

Explore Altenso's advanced energy management system for renewable power plants

We support plant operators and project developers of renewable energy assets, including green hydrogen facilities, with an in-house developed, tailormade management system designed to enhance overall plant profitability.
Our new energy management system optimizes plant operations according to plant specific use cases, such as efficiency maximization, cost reduction, schedule fulfillment or availability.
The system is designed to manage electricity generation and industrial loads in on-grid and off-grid environments. For hydrogen use cases, the system also provides solid foundation for green hydrogen certification.

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The intelligence that optimizes your hydrogen production



Managing complex energy flows

- Dispatch electrolyzer, electricity production, battery storage, and other components
- Manage off-grid & on-grid operations
- Link your production to the used electricity
- Fulfill time & regional correlation requirements



Monitoring and forecasting

- Assess plant wide energy flows in real-time
- Make detailed analysis of operational data
- Create standardized reports
- Exploit forecasts for REN production
- Implement hydrogen production schedules
- Predict your hydrogen output for the next weeks
- Predict energy demand of your auxiliaries

Optimizing green hydrogen production

- Minimize plant down time periods
- Fulfill production schedule
- Maximize production efficiency
- Produce green hydrogen according to regulations

We deliver grid-friendly hydrogen power conversion systems with integrated energy management system.

For detailed consultation on your individual integrated hydrogen production, please approach our sales and business development team.

SMA Altenso GmbH, a wholly owned subsidiary of SMA Solar Technology AG, is committed to fostering the flexible use of renewable energies through innovative system solutions based on SMA products, holistic engineering, and comprehensive services. With a total capacity of over 1 GW of converter power sold for hydrogen applications, the company is a global leader in the power-to-gas sector.

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Functions & features

Energy	Element	Details
Energy flow manager	REN plant	Manage electricity production
	Electrolyzer	Manage hydrogen production for different electrolyzer types & technologies
	Energy storage	Manage battery system as intermediate storage & ramp rate control for the electrolyzer
	Hydrogen storage & filling station	Supervise and plan storage levels and energy demand of compressors
	Auxiliary demand	Supervise and plan the energy demand of other loads in the system
	Grid connection	Decide whether off- or ongrid production is more suitable
	Additional components	Integrate new plant components into the energy management and plant optimization (e.g., gensets)
Optimization	Optimization goal	Define, select, and prioritize your production goals
	Intra-day	Optimize plant operation with a 5 minute resolution for the next 24 hours
	Day-ahead	Optimize plant operation with a 1–hour resolution for up to 7 days
Data analysis	Real-time	Display & analyse real-time energy flows and the production forecasts for all plant components
	Historical	Analyse your historical data in depth for > 1,000 parameters which can be individually selected
Connectivity	Communication protocols	Modbus TCP or others via protocol converters (e.g., Profinet, DNP3, OPC-UA, MQTT)
	External forecasts	Configurable APIs for forecasts (renewable energy production, weather, markets) and production schedules
	SCADA system & component controllers	Read: Agnostic to producer and controller type Write: Compatible with SMA devices
Safety	Cyber security	Fulfillment of high standards according to IEC 62443
	High availability	Implementation of a mirrored system possible to increase uptime
	Rights & roles	Create Users profiles and assign the required rights
	Cloud connection	Additional cloud connection possible for data storage and analysis, if required
Installation	Pre-configured industrial PC or server rack	Dependent on specific use case and plant complexity

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