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SCADA in Renewable Energy Market by Hardware (PLCs, Remote Terminal Units, HMIs, Communication Systems), Software (On-premises, Cloud-based), Services (Professional, Managed), Sector Type (Solar, Wind, Hydropower) and Region - Global Forecast to 2030

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Abstracts

The global SCADA in renewable energy market is expected to grow from USD 1.96 billion in 2025 to USD 3.56 billion by 2030, registering a CAGR of 12.7% during the forecast period. SCADA systems are crucial in real-time monitoring, management, and optimization of renewable energy resources. These systems enable operators to monitor energy output, identify faults, and maintain effective integration with the grid. With the increasing proportion of variable renewable energy in worldwide power generation, the demand for advanced control systems has grown. SCADA solutions offer essential functionalities, such as predictive maintenance, remote diagnostics, and data-driven decision-making, which assist operators in minimizing downtime and enhancing asset performance. The market is further driven by escalating investments in smart grid technologies, government support for clean energy initiatives, and the shift toward decentralized energy systems.

“Services segment held significant share of SCADA in renewable energy market in 2024.”

The services segment accounted for a significant share of the SCADA in renewable energy market in 2024. The increasing demand for system integration, maintenance, consulting, and support services across renewable energy projects primarily drove this growth. As utility-scale solar and wind farms become more complex and geographically

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distributed, service-based offerings are vital in ensuring reliable SCADA operations and minimal system downtime. The need for efficient monitoring, remote diagnostics, and predictive maintenance has made professional SCADA services essential to asset management strategies. Moreover, the shift toward cloud-based SCADA systems and smart grid frameworks drives the need for customization, cybersecurity solutions, and training initiatives. Service providers assist in optimizing current SCADA setups, incorporating them with new technologies, and improving long-term system performance. Both governments and private developers also focus on after-sales services and technical support to align with evolving grid compliance and energy efficiency regulations. With the rise in renewable energy use and the digital transformation of power systems, the services sector is projected to continue being a crucial factor for SCADA system reliability, scalability, and operational excellence in 2024.

“Wind energy segment is projected to record significant CAGR between 2025 and 2030.”

Based on sector type, the wind energy segment is anticipated to grow at a significant CAGR in the SCADA in renewable energy market in 2024. This is fueled by the global development of onshore and offshore wind projects and the increasing demand for advanced monitoring and control systems to ensure efficient operations. As wind farms are often in remote or offshore environments, SCADA systems are critical for managing turbine performance, detecting faults, and reducing operational downtime. SCADA platforms allow operators to remotely monitor turbine health, track wind speed, and direction, and optimize power output in real time. Modern wind SCADA solutions incorporate advanced functionalities, such as condition-based monitoring, predictive maintenance, and AI-driven analytics, to improve reliability and cut costs. The rising installation of large-scale wind farms in regions such as Europe, Asia Pacific, and North America further drives the need for scalable and secure SCADA systems. As the grid integration of variable wind energy grows, SCADA systems become central in ensuring energy stability and compliance with regulatory standards. With rising investments in wind power and smart energy infrastructure, the wind segment is poised to maintain strong growth momentum over the coming years.

“Europe is likely to account for second-largest market share in 2030. “

Europe is expected to hold the second-largest share of the SCADA in renewable energy market by 2030, supported by the strong commitment to clean energy transition and advanced digital infrastructure. The European Union’s climate goals and renewable

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energy targets have led to a significant increase in deploying wind, solar, and hydropower projects. The well-established power grid in Europe and substantial investments in smart grid technologies further boost the adoption of SCADA. Several countries upgrade their energy systems and incorporate digital solutions to enhance performance and reduce operational risks. Additionally, regulatory support and funding aimed at digital energy transformation facilitate the rollout of SCADA platforms. With a strong emphasis on innovation, cybersecurity, and energy efficiency, European stakeholders prioritize sophisticated SCADA solutions to effectively manage renewable energy assets. These elements collectively establish Europe as a significant player in the global SCADA in renewable energy market.

Extensive primary interviews were conducted with key industry experts in the SCADA in renewable energy market space to determine and verify the market size for various segments and subsegments gathered through secondary research. The breakdown of primary participants for the report is shown below.

The study contains insights from various industry experts, from component suppliers to Tier 1 companies and OEMs. The break-up of the primaries is as follows:

By Company Type: Tier 1 - 45%, Tier 2 - 30%, and Tier 3 - 25%

By Designation: C-level Executives - 35%, Directors - 45%, and Others - 20%

By Region: Asia Pacific - 35%, Europe - 25%, North America - 30%, and RoW - 10%

The SCADA in renewable energy market is dominated by a few globally established players, such as Siemens (Germany), Schneider Electric (France), ABB (Switzerland), Emerson Electric Co. (US), and Rockwell Automation (US). The study includes an in-depth competitive analysis of these key players in the SCADA in renewable energy market, with their company profiles, recent developments, and key market strategies.

Research Coverage:

The report segments the SCADA in renewable energy market and forecasts its size by component (hardware, software, services), sector type (solar, wind, hydropower), and activity type (generation, transmission, distribution). It also discusses the market's drivers, restraints, opportunities, and challenges. It gives a detailed view of the market

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across four main regions (North America, Europe, Asia Pacific, and RoW). The report includes a supply chain analysis of the key players and their competitive analysis in the SCADA in renewable energy ecosystem.

Key Benefits of Buying the Report:

Analysis of key drivers (Unprecedented scale of renewable deployment, distributed and remote nature of renewable energy sources, rising variable renewable energy penetration necessitating advanced grid integration and SCADA deployment), restraint (High initial investment costs for SCADA deployment, complexity and customization requirements of SCADA systems), opportunities (Rising popularity of floating solar SCADA solutions, increasing development of cloud-based SCADA systems, challenges (data latency and real-time communication limitations in SCADA systems, cybersecurity threats)

Service Development/Innovation: Detailed insights on upcoming technologies, research and development activities, and new product launches in the SCADA in renewable energy market

Market Development: Comprehensive information about lucrative markets—analysis of the SCADA in renewable energy market across varied regions

Market Diversification: Exhaustive information about new products and services, untapped geographies, recent developments, and investments in the SCADA in renewable energy market

Competitive Assessment: In-depth assessment of market shares, growth strategies, and service offerings of leading players, such as Siemens (Germany), Schneider Electric (France), ABB (Switzerland), Emerson Electric Co. (US), and Rockwell Automation (US)

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