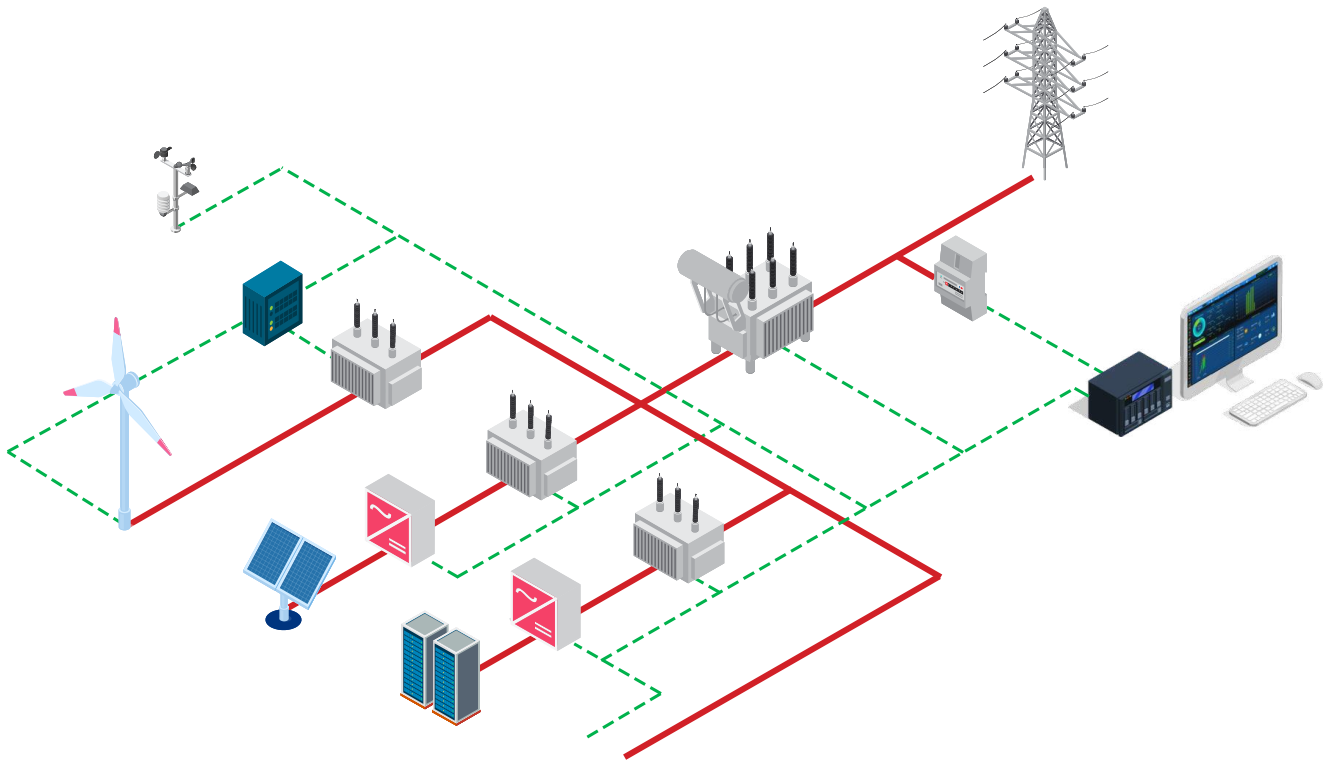


ATS's @ReHybrid™ solution is a fully integrated control and monitoring system for renewable power plants, combining BoP SCADA/EMS and hybrid PPC to ensure operational stability and reliability. Designed to meet grid code requirements, it not only offers seamless control and supervision throughout the plant's lifecycle but also promotes the sustainable development of renewable energy.



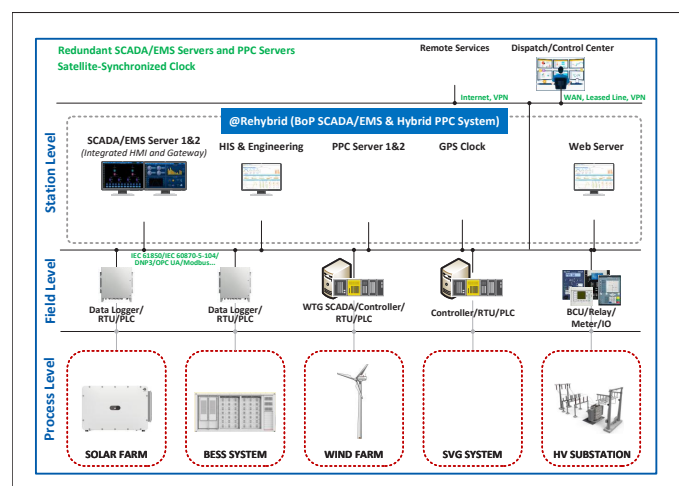
Overview of @Rehybrid™

Comprehensive BoP SCADA/EMS and Hybrid PPC Features:

- ◆ **Full Control and Monitoring:** Comprehensive SCADA/EMS and hybrid PPC functions ensure grid code compliance for high-voltage substations and power plants.
- ◆ **Extensive Protocol Support:** Compatible with IEC 61850, Modbus, IEC 60870-5-104, DNP3, MQTT, and more, with expansion options.
- ◆ **Time-Series HIS Integration:** Leverages a scalable HIS for real-time analytics, power generation forecasting, failure detection, and ensuring continuous availability.
- ◆ **User-Friendly Interface:** Features an intuitive graphical interface that reduces operator training time and minimizes the need for advanced computer skills.
- ◆ **High Capacity Management:** Supports hundreds of IEDs and up to 256,000 data points for various project needs.
- ◆ **Flexible and Scalable Design:** Provides a modular, scalable architecture suited for managing various technologies, including PV inverters, SVG/SVC, BESS/PCS, and wind turbines from different vendors.
- ◆ **Operational Reliability:** Ensures high availability with a single-fault-tolerant design and redundant configuration.
- ◆ **Grid Stability Assurance:** Controls active and reactive power to

maintain grid stability across manufacturers.

- ◆ **Cost Efficiency:** Lowers commissioning and maintenance costs for power plants.



System Architecture @Rehybrid™

@Rehybrid™ - Complete Solution for Monitoring, Control, and Optimization of Hybrid Power Plant

1. Data Acquisition and Processing:

◆ Key Features:

- ◆ Supports multiple protocols: IEC 61850, Modbus RTU/TCP, IEC 60870-5-104, DNP3, OPC DA/UA, and more.
- ◆ NERC-CIP compliance with best practices.
- ◆ Certified by DNV-GL (KEMA) for IEC61850, IEC60870-5-101, and IEC60870-5-104.

2. Hybrid Realtime Control and EMS Functions:

- ◆ The A-PPC unifies wind, solar, and battery systems, ensuring global grid code compliance and efficient renewable energy management:
- ◆ Open-Architecture: Supports flexible control loops and redundancy.
- ◆ High Performance: Real-time OS with 20-ms sampling for rapid processing.
- ◆ Versatile Communication: Compatible with Modbus RTU, DNP3, IEC 61850, IEC 60870-5-104, and IEEE C37.118.
- ◆ Wide Compatibility: Works with major PV inverters, BESS, and wind turbines.
- ◆ Grid Code Compliance: Uses Digital-Twins and HIL simulations for performance verification.
- ◆ Comprehensive Control: Includes active/reactive power control, BESS scheduling, energy optimization, and grid support for frequency regulation and fault ride-through.

3. Time-Series Historical Information System:

◆ Key Features:

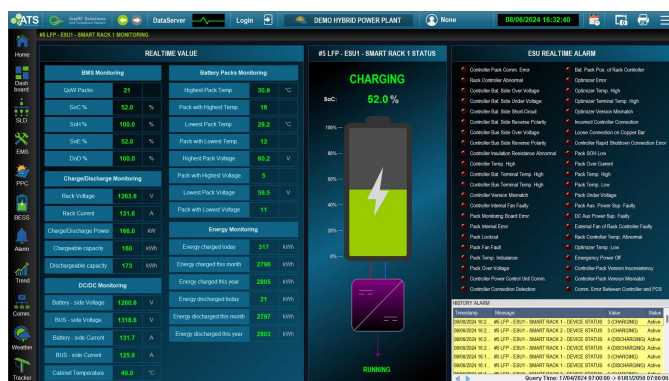
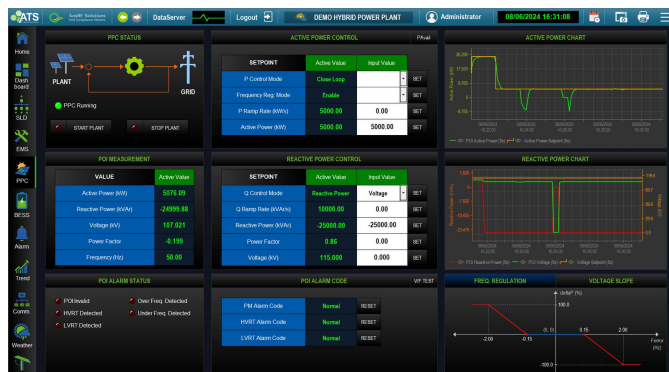
- ◆ SmartHIS stores all BoP SCADA/EMS and PPC system data, capturing time-series data from both normal and disturbance operations.
- ◆ No-SQL Database: Efficiently handles large datasets with speed and flexibility.
- ◆ Time-Series Management: Allows storage and retrieval of data at any resolution for detailed or broad analysis.

◆ HIS Applications:

- ◆ Reporting and WEB Applications

4. Intuitive Human-Machine Interface:

- ◆ The HMI enables seamless communication with @Rehybrid™ control systems, ensuring efficient plant operations with full data access:
- ◆ Centralized Operation: Monitors and controls power plants and HV substations from a central location.
- ◆ Real-Time Monitoring: Displays live data for instant operational tracking of key devices.
- ◆ Supervisory Control: Offers manual control with customizable displays for non-automated functions.
- ◆ Alarm Management: Delivers real-time sound and visual alerts for immediate event response.
- ◆ Analysis & Trending: Tracks performance and detects anomalies through data analysis and trending.



@Rehybrid™ Real-time Data, Real-time Decisions



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