### EnOS<sup>™</sup> Renewables — SCADA & EMS

#### Best-in-class solution for renewable asset monitoring and control

In the fast-evolving landscape of renewable energy, operators and utilities face numerous challenges in managing diverse energy assets efficiently and effectively. Complexity, grid compliance, operational efficiency, cost reduction, as well as ensuring safety and security are just a few of the hurdles they encounter daily.

#### Simplifying Renewable Energy Management with SCADA & EMS

Powered by AI and IoT, this comprehensive solution seamlessly integrates SCADA, plant control and optimal energy management capabilities. This integration ensures efficient operations, secure plant management and accurate decision-making.



#### Unlocking the Full Potential of Your Renewable Energy Assets



#### **One-Stop Solution**

From solution design to commissioning services, supporting both local plant control and centralized control, with hardware, software and long-term services.



### **Grid Compliance Experience**

15 years of grid-connected experience across the world, managing more than 200GW of energy assets in 2,000 power plants.



#### **High Accuracy and** Performance

High control accuracy and response times to meet the strictest requirements of latest grid codes in different countries.

#### cess and Simple Connectivity

embedded protocol library for simple integration into the existing machinery and network infrastructure.



## Robust Cyber Security

Cybersecurity is integral to the overall solution with segmented networks, VPN-protected communication, redundant hot-standby, etc.

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Configurable web-based HMI.



#### **Flexible and Scalable** Architecture

Modular and scalable architecture which can be customized and expanded according to the specific requirements of each project site.

#### Precise Insights into Operating Environments for Grid Compliance



360-Degree View of Asset Data

Track plant performance and operation data from all systems to individual equipment. Drill down to individual assets and inspect from an intuitive hierarchy of physical and digital diagrams.



**Data Visualization and Insights** Standardize KPIs and real-time visibility by delivering enriched data in context to operations and maintenance.



#### **Closed-Loop Control for Grid** Compliance

Operate the plant easily with the integrated user interface to comply with complex grid regulations using parametrized control settinas.

#### **Use Cases**



#### Utility-Scale Solar PV Plant in Chile

#### [PV — 104 MW]

One of the largest solar projects in Latin America used SCADA & EMS for comprehensive energy management, integrating solar PV, substation and solar tracking system monitoring.



#### **Utility-Scale BESS Station in Singapore**

#### BESS — 200MW / 200MWh

ASEAN's largest BESS, featuring 200MW / 200MWh energy storage systems from two BESS OEMs, enhances grid resilience by enabling energy trading and providing critical grid services such as contingency reserve and frequency regulation, adding substantial economic value.



#### Large-Scale Grid Service BESS in UK

#### BESS — 150MW / 300MWh

This energy storage project was designed for participation in the UK's ancillary services, capacity and wholesale electricity markets. SCADA & EMS provided monitoring and control of the storage assets and have successfully completed the G99 testing required by the UK National Grid ESO.



#### **Utility-Scale Peninsula Wind Farm in Mexico**

#### Wind — 90MW

As part of Mexico's first and second renewable energy auctions, the wind farm required a robust, scalable solution to support high-precision monitoring, grid compliance, and asset control. Univers deployed a combined SCADA, Power Plant Controller (PPC), and EMS solution to provide real-time oversight and optimise wind turbine performance.



#### **Utility-Scale Solar Hybrid Power Plant in Indonesia**

#### PV — 50MW, BESS — 20MW / 14MWh

Univers seamlessly integrated SCADA, EMS, and Hybrid PPC functionalities for comprehensive monitoring, coordinated control and enhanced grid integration for the hybrid power plant. This powerful platform allows plant operators to optimize performance, support auxiliary services and maximize power generation revenue for their customers.



#### **Net Zero Industrial Park in China**

#### <u>Wind — 440MW, PV — 1</u>0MW, BESS — 80MW / 320MWh

The world's first zero-carbon industrial park in Erdos, Inner Mongolia, generates 10 TWh of green electricity annually, with 80% supplying 100% zero-carbon energy within the park and 20% used for energy market trading. The entire energy system is managed by Univers' SCADA & EMS, enabling automated closed loop control.

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Univers is the global leader in Al for energy.

Our EnOS<sup>™</sup> platform empowers enterprises across industries to solve complex energy challenges with intelligent, data-driven insights.

With 280 million devices connected, 788GW of renewables managed, and a global network of 1200+ customers, we are the only global technology partner offering a truly comprehensive, end-to-end energy management solution, supporting enterprises at every stage of their energy transition journey.







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