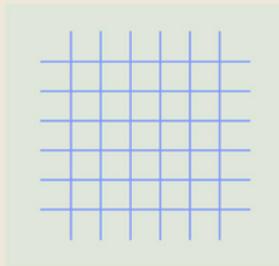


INTELLIGENT SCADA FOR A RENEWABLE WORLD

Unified, contextual, and cyber-secure data infrastructure for the world's fastest-growing energy networks.



The Challenge:

Managing data, intelligence, and resilience at scale.

As renewable energy accelerates toward a projected \$3.56 billion SCADA market by 2030 (12.7% CAGR), its digital complexity is exploding. Solar farms, wind assets, batteries, and grid interfaces now span continents, each embedded with layers of IoT sensors, controllers, and gateways generating terabytes of telemetry every day. These devices speak different languages, operate under different protocols, and feed into fragmented monitoring systems that rarely align in real time. Operators aren't just managing power anymore; they're managing information. And in the race toward automation and AI-driven optimization, poor data integrity has become the new downtime.

- **Data Fragmentation & Context Loss:**

Disparate SCADA, IoT, and analytics systems trap critical insights in silos. Without unified, contextualized data, predictive models underperform and decision-making slows.

- **Latency & Connectivity Gaps:**

Remote solar and wind sites depend on fragile communications. Satellite and cellular links introduce lag, data loss, and blind spots - undermining real-time fault detection, remote control, and production optimization.

- **Cyber & Integration Risk:**

Every new inverter, sensor, or protocol increases attack surface. Hybrid architectures spanning edge and cloud must secure distributed assets while maintaining interoperability and uptime across thousands of endpoints.

- **Complexity of Scale:**

The renewable grid is expanding faster than legacy SCADA can evolve. Each additional site, vendor, and region multiplies integration overhead, forcing operators to manage complexity instead of performance.

- **Compliance & Reporting Pressure:**

Regulators and stakeholders now expect accurate, audit-ready operational and ESG data across every site and vendor. Fragmented telemetry and inconsistent context make it hard to prove performance, safety, and emissions reductions in real time.



The Solution:

mango The Intelligent SCADA Platform

- **Unify Your Entire Energy Ecosystem**

From solar inverters and wind turbines to batteries, substations, and weather sensors, Mango connects every device, protocol, and platform into one intelligent data fabric. No rip and replace. Just seamless, vendor-neutral integration that makes your entire renewable portfolio visible, interoperable, and ready for AI-driven automation.

- **Intelligent Control and Predictive Enablement**

Mango goes beyond monitoring by transforming real-time operational data into structured intelligence that automation and analytics can use. Rule-based logic and anomaly detection let you act before issues escalate, while clean, contextualized data enables your predictive maintenance tools to forecast and prevent failures. Diagnose faults, trigger workflows, and optimize output from one unified platform.

- **Effortless Scalability Across Edge and Cloud**

Mango's modular architecture is built for the hybrid energy world - resilient at the edge, analytical in the cloud. Deploy anywhere, scale instantly, and connect new assets without friction. Growth expands insight, not complexity.

- **Real-Time Context for Smarter Decisions**

Mango delivers more than data streaming. It provides context. Advanced alerts, intelligent thresholds, and contextual analytics allow your team to anticipate change instead of reacting to it. Reliable data means reliable automation.

- **Reporting That Drives Continuous Optimization**

Automate compliance, ESG, and performance reporting with structured and trustworthy data. Mango consolidates operational metrics across assets and time horizons, turning field telemetry into insight that drives smarter, faster decisions.



Intelligent SCADA...Before It Was a Trend

The SCADA market is undergoing a massive transformation as vendors race to evolve legacy systems into intelligent SCADA platforms that integrate IoT, cloud, and AI to enable predictive maintenance, distributed control, and remote optimization. This shift redefines what control systems must do in the era of renewable scale: unify data, operate securely across hybrid networks, and feed automation with trustworthy, contextual intelligence. While others are reinventing their platforms to meet this demand, Mango has always operated this way. From its inception, Mango was architected as an open, data-centric platform built to unify every device, protocol, and data stream into a single contextual layer. Long before AI-ready and cloud-native became industry goals, Mango was already delivering them. Traditional SCADA systems were designed to display data, but Mango was built to understand it. It transforms fragmented telemetry into structured intelligence that automation, analytics, and AI can act on instantly. Whether managing one solar site or hundreds of distributed assets, Mango's hybrid architecture ensures resilience at the edge and visibility in the cloud, maintaining continuous control as systems grow in scale and complexity. Mango is not adapting to the trend; it anticipated it and helped define it. It is not just intelligent SCADA, but the architecture intelligent SCADA was trying to become.

Mango was architected ahead of its time, designed for the challenges now defining the renewable era. It is a deeply intuitive, vendor-neutral platform that brings real-time monitoring, remote control, and intelligent automation together in one seamless system. Whether managing a single site or a global fleet, Mango unifies the entire energy ecosystem, connecting inverters, turbines, batteries, substations, and sensors regardless of manufacturer or protocol. It consolidates real-time data across every site, vendor, and device into a single reliable foundation. Its hybrid architecture ensures resilience at the edge and visibility in the cloud, maintaining continuous control wherever assets live. Mango transforms disconnected signals into clean, contextual data that powers predictive maintenance, accurate reporting, and informed decision-making. It enables renewable operators to see further, respond faster, and scale smarter. By ensuring data accuracy and context across all systems and geographies, Mango strengthens every layer of the technology stack, from automation to analytics, and empowers teams to lead with clarity, control, and confidence.



The Intelligent SCADA Layer for Renewable Energy Operations



From Fragmented Systems to Unified Data

Mango connects every layer of your renewable energy ecosystem, from legacy SCADA and PLCs to modern IoT sensors and cloud platforms. Supporting more than 40 protocols including Modbus, BACnet, OPC, SNMP, MQTT, and REST APIs, Mango normalizes all data into one trusted, real-time environment. It transforms disconnected systems into a unified foundation ready for automation, analytics, and AI-driven optimization.



Built to Manage Complexity at Scale

Whether managing a single solar farm or a global fleet of hybrid assets, Mango creates consistency across evolving technologies, vendors, and geographies. It standardizes visibility, benchmarks performance, and scales effortlessly as portfolios expand. Mango connects legacy infrastructure to modern, AI-ready systems without costly overhauls, ensuring continuity and resilience across every site.



Operational Intelligence, Anywhere

Mango provides complete oversight from any location through a secure, web-based interface that centralizes data, control, and decision-making. Teams can monitor performance, diagnose faults, and automate workflows in real time across wind, solar, and storage assets. With structured, contextual data feeding analytics and AI, operators can act faster, predict failures, and maintain uptime at scale.



Turning Data into Decisions

Mango correlates millions of signals across systems, sites, and time to surface the insights that matter most. It filters noise, prioritizes critical alerts, and converts raw telemetry into clear, actionable intelligence. Operators spend less time chasing alarms and more time optimizing generation, efficiency, and asset life, powered by a reliable, data-driven foundation.



Fast Implementation, Long-Term Value

Lightweight, modular, and hybrid-ready, Mango integrates seamlessly with existing systems and scales across edge and cloud environments. It minimizes deployment time and IT overhead while maximizing return through lasting operational improvements in reliability, forecasting accuracy, and control. Mango shortens time to value, future-proofs assets, and strengthens every layer of renewable operations.

mango Quantifiable ROI

As renewable energy scales worldwide, software-driven SCADA is becoming the fastest growing segment of the industry. Radix IoT helps renewable operators capture that value by moving from reactive maintenance to predictive control. With Mango's unified, edge to cloud architecture, teams gain reliable visibility across solar, wind, and storage sites, detecting anomalies early, optimizing output, and preventing costly downtime.

Increase Uptime Performance by Up to 61%

Advanced monitoring and predictive insight maximize generation and system availability, reducing unplanned outages across geographically dispersed assets.

Cut On-Site Labor Time by 22%

Real time analytics and guided fault detection let field teams act faster and fix issues sooner, shortening repair cycles and improving continuity.

Accelerate ROI Through Data Integrity

By turning fragmented SCADA signals into trusted, contextualized intelligence, Mango improves decision accuracy, boosts efficiency, and converts operational reliability into measurable financial gains.

Simplify Scalability by 86% Reduction in Field Labor

Mango's modular, cloud based software deploys quickly using existing telemetry, enabling rapid commissioning of new solar, wind, or battery sites without rip and replace.





Mango Driving ROI



After implementing Mango by Radix IoT, a leading renewable energy operator transformed how it monitored and managed its distributed portfolio of solar, wind, and battery storage sites. Before Mango, teams were dependent on siloed OEM dashboards, delayed data, and manual field checks that made it difficult to maintain visibility and reliability across large geographies. Mango now serves as the intelligent SCADA layer connecting inverters, turbines, substations, and storage systems into a unified, contextual data foundation. Sitting above existing OEM and SCADA systems, Mango delivers trusted, real-time data that feeds analytics, automation, and operational forecasting tools. With one consistent view across all assets, the operator improved uptime, streamlined maintenance, and reduced operational costs while achieving measurable gains in efficiency and scalability.

Measurable System Gains

- **Unified Data Structure and Visibility**
- **Reliable Monitoring Across Solar, Wind, and Storage Assets**
- **Faster Fault Detection and Response**
- **Centralized Reporting and ESG Oversight**
- **Multi-Vendor, Multi-Protocol Integration**
- **Predictive Maintenance Readiness**

In another case, a regional renewable energy provider facing high maintenance costs and data fragmentation used Mango to consolidate information from multiple OEM platforms and legacy SCADA systems into one resilient, software-driven layer. The result was real-time visibility across remote sites, faster fault detection, and greater coordination between operations and maintenance teams. By integrating seamlessly across both edge and cloud environments, Mango enabled predictive readiness, reduced downtime, and became the backbone of intelligent operations—empowering renewable energy producers to scale with confidence and precision

Smarter Energy Starts with Smarter SCADA

Unlock the full potential of your renewable infrastructure.



Ready to streamline your operations? Discover how Mango by Radix IoT can boost uptime, cut costs, and scale your portfolio - contact us for a demo today.

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