

COMBINING ENERGY EXPERTISE AND PREDICTIVE ANALYTICS TO IMPROVE PROFITABILITY

Renewable energy project operators face huge challenges, and huge opportunities, in managing and analyzing the flood of data coming from their assets. They can spend lots of time and resources sifting through the data, and still miss opportunities to optimize projects, identify and address underperforming assets, and prevent failures and downtime.

SparkCognition™ Renewable Suite is the most advanced product available today for solving these challenges and realizing the operational opportunities. As a cloud-based SaaS platform (requiring no hardware or software installation), Renewable Suite is a comprehensive asset management and predictive analytics suite. Cutting-edge yet easy-to-use tools allow owners to extract, manage, and make sense of large streams of wind and solar project data.

Renewable Suite delivers the most actionable results from your data by combining the latest in AI and machine learning with the deep energy domain expertise of the SparkCognition team. Take advantage of predictive recommendations to optimize logistics and improve planning, perform timely maintenance and prevent failures, quickly identify underperforming assets, and ensure effective follow-through—all with the help of SparkCognition experts. Unmatched data analytics, asset management, and O&M planning tools are all integrated into one platform.

The bottom line: the Renewable Suite platform helps you improve profitability by increasing energy production, reducing maintenance costs, and maximizing operational efficiency.

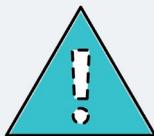


SPARKCOGNITION RENEWABLE SUITE DELIVERS BOTTOM-LINE BENEFITS



INCREASED REVENUE

Automated detection of underperforming assets helps increase energy production.



FEWER FAILURES

Advanced anomaly detection and predictive analytics ensure timely maintenance action, minimizing component damage and reducing failure rates, costs, and downtime.



OPTIMIZED PERSONNEL TIME

Analysts and technicians spend less time processing and managing data and more time working on solutions, resulting in improved outcomes.



BETTER PLANNING

Visibility into future spare parts needs and advanced planning of crane callouts help avoid unnecessary costs.



DESIGNED BY ENERGY EXPERTS FOR ENERGY EXPERTS

Designed from the ground up by energy experts for energy experts, SparkCognition Renewable Suite is a complete asset management and predictive analytics suite. We pair clean energy experts with top data scientists to create best-in-class predictive analytics models.

Our team members have deep experience in renewable energy project systems and component design—from blades and gearboxes to inverters and control systems. Our domain expertise spans controls, loads, electrical, mechanical, and more. This extensive knowledge is built into our platform and its recommendations. And when Renewable Suite identifies an issue, the SparkCognition team is available to assist in root cause analysis, then help you develop and implement corrective actions that save time and money.

Renewable Suite combines the power of data analytics with physics-based digital twin technology, resulting in the most comprehensive models with the highest accuracy and longest possible prediction horizons. By combining our deep operational expertise with the latest in AI and machine learning, Renewable Suite helps you maximize energy production, increase efficiency, and reduce cost.

THE RENEWABLE SUITE PLATFORM MODULES



OVERVIEW



MONITOR



PREDICT



ANALYZE



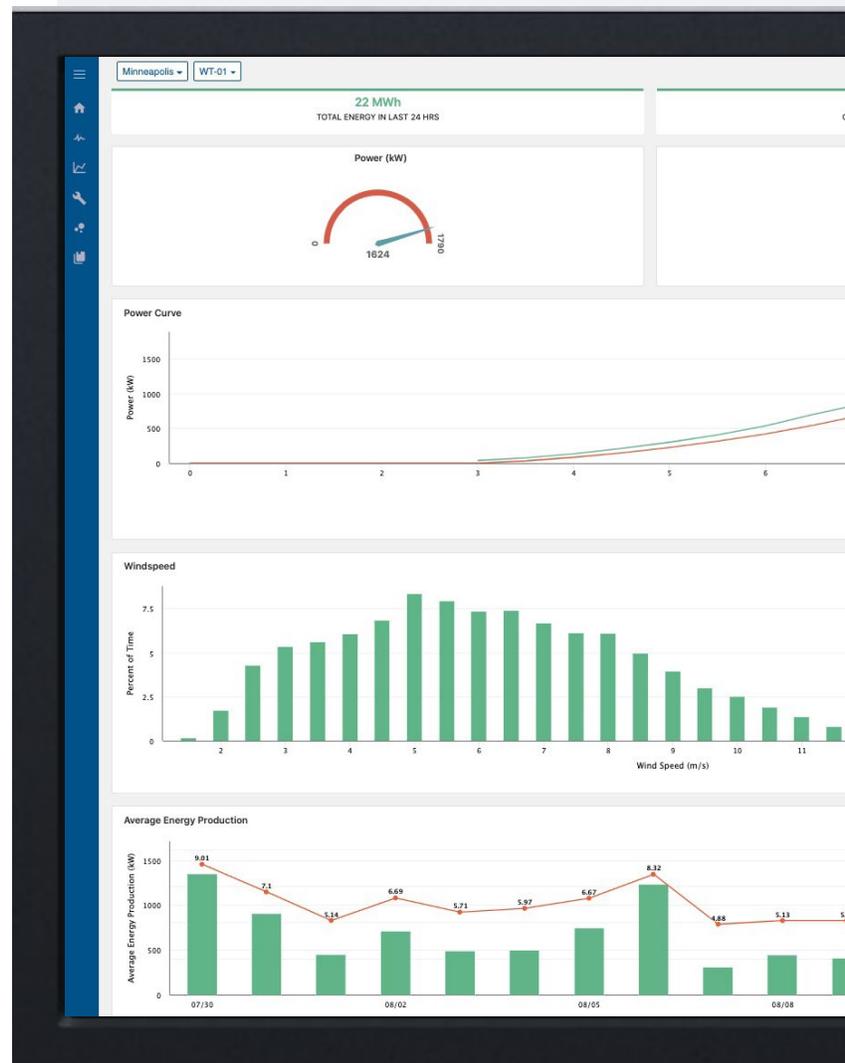
MAINTAIN



REPORT

“Renew Energy chose the Renewable Suite platform from SparkCognition to help us maximize the value of the O&M services we provide our wind energy customers. We have seen significant gains in operational efficiency from this solution, and the team at SparkCognition works closely with our internal team to continuously increase the platform’s functionality.”

**– WADE WEICHMAN,
TECHNICAL DIRECTOR,
RENEW ENERGY**





OVERVIEW

Get the big picture and view actionable alerts for fleet-level KPIs and operations.

- Energy production, capacity factor, and revenue
- Availability, both time- and energy-based
- Assets at risk, by component
- Downtime and lost energy events, by frequency and duration
- Maintenance costs
- Current site environmental conditions (wind speed, direction, temperature, solar irradiation, and more)

MONITOR

Drill down to explore project and device-level KPIs.

- Alarms and alerts
- Fault and downtime by frequency, duration, and lost energy
- Maintenance costs
- Components with early-stage and advanced failure risks
- Site environmental conditions
- Extensive device-specific data
- Configurable dashboards

PREDICT

Combine SparkCognition expertise, physics-informed models, and advanced AI to prevent failures and reduce cost.

- Turbine power curve
- Mechanical components
 - Main bearings
 - Pitch system
 - Generator bearings
 - Hydraulic system
 - Gearbox
- Electrical components
 - Generators
 - Pitch motors
 - Transformers

DELIVERING ASSET MANAGEMENT AND ANALYTIC POWER

ANALYZE

Turn data into valuable insights with extensive, intuitive self-service analytics.

- Generate time domain, scatter, fault, and downtime visualization plots
- Create heatmaps
- Plot and compare multiple turbines to quickly identify anomalies
- Use both preconfigured and user-defined analysis

MAINTAIN

Increase the efficiency of operations, maintenance, and asset management

- Easily track maintenance data
- Examine parts usage and maintenance cost trends
- Intuitively filter, plot, and export data based on any user query

REPORT

Automatically create standard and custom reports.

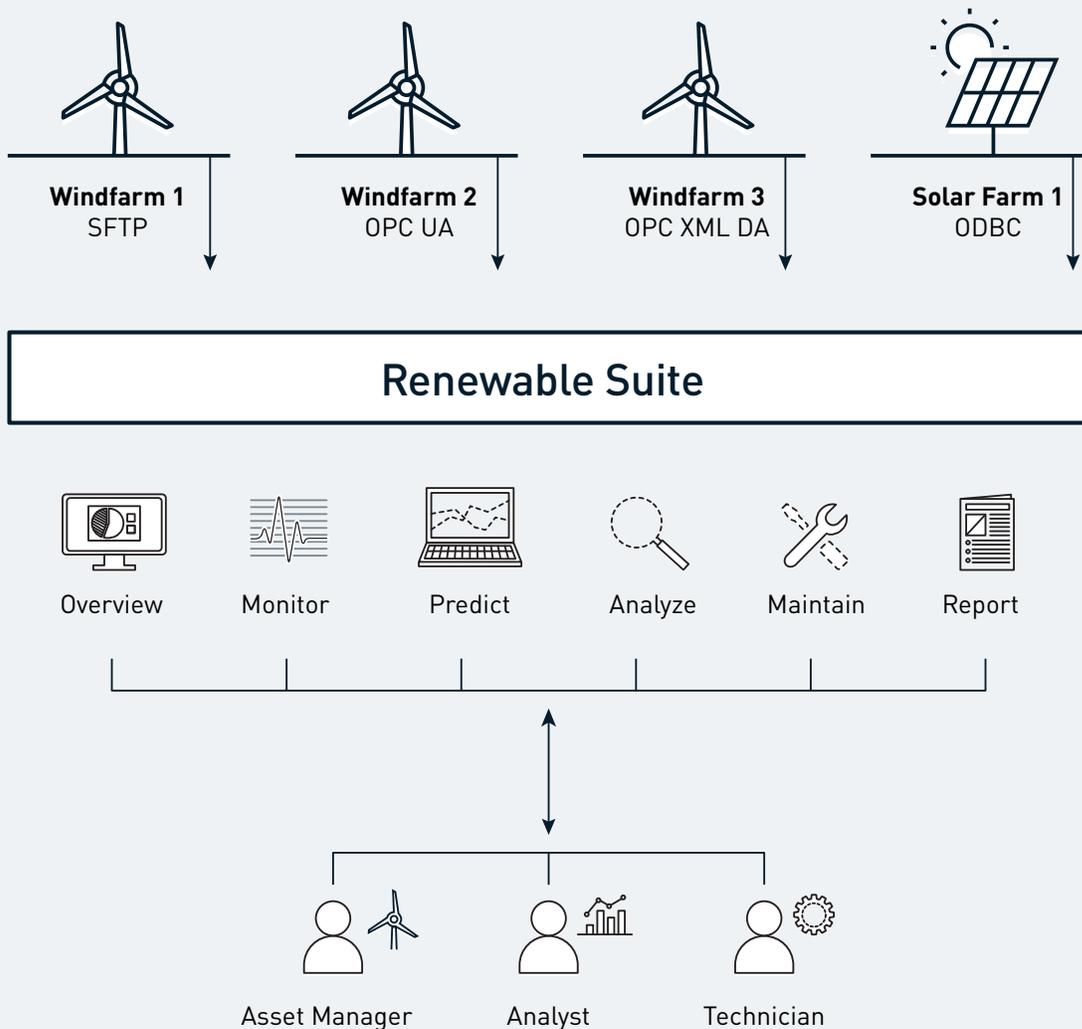
- Save time with automated daily, weekly, and monthly reports
- Create and save customizable report templates
- Use any data in the platform to create custom reports—including production, revenue, availability, fault data, maintenance costs and time, parts usage, and anomaly detection



NETWORK CONNECTION ARCHITECTURE

SparkCognition Renewable Suite can easily connect to wind and solar assets using SFTP, OPC, ODBC, or a SQL database—without the need for additional onsite hardware.

Data is encrypted, securely transferred from the site, loaded into our private encrypted database, regularly backed up, and placed in long-term storage for easy access at any time.



ABOUT SPARKCOGNITION

SparkCognition's award-winning AI solutions allow organizations to predict future outcomes, optimize processes, and prevent cyberattacks. We partner with the world's industry leaders to analyze, optimize, and learn from data, augment human intelligence, drive profitable growth, and achieve operational excellence. Our patented AI, machine learning, and natural language technologies lead the industry in innovation and accelerate digital transformation. Our solutions allow organizations to solve critical challenges—prevent unexpected downtime, maximize asset performance, optimize prices, and ensure worker safety while avoiding zero-day cyberattacks on essential IT and OT infrastructure. To learn more about how SparkCognition's AI solutions can unlock the power in your data, visit www.sparkcognition.com.