



Utility-Scale Battery Energy Storage Engineering

Power Engineering Solutions for a Smarter Grid

Keentel Engineering delivers complete **Battery Energy Storage System (BESS) engineering services** for utility-scale projects. With 30+ years of electrical and power engineering expertise, we design **safe, compliant, and high-performance energy storage solutions** that support grid stability, renewable integration, and energy resiliency.

Our BESS Engineering Services



Feasibility & Planning

- Site assessment and interconnection studies
- Load flow, short-circuit, and transient stability analysis
- Technology evaluation: lithium-ion, flow batteries, and hybrid systems



Electrical Design & Integration

- MV/HV collector system design and interconnection substation engineering
- Transformer, inverter, switchgear, and protection system sizing
- Grounding, cabling, and auxiliary system design
- Control, SCADA, and EMS integration



Compliance & Modeling

- NERC PRC, IEEE, IEC, and NEC code compliance
- ISO/RTO interconnection applications and support (ERCOT, CAISO, PJM, SPP)
- Dynamic model validation (PSSE, PSCAD, ETAP, PowerFactory, MATLAB/Simulink)
- Grid code compliance for inverter-based resources (IBRs)



Construction & Commissioning

- IFC design packages and contractor coordination
- Factory Acceptance Testing (FAT) & Site Acceptance Testing (SAT)
- Protection and control scheme testing
- Energization support and as-built documentation



Why Choose Keentel Engineering?



30+ years of electrical and power engineering leadership



Proven expertise in renewables + BESS hybrid projects



Advanced simulation and modeling tools for accurate system performance



Trusted by utilities, developers, and EPCs for mission-critical energy storage