



SIEMENS



# Efficient microgrid management for institutional power grids

by optimizing operational, environmental and economic aspects

[siemens.com/microgrids](https://www.siemens.com/microgrids)



## The challenges of renewable energy

Rising energy prices, reliable and resilient energy are increasingly becoming concerns to large energy consumers. Fundamental business changes such as market deregulation offer new opportunities for corporations, governmental organizations, municipalities, universities to manage their energy supply optimized for their own use. Siemens delivers tailored solutions to meet energy goals, like energy reliability, sustainability, resiliency or economic aspects. By adding renewable generation sources and storage to the grid, the reliability of energy supply increases, and costs are reduced.



As multiple generation sources and energy assets are added to a microgrid, advanced control functionality is required to ensure the system is operating as efficiently as possible. To meet decentralized infrastructure development needs and provide advanced functionality to maximize its value, Siemens supplies the scalable Microgrid Management Systems and solutions based on automation equipment in the SICAM series and software solutions based on our leading Spectrum Power™ platform.



## Operation, monitoring, administration, planning – all under one roof

Siemens Microgrid Management Systems monitor and control grids with large and small distributed energy generators, renewable assets, storage and loads. Our scalable system helps to automate, display, alarm and control all elements in the grid, thus assuring the needed quality of supply at all times. It generates schedules, automatically monitors their observance and readjusts them in real time. This is enabled by automatic switching sequences based on rules or forecasts that draw on a large number of constantly updated parameters – such as weather forecasts, type of plant or power price. Siemens solutions also help you efficiently incorporate such as cogeneration plants.

Intelligent networking of your energy infrastructure using Siemens Microgrid Management Systems not only increases the added value of your power supply, but also protects its operation from outages, regardless of whether you're connected to the supply network or not. Our solutions are flexible and expandable – today and in the future.

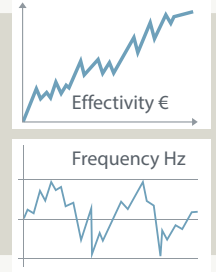
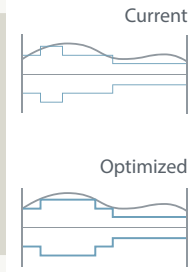
## MICROGRID

Management System

- Modeling
- Operation
- Forecasting
- Scheduling
- Real-time Optimization

Weather Forecasting  
Energy Trading  
Contract Management  
Asset Management

Connected External Processes



Grid connection



Distribution Cabinet



Wind



Generation and Load



CHP/Backup Diesel



Memory



Buildings

Grid, Generation and Load

### Intelligently managing microgrids

Siemens Microgrid Management Systems are the ideal solution to ensure the most optimized control of fluctuating electricity generators within a microgrid. Our tailored solutions meet the individual challenges of each power scenario with a modular structure and flexible scalability. This means that you receive a software solution exactly tailored to your needs.

Microgrid administration comprises a range of intelligent, versatile and userfriendly tools for a wide range of applications. End-to-end SCADA and numerous functions for forecasting, planning and realtime optimization support you in:

- Monitoring and controlling the grid components
- Monitoring and controlling generation
- Monitoring and controlling consumption
- Providing ancillary services
- Buying and selling power

It's flexible, direct and progressive.

### Problem-free engineering

The intuitive design tools are a core element in the Microgrid Management Systems. Even the most complicated power infrastructures can be represented digitally with just a few clicks of the mouse. This saves time and minimizes the potential for error, thanks to many automatic support functions.

### Benefits of a fully integrated microgrid solution

- Modular construction, flexible and scalable
- Reliable grid operation
- Intuitive modeling and parameterization
- Intelligent forecasting and planning
- Simple, realtime optimization
- Incorporation of distributed generators, storage units and loads
- No 24/7 operator required

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