



# Utility-Scale Wind Farm Engineering

## Expert Electrical & Power Engineering Solutions

At **Keentel Engineering**, we provide **end-to-end engineering services** for utility-scale wind farms, ensuring safe, reliable, and efficient integration into the grid. With 30+ years of expertise, we support developers, utilities, and EPCs from **feasibility to commissioning**.

## Wind Farm Engineering Services

### Feasibility & Planning

- Site assessment & conceptual layouts
- Load flow, short-circuit, and stability studies
- Cost estimation & constructability reviews

### Electrical Design & Engineering

- Medium-voltage (MV) and high-voltage (HV) collector system design
- Substation and **Point of Interconnection (POI)** design
- Cable sizing, reactive power compensation, grounding systems
- Protection & Control (P&C) schemes and SCADA integration

### Construction & Commissioning Support





- IFC design packages for contractors
- Vendor and contractor coordination
- Factory Acceptance Testing (FAT) & Site Acceptance Testing (SAT)
- Energization support & as-built documentation

### Compliance & Grid Integration

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



## Why Choose Keentel Engineering?

-  **30+ years of proven power engineering expertise**
-  Specialized in **renewable energy integration and HV/MV substation design**
-  Advanced software tools: **PSSE, PSCAD, ETAP, PLS-CADD, PowerFactory**
-  Trusted partner for **large-scale wind developers and utilities**