SIEMENS



ENERGY AUTOMATION

SICAM Energy Control

Precise energy exchange management on the SICAM 8 Power Automation Platform

SICAM Energy Control calculates energy trends at any defined exchange point and issues corrective active power setpoints to keep generation and load-management systems on target. It can be deployed standalone or as add-on to your existing SICAM 8 applications.

Challenge

Owners and operators of PV plants, battery storage systems, microgrids, and industrial sites face growing pressure to strictly manage the energy exchanged at their point of common coupling (PCC). Exceeding contractual import or export limits triggers demand charges, capacity penalties, and grid-compliance violations.

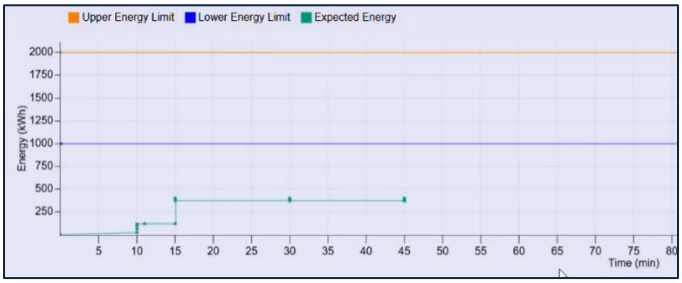
Solution

SICAM Energy Control continuously measures the power exchanged at the PCC, calculates the resulting energy trend for a defined interval (15, 30, or 60 minutes), and issues real-time active power setpoints to the connected generation or load-management application. These setpoints are compatible with SICAM Power Control, SICAM Dynamic Load Management, or any third-party or custom control system.

Your benefits

Prevent demand-charge and capacity penalties before they occur as SICAM Energy Control reliably keeps generation and load within contractual import/export limits. Get your project up and running with a minimum of two signals: PCC measurement and active power setpoint.

Integrate with SICAM Power Control, SICAM Dynamic Load Management, or any third-party system via a small set of standard signals and enable seamless switchover without downtime as global redundancy keeps configuration, algorithm state, and dashboard data fully synchronized between active and passive devices.



Features & capabilities of SICAM Energy Control

Energy control modes

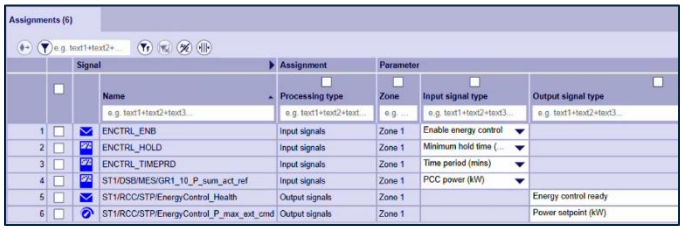
- Contain mode (limit or contain exchange): keeps energy import/export within configured upper and lower limits, ideal for demand-charge reduction, export limitations, and contractual grid-limit compliance.
- Dispatch mode (reach target): drives the energy exchange precisely to a defined target for the period, ideal for following an energy schedule and fulfilling import/export contracts.
- Exceed mode (export energy floor): keeps exported energy above a defined minimum, ideal for meeting minimum delivery or commitment obligations, used with generation control applications only.

Each mode works in both directions: import and export. Contain and Dispatch modes support generation control, load management, or mixed applications.

Flexible measurement input

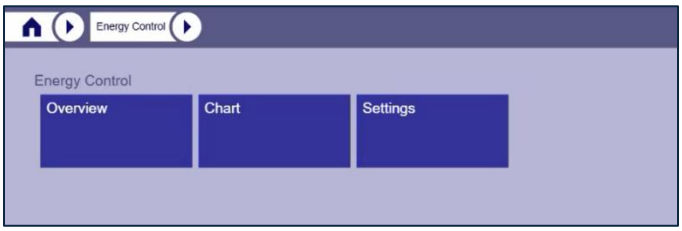
- Power-based input: automatically calculates energy consumption or export from a power meter at the exchange point.
- Energy-based input: directly uses metered energy values, for greater accuracy, if an energy meter is available.

Integration & use cases



- Generic integration: connects any customer-specific application via standardized measurement and setpoint signals.
- Load management integration: derives a maximum power limit for flexible-load sites such as EV charging infrastructure (e.g. SICAM Dynamic Load Management).
- Generation management integration: derives corrective setpoints for controllable generation assets, such as diesel generators, PV inverters, and battery storage, while respecting each asset's operating constraints (e.g. SICAM Power Control).
- Mixed-use integration: a single, exchange-point-oriented control objective coordinates local generation and flexible loads, for example a microgrid with rooftop PV, battery storage, and EV chargers.

Monitoring & operation



- Dedicated SICAM Web dashboard: real-time Overview, Chart, and Settings tiles show active mode, elapsed time, limits, tolerance, and current setpoints.
- Runtime adjustments: target and limit values can be adjusted directly from the dashboard at runtime, with settings retained across restarts and application updates.
- Role-Based Access Control (RBAC): separates operator and viewer permissions so that only authorized users can modify live settings.

Redundancy support

- Global Redundancy increases availability and reduces downtime. The algorithm runs only on the active device, while configuration, settings, and runtime data stay continuously synchronized to the passive device. On switchover, control transfers seamlessly, with no visible difference to connected systems.

SICAM 8 Power Automation Platform advantages

- Modularity: integrates seamlessly with other SICAM 8 control applications, like SICAM Power Control, SICAM Dynamic Load Management or SICAM Operating Plan, enabling comprehensive and scalable automation solutions.
- Security: leverages SICAM 8's built-in cybersecurity framework (IPSec, NERC CIP, ISO/IEC 27001, IEC 62443, IEC 62351).
- Communication: applies robust SICAM 8 communication capabilities for reliable data exchange, supporting standard protocols (IEC 61850, IEC 60870-5-104/101, Modbus TCP, MQTT, RestAPI).

Published by
Siemens AG
Smart Infrastructure
Electrification & Automation
Mozartstr. 31C
91052 Erlangen, Germany

For the U.S. published by
Siemens Industry Inc.
3617 Parkway Lane
Peachtree Corners, GA 30092
United States

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