



NEXUS MONITOR[®]

RENEWABLE ENERGY ASSET MANAGEMENT PLATFORM

Enabling real-time monitoring, management, and diagnostics of renewable energy assets.

About Us

Nexus Analytica is a group of international experts who deeply understand the roots behind the digitalization worldwide trend and how it disrupts the energy and industrial sectors.

Our key competence areas involve **the Internet of Things (IoT), smart grids, advanced metering infrastructures, deep data analytics, smart cities, and distributed generation.**

Our key expertise covers a wide spectrum of areas in the energy sector, such as energy markets and economics, energy policy and regulations, energy management, smart buildings and e-mobility, and integration of distributed energy resources (DER) into the utility grid.

We provide all our customers with Quality of service (QoS), customer engagement and awareness, in addition to data management. Our consulting services entail coaching entities on performance optimization, organizational restructuring in new deregulated markets, and generating new revenue streams.

We use our deep understanding of energy markets and systems to promote sustainability for our clients, while meeting environmental targets and climate protection.

Nexus Monitor Key Features

Our unique machine learning and AI-powered diagnostics platform, **Nexus Monitor**, provides remote real-time monitoring of renewable energy assets. Service providers, managers, and operations and maintenance teams can now easily and seamlessly track KPIs and performance metrics from the comfort of their own offices at a glance in real-time.

Nexus Monitor provides the following key features:



Integrated System for All Farms

Single platform for all sites of a renewable energy farm, such as PV, wind, hydro, and battery sites.



AI-Based Reporting

Automatic report generation and detailed analyses for the selected assets.



Condition Monitoring Platform

Immediate feedback on the status of hardware assets operation, warnings, alarms, and faults.



Prediction

Prediction of potential failures and hardware performance and malfunction using AI and Machine Learning.

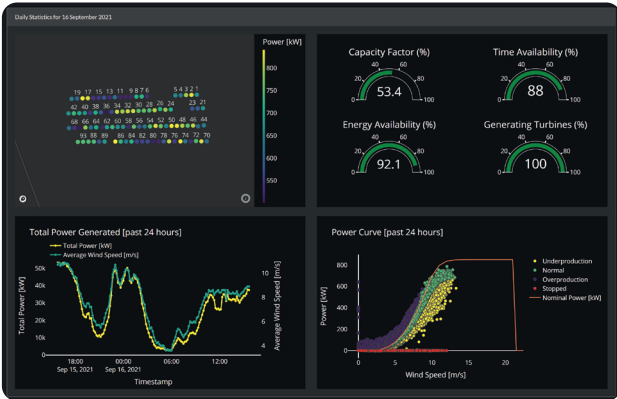


Secured System

Local server placed inside internal premises manages all data storage and handling, which is decoupled from the cloud.

Dashboard Overview

Nexus Monitor provides detailed information about the farm's health both under live tracking mode and historical data for the desired date as well. Instantaneous and historical production KPIs, in addition to environmental conditions such as wind speed and temperature, and their resulting power production, can all be seen in a glance.



Nexus Monitor provides analytics on multiple levels of the renewable energy farm as follows:



Farm-Level Analytics

Production metrics and KPIs are shown for the entire farm, including the farm's capacity factor, time-based and energy-based availability, in addition to revenue and overall downtime.



Device-Level Analytics

A map of the farm's individual assets (wind turbines, PV cells, hydro cells, ..etc) provides the real-time power generation to easily detect faults, in addition to the power generation curves of each asset.



Component-Level Analytics

Real-time and historical readings on asset components, such as gear box oil temperature and bus voltage are provided for easy operation and maintenance.

KPIs & Real-Time Metrics

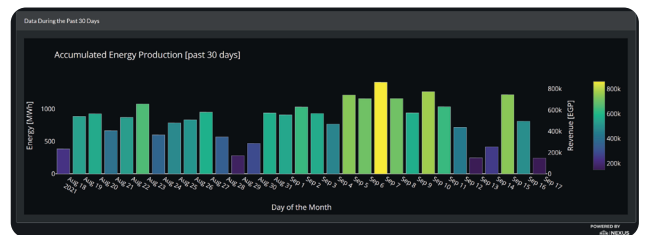
Performance metrics are all computed in real-time, such as the number of online assets, instantaneous power generated at the current time point, the total energy generated and the corresponding revenue from the farm. In addition, other performance metrics, such as the capacity factor, the time-based and energy-based availability, and the number of generating assets are also reported.

Key features for this view involve:

- Real-time power production for each asset in the site
- Real-time power production as a function of environmental conditions
- Power curves for each asset in the farm, indicating normally-functioning and underperforming assets

Historical Production Trajectory

Nexus Monitor also displays the monthly history of energy production. This helps detect dates during which production KPIs were met.



Automated Report Generation

Report generation is automated by **Nexus Monitor**, such that daily, monthly, and yearly reports with statistics spanning the desired duration can be automatically generated and sent to the designated personnel.

Added Value to Customer

Nexus Monitor provides our client with multiple advantages and benefits:

- 1 Renewable Energy Farm Performance at a Glance**
Management and Operations teams can now see the performance of the entire farm in a single glance.
- 2 Optimized Asset Management**
Renewable energy farm assets can now be monitored and maintained in real time to more efficiently detect and reduce potential downtime.
- 3 Minimized Operation Costs & Increased Revenue Stream**
Operations and maintenance procedures can now be automated, minimizing the time and cost of the maintenance procedure, in addition to increasing the potential revenue from the farm assets.

