leading edge new systems.



Clean Energy Associates (CEA), a solar and storage technical advisory firm, provides quality assurance and independent engineering solutions worldwide. We serve financial institutions, project developers, EPCs, IPPs, and power plant owners. From our base in China, CEA's quality control engineers travel worldwide to conduct upstream in-factory technical evaluations, including factory audits, production monitoring and pre-shipment product inspections. Our US-based product management and engineering (IE/OE) teams provide support throughout the project life cycle, from upstream supply chain management and supplier benchmarking, to downstream system design, construction, commissioning, performance assessment, re-power and optimization as well as warranty support. We serve the solar and storage industries through our expertise in PV modules, racking, inverters and energy storage systems. Since 2008, CEA has reduced buyers' risks and improved returns on investments via quality assurance, technical and financial due diligence and engineering services.

As technical advisors, we provide procurement and investment confidence through risk mitigation to key stakeholders in solar and storage projects worldwide.

