



# Energy insights

ABB e-mesh EMS

Energy Management System

Improve energy efficiency, optimize production, boost profitability and reduce environmental footprint with insights into energy prices, loads and renewable forecasts

# Energy management system (EMS) for distributed & renewable energy resources

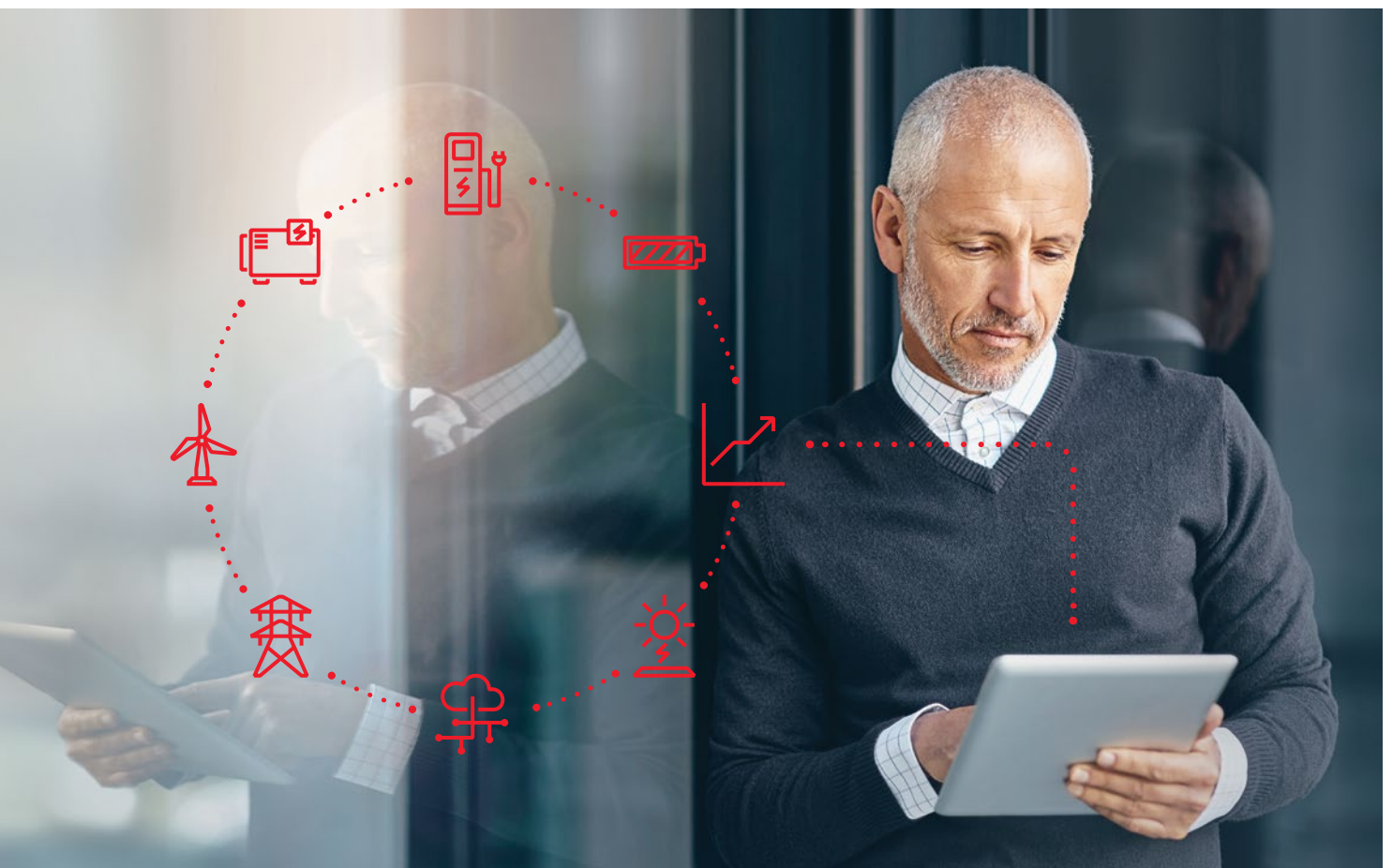
Energy optimization application to improve production and reduce system costs

Distributed energy resources are experiencing rapid growth; at the same time, there is a rising need for digitalization and decarbonization. Today's challenges call for an advanced energy management system to control, optimize and coordinate all assets.

ABB e-mesh™ EMS is specially designed to manage distributed energy and renewable resources, conventional power generation sources, and loads like electric vehicle chargers. e-mesh EMS is a flexible and highly scalable application that allows for easy expansion as the number of energy resources and the size of the operation grows.

#### Key benefits:

- Increases system reliability and resilience
- Provides quick return on investment
- Reduces CO<sub>2</sub> emissions and minimizes energy costs without negatively impacting daily operations
- Helps predict and avoid site interruptions to ensure continuous operation
- Leverages price, load and renewables forecast to optimally plan and manage the behavior of energy assets
- Increases profitability by allowing sales of excess power production
- Enables intra-day and day-ahead market participation and trading
- Provides useful, insightful reports and summaries for business executives



# Optimize performance, improve energy efficiency and minimize costs

The e-mesh EMS application is built on a state-of-the-art platform that allows full interoperability and scalability to run at the network edge. The cyber-secure application comes with four key modules: Optimize, Forecast, Report and Connect.



01

01 Dashboards and reports

## EMS Optimize

EMS Optimize helps in planning, scheduling and setting of operating profiles for sites and distributed energy resources. This module allows users to evaluate custom optimization scenarios and deploy the best solution.

Available planning horizons include:

- Intra-day (rolling horizon optimization over the course of 24 hours)
- Day-ahead (offline and simulated optimization)

## EMS Forecast

EMS Forecast collects and harmonizes forecast data and makes it available to the EMS Optimize module. This module also supports energy trading and bid generation by providing actionable insights.

## EMS Report

EMS Report provides operational and business reports that include information such as:

- Revenues from sales of excess energy
- Costs of energy purchased from the grid
- Production from conventional generation
- CO<sub>2</sub> emissions measures

In this module, past, current and next-day KPIs are stored locally and can be accessed through a web user interface or secured web APIs.

## EMS Connect

This module comes with connectivity options for integration of SCADA and similar systems. Third-party systems such as forecast providers and trade systems can also be easily integrated with the application, allowing exchange of meaningful data.



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