Power & Energy Management System (PMS/EMS)

Control your energy future

A holistic, scalable solution for **RES, BESS, and industrial facilities**, combining intelligent control, real-time supervision, and smart automation

PROTASIS
engineering & consulting
with power, we perform

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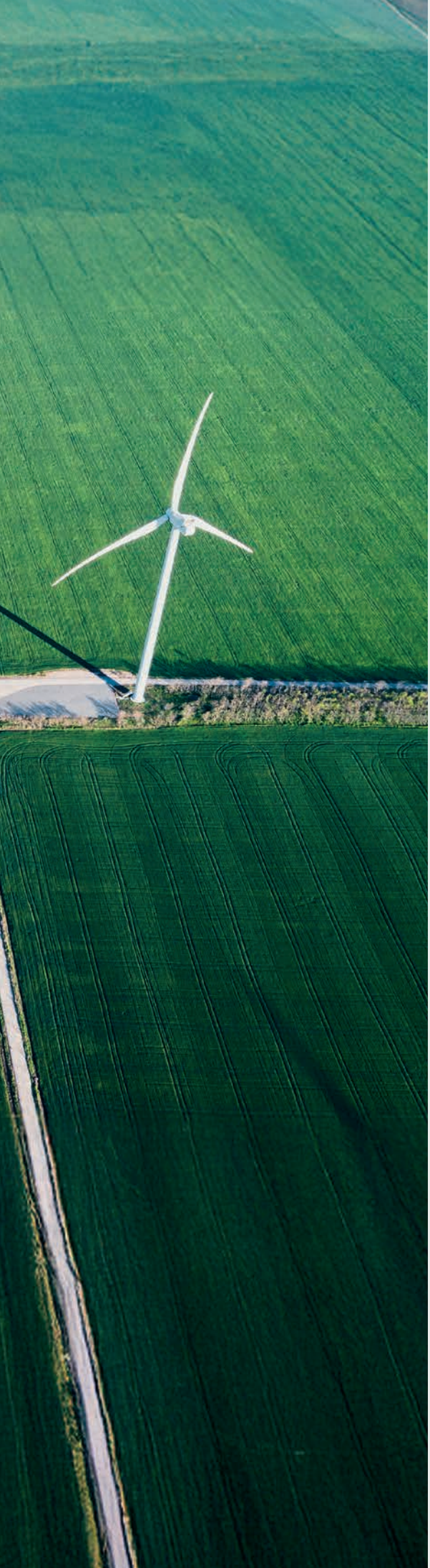
CHALLENGES & MARKET NEEDS

Energy is evolving and so are its challenges



As renewable penetration grows, energy systems face new levels of complexity.

Fluctuating generation from renewables, peak demand costs, and the need for grid stability are driving the importance of smarter, more efficient energy management.

Businesses and operators need smarter, more flexible control; systems that can balance distributed generation, storage, and consumption efficiently and reliably.

Key challenges:

- Intermittent renewable generation and energy fluctuations
- High energy costs during peak demand
- Grid instability and voltage/frequency deviations
- Coordination between different assets (PV, wind, storage, gensets, loads)
- Need for seamless transition between *grid-connected* and *islanded* modes

THE SOLUTION

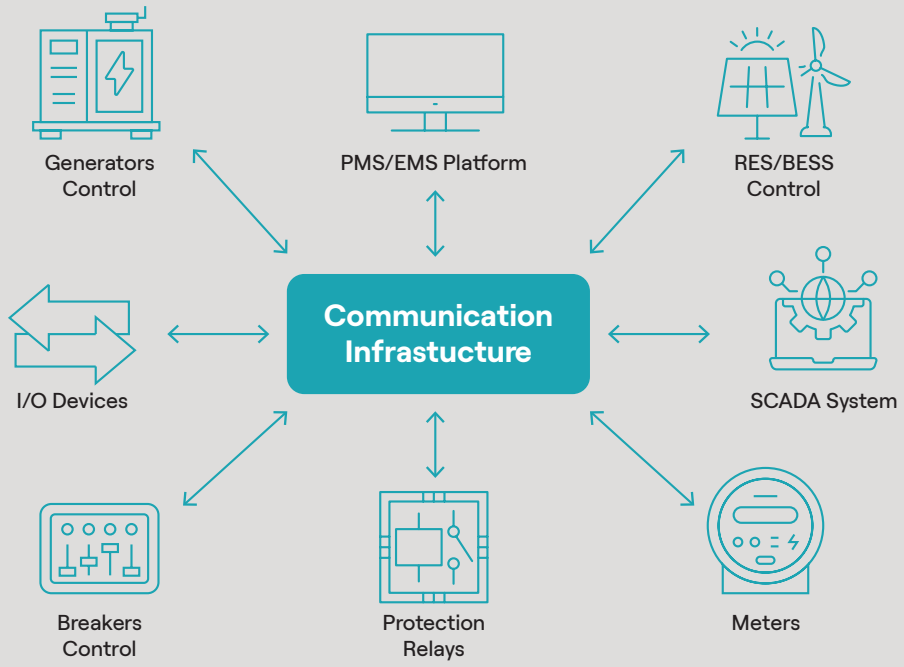
PROTASIS® PMS/EMS
The brain behind your energy ecosystem

The **PROTASIS® Power & Energy Management System (PMS/EMS)** is an advanced control and supervision solution designed to manage hybrid power plants combining **Renewable Energy Sources (RES), Battery Energy Storage Systems (BESS),** and **conventional assets.**

From microgrids to utility-scale hybrid plants, it intelligently monitors and optimizes power flows, ensuring smooth operation and stability under any condition, whether connected to the grid or operating in island mode.

01 | **Core functionalities:**

- Real-time coordination of RES, BESS, and loads
- Seamless transition between grid and island operation
- Active and reactive power control for voltage and frequency stability
- Load shedding and energy balancing strategies
- Synchronization and smooth reconnection to the grid
- Advanced SCADA interface for visualization, alarms, and remote control



02 | **Technical Highlights:**

- Supports both grid-connected and islanded operating modes
- Centralized supervisory control for all subsystems
- Active/reactive power setpoints, load prioritization, and intelligent energy dispatch
- Flexible architecture for easy integration of third-party assets
- Communication via standard communication protocols (Modbus, OPC, and others)
- Local and cloud-based architectures are supported, enabling flexible deployment tailored to customer requirements

03 | **Applications:**

- Renewable-based hybrid power plants
- Industrial and commercial sites seeking energy independence
- Island grids and remote power systems
- Utilities integrating distributed energy resources (DERs)
- Facilities requiring reliable backup or peak shaving solutions

The PROTASIS® PMS/EMS acts as the supervisory controller that orchestrates every component, securing energy continuity, reliability, and efficiency.

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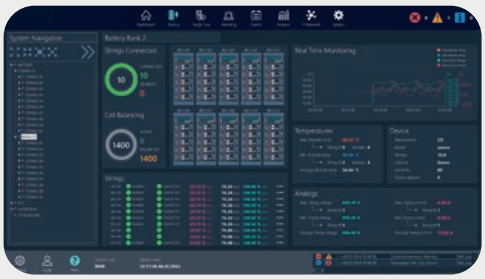
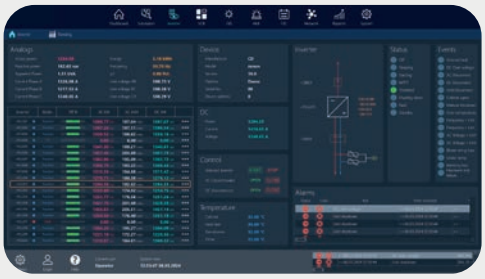
PRODUCT FUNCTIONALITIES & BENEFITS

Supervisory Control for every Energy Asset

One platform, total control over your energy system





Why choose PROTASIS® PMS/EMS?

01 | Efficiency & Cost optimization

- Reduces energy losses and operational costs
- Defers costly infrastructure upgrades
- Maximizes renewable utilization and storage performance

02 | Reliability & Stability

- Maintains system voltage and frequency under all conditions
- Ensures safe, coordinated operation of all assets
- Provides backup power and smooth islanding transition

03 | Flexibility & Scalability

- Fully modular and vendor-agnostic
- Supports IEC 61131 programming language and various communication protocols
- Scales from small microgrids to large hybrid power plants

04 | Automation & Control

- Intuitive SCADA interface for cybersecure, real-time insights and historical analysis
- Remote monitoring, alarming, and performance dashboards
- Optimal energy dispatch and smooth islanding transitions

PROTASIS, and its operations, are certified according to the latest applicable international standards, regarding the respective Management Systems.

ISO 9001 : 2015 | ISO 14001 : 2015 | ISO 37001 : 2017 | ISO 45001 : 2018 | ISO 27001 : 2022

SUCCESS STORY

Agios Efstratios project

The Agios Efstratios project pioneers sustainable energy through a hybrid system integrating wind, solar, battery storage, and district heating. At its core, PROTASIS' advanced Hybrid Energy Management and Control System (HEMCS) enables over 85% renewable electricity coverage, providing a replicable model for green energy transitions on remote islands.

01 | **HEMCS Responsibilities:**

- Ensures reliable transitions among operational modes, interfacing with local SCADA and the centralized Energy Control Center (ECC)
- Supervises medium-voltage switchgear operations and monitors continuously with the Center for Renewable Energy Sources and Saving (CRES)
- Manages operational transitions, system protection during faults, and controls district heating loads based on renewable surplus

By combining static and dynamic studies, PROTASIS optimized control parameters and protection schemes, ensuring safe, stable, and efficient operation.

02 | **Technological Innovation & Replicability:**

- HEMCS demonstrates advanced integration and real time optimization
- The project serves as a scalable model for islands and remote communities worldwide transitioning to renewable energy

Agios Efstratios exemplifies how integrated renewable energy systems, coupled with smart control and storage can transform isolated communities into models of sustainable energy independence, supporting Greece's and the EU's renewable energy and sustainability goals.

"Innovation in Energy" Award 2025 Energy Initiative Awards (HAEE)

COPADATA Gold Partner

PROTASIS is a gold partner of COPA-DATA, symbolizing a longstanding partnership that continues to strengthen over time.

Transform the way you manage power and energy with advanced digital solutions that enhance reliability, reduce operational costs, and drive business growth

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