GridOS®

DISTRIBUTED ENERGY RESOURCE MANAGEMENT SYSTEM

What Differentiates GridOS DERMS

Model-based optimization to dynamically control DERs within local grid constraints

Configurable control strategies that scale with DER penetration

Hierarchical grid-of-microgrids approach

Integration with operations to unlock DER value through existing utility platforms

Managing Modern DERs

As both the penetration and capabilities of modern distributed energy resources (DERs) continue to mature, utilities are faced with an increasingly vibrant ecosystem that must co-exist and meet the needs of both utilities and DER owners. DER management must be able to scale in a resilient manner from dispersed independent sites to the broader electric grid while embracing distributed intelligence and a system-of-systems architecture.

Traditional utility processes have been effective at directly monitoring & controlling a well contained number of utility owned grid assets in order to accommodate modest amounts of DER penetration. As grid-decentralization continues to accelerate, solutions must be designed from the ground up with distributed intelligence at their core in order to unlock the evolving capabilities of DERs.

The GridOS Solution

GridOS is an award-winning, state-of-the-art model-based advanced grid analytics platform that supports the evolution of the electric grid. It provides the ability to run detailed distribution system power flows and optimizations that tie together the world of planning and operations like never before. With GridOS, utilities can create realistic plans based on what will be operated, then operate what was planned.

GridOS DERMS provides real-time situational awareness of networks and intelligent adaptive control of DER fleets by leveraging the same core optimization that powers the entire GridOS suite. It creates and dispatches grid-constrained optimal schedules and setpoints to enable peak demand, voltage management, power factor correction and renewable smoothing. GridOS MEMS provides site and feeder-level islanding, closed looped autonomous controls, and seamless integration with the DERMS platform.

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Intelligent Feeder Project (Emera)
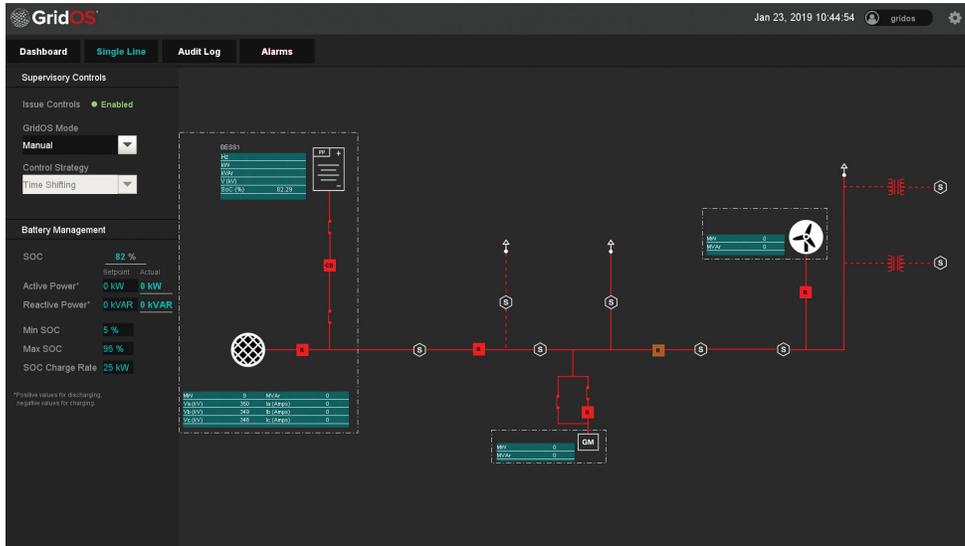
Increasing DER penetration and grid resiliency at Emera Nova Scotia Power

Benefits of GridOS DERMS

- Improve resiliency with energy storage and islanding capabilities

- Increase DER penetration through optimized voltage management

- Limit hardware spend by deploying targeted situational awareness where it's needed

- Deliver on NWA plans that were formulated using GridOS Integration Distribution Planning

Solutions for Your Organization

Dynamic peak shaving

Feeder-aware voltage management and CVR

Power factor correction

DER smoothing

Storm preparation for grid resiliency

Seamless site or substation-level islanding

The Intelligent Feeder Project at Emera Nova Scotia Power integrates traditional utility owned assets, a third party wind farm, and a large C&I load with modern battery energy storage systems to increase grid resiliency and DER penetration. GridOS DERMS enables real-time monitoring of network conditions to optimize and dynamically control both a 1.25 MW / 2.5 MWh Tesla Powerpack installed at a substation and a fleet of aggregated Tesla Powerwalls distributed on the feeder. The strategies include storm preparation and feeder-level islanding for grid resiliency, voltage and power factor management, and wind smoothing to integrate a 6 MW wind turbine.

Why GridOS DERMS?

GridOS DERMS provides distribution utilities with the following capabilities to unlock the stacked benefits of DERs.

- Monitoring and control of local and aggregated DERs
- Configurable alerts / alarms
- DNP3, MODBUS, ICCP, web APIs
- Traceability and accountability via audit logs

- Energy storage minimum reserve % to simultaneously enable both resiliency and grid services
- Supervisory control
- Manual, semi-automated, and fully automatic DER control
- Safe DER dispatch enforcing charge and discharge limits

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Contact Us

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