The Challenge
Hub-height wind measurement plays a key role in wind asset management and is frequently required by grid operators. For example, in the United States and Canada, independent system operators (ISOs) and regional transmission organizations (RTOs) typically require a reference met station to be in place to supply reliable wind data to augment short-term forecast models. Wind data also helps project owners and offtakers predict and verify power output.

Hub-height permanent reference masts are costly to build and maintain, are time-consuming to permit, and can strain landowner relations. A delay in constructing the permanent reference mast can delay the go-live date for the project, delaying revenue generation and even jeopardizing eligibility for tax incentives.

Vaisala Triton Ops can be installed with no permitting delays and at a lower cost than an 80-meter lattice tower system.

The Technology
Triton Ops incorporates the Vaisala Triton Sonic Wind Profiler, a field-proven, state-of-the-art remote sensing system relied upon by the world’s leading wind developers. Triton is a next-generation sodar that measures rotor sweep wind speed and direction and can be deployed and commissioned in a matter of hours.

Triton Ops data meets the requirements of the major ISOs in North America and Triton data are used in forecasts in several regions.

The Vaisala Triton Ops system includes custom firmware to deliver met data at the specific heights and time intervals required by the ISO and forecast service providers. Vaisala's technical team will deliver custom hardware solutions and coordinate with the project owner, EPC contractor, the ISO, and other stakeholders to integrate the Triton data into the wind farm’s data feed and ensure project success.

Benefits of Triton® Ops
- Provides ISOs with met data required for forecasting, at a lower cost than a hub-height reference met tower
- Uses the remote sensing system trusted by the world’s leading wind developers
- Is deployed rapidly, with no permitting delays—to help wind farm operators commission new facilities in a timely manner
The Vaisala Triton Ops System

TRITON

Modbus TCP/IP

Satellite or cellular connection

ISO OR GRID OPERATOR DATABASE

FORECAST SERVICE PROVIDER

WIND FARM SCADA / RIG

VAISALA SKYSERVE® WIND DATA SERVICE

VAISALA SUPPORT (FOR MONITORING)

USER ACCOUNT & OPTIONAL FTP

Triton Ops Includes:
The Vaisala Triton Ops is a complete package including everything needed to meet the requirements of a reference met station.

Triton Measurement Station:
- A Vaisala Triton Sonic Wind Profiler, configured to measure wind and serve data to your ISO database at the required heights and time intervals.
- Integration with mains power supply with 14-day UPS backup. Solar-powered installation optional.
- Integration of Triton data feed to on-site SCADA, protected communications relays or data archiving systems.
- Optional propane-fueled heating system for snow and ice removal.
- Installation, commissioning, and engineering integration to ensure the Triton data is seamlessly and successfully flowing to your ISO's reporting system.

Annual Services:
- Asset monitoring for system uptime and data feed
- Vaisala SkyServe® remote communications and web account for data archiving, visualization, and export
- Optional FTP client account to automatically pull Triton data remotely

Through the combined expertise of Vaisala, a global leader in atmospheric observation, and Second Wind, a global leader in remote sensing technology and data services for the wind energy industry, we offer an integrated suite of wind measurement solutions.