OUR SOLUTIONS

Distributed Energy Resource Optimizer (DERO®)

Our distributed energy resource management system (DERMS) software automatically dispatches your fleet of energy storage and other distributed energy resources (DER), and optimizes their economic value.

Benefits and Outcomes for Utilities

- **Value Optimization**: DERO enables customers to get the most value from their fleet of distributed energy resources.
- **Simpler Fleet Management**: DERO makes it easier to dispatch a fleet of distributed energy resources.
- **Lower risk through use of standards**: DERO's open-standards based design both lowers the cost of integration with other systems and preserves flexibility to add or swap components in the future.

Features and Functionality

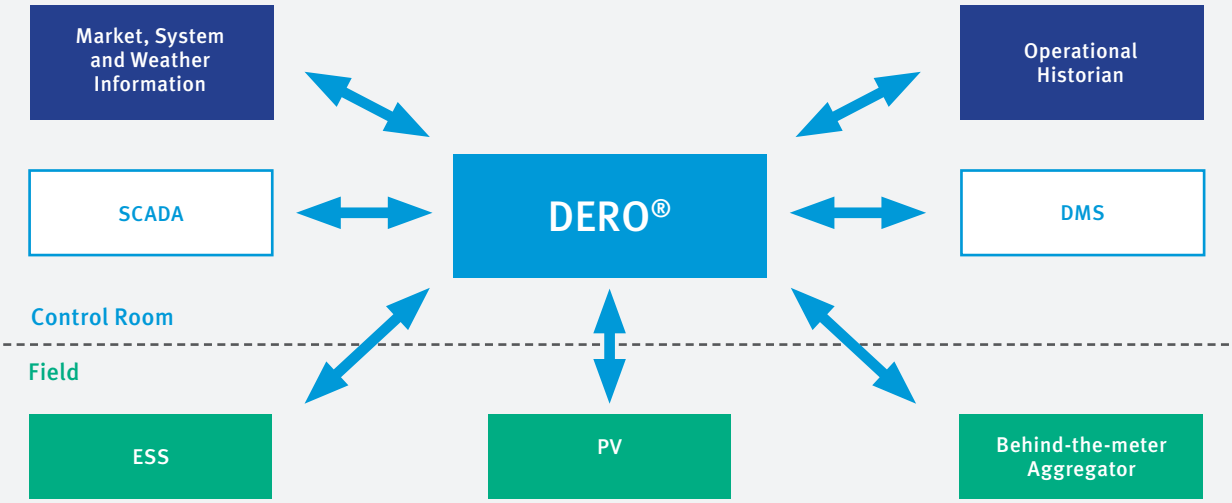
- Automatic dispatch and scheduling of a DER fleet from a central interface.
- Economic value optimization of DER fleet based on information from the bulk power market and local grid systems (e.g., SCADA).
- Built using utility standards-based communication protocols (e.g., DNP3, MODBUS) and aligned with DER open standards-based information models (MESA, SunSpec, and OpenADR).
- NERC-CIP compliant, Windows server-based software to minimize cybersecurity risks.
- Multiple means of user-configurable secure system access – read-only users, users and adminstrators –ensures the right level of access for every stakeholder.
- Designed to interface and fielded with existing utility IT systems (e.g., market trading systems, historians, etc.).
- Configurable web-based interface to meet individual user needs (e.g., operators vs. administrators).
- Communication and control of aggregated behind-the-meter resources through common interface.

Designed with utility-integration in mind

DERO serves as the central platform for managing distributed energy resources on the utility distribution system. Embedded in the utility control center, DERO interacts with field resources, the utility's exsiting IT and OT systems, and external market and weather information to optimize the DER fleet. Communication and control of DERs takes place using standards-based communication protocols (e.g., DNP3) and by leveraging open-standards where possible (e.g., MESA, SunSpec, OpenADR).

DERO's interface provides both hour-ahead and day-ahead views of the DER fleet schedule for approval or adjustment by power schedulers .

Conceptual Schematic DERO® Interactions with Utility Resources



How different utility customers have benefited from using DERO:

- Distribution utility automatically responds to wind forecast variance signals – avoiding expensive purchases of power from the spot market on an hour-ahead basis.
- Unexpected deviations from a utility's load forecasts are avoided automatically by charging or discharging a fleet of ESSs – avoiding charges from the balancing authority.
- Distribution utility dispatches a set of behind-the-meter ESSs to minimize transmission system demand charges.
- Distribution utility engages a combination of ESS and solar photovoltaic (PV) resources with DERO to provide voltage support services on circuits with high penetration of rooftop PV.

About Doosan GridTech

Doosan GridTech™ is a global software and solutions provider that helps electric utilities and other megawatt scale power producers to evaluate, procure, integrate and optimize energy storage and other distributed energy resources. The Seattle-based company has managed nearly 65 MW of multiple energy storage and renewable integration projects on open standards software platforms across the country and in Southeast Asia. The firm is ranked as one of the top energy storage solution providers by Navigant Research and Bloomberg New Energy Finance. Its parent company, Doosan Heavy Industries & Construction Co Ltd, is headquartered in South Korea and is a multinational conglomerate with an emphasis on industrial and infrastructure products and services.