Meteorological Stations

Business Value

- Models performance of a potential solar or wind generation site
- Measures conditions and stores data for performance analysis
- Establishes baselines through which performance efficiency is calculated
- Provides data to forecast potential power production from renewable energy sites

Meteorological data is required to forecast generation and measure the performance of solar and wind power resources.

Trimark delivers turnkey, utility-scale meteorological (MET) stations that satisfy the requirements of utilities, ISOs, and resource owners, as well as project requirements outlined in Purchase Power Agreements (PPAs). The MET stations include instruments, data collection, and communication equipment needed to gather, store, and report data.

Trimark's engineers design, procure, assemble, install, and commission fully -compliant solutions. The MET stations, which meet or exceed U.L. safety standards, are assembled in Trimark's U.L. 508-A listed panel shops.

Customized MET Stations

Each MET station is customized to address the specific conditions at each site. This includes configuring weather sensors, plane of array irradiance, and temperature sensors. Trimark's engineers commission the MET stations in the field to ensure all the components are communicating as intended.

The MET stations connect and send data to a Trimark Data Gateway (TDG), a CAISO Remote Intelligent Gateway (RIG), Trimark SCADA or other SCADA system. Backup power systems and wireless connectivity are also provided when required.

Meeting Utility Requirements

Utilities, such as Southern California Edison (SCE) and Pacific Gas & Electric (PG&E), may require specific MET sensors and equipment, such as shadowbands, rain sensors, and horizontal visibility sensors. This equipment measures specific points as detailed in the solar PPAs. Trimark incorporates these requirements into each MET station as needed.

MET Station Options

Back-up Power

CAISO requires that MET stations capture data even if primary power is lost. Trimark systems can include built-in UPS/Battery systems and/or PV recharge system to ensure power is continuously supplied.

Wireless Connectivity

Adding wireless access and services to MET stations enables connectivity in remote locations.

Trimark designs MET stations to operate in remote locations without hard-wired communications or power supply. These self-contained systems are used to assess potential solar or wind power production sites.

Mounting Methods

Trimark constructs MET stations for various mounting methods, including via wall, pole, channel strut and free-standing towers.

MET Station Services

- Engineering services to guide system design and documentation
- System assembly and bench testing
- Field installation and commissioning
- Integration with Trimark Data Gateway RIG
- MET data presentation through a browser-based interface

MET Instrumentation and Data Loggers

- Typical MET sensors measure the following:
  - Wind speed and direction
  - Ambient air temperature
  - Barometric pressure
  - Humidity
  - Back panel temperature
  - Solar irradiance (POA and GHI)
- Optional instruments and devices include:
  - Shadowband
  - Soiling station
  - Power supply (PV panel/battery)
  - Wireless data links

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