



DER Optimizer

Harness demand flexibility at the grid edge—and turn behind-the-meter devices into grid assets



Growth in the adoption of electric vehicles (EVs), home batteries, rooftop solar photovoltaics (PV) and other forms of distributed energy resources (DERs) are introducing new and complex dynamics into how electric utilities operate the distribution grid, prioritize grid infrastructure upgrades and engage with their customers. Addressing these dynamics essentially implies deploying solutions that turn these customer-owned devices into grid assets that are integrated into utility operations and planning.

Itron's Aggregator DERMS solution—DER Optimizer—brings together the industry's broadest ecosystem of flexible loads—from load control switches and smart thermostats to batteries and EVs—and integrates grid edge intelligence to deliver a wide range of DER-based grid services, including economic dispatch, non-wires alternatives, local grid balancing and decarbonization.

A Single Pane of Glass for Your DER Program Portfolio

DER Optimizer can connect to and control a wide variety of end-use loads – from the legacy DR resources such as HVAC, water heating and pool pumps to newer resources such as grid-integrated water heaters, energy management systems (EMS), EVs, solar PV and batteries. These end-use loads are controllable through a variety of connectivity methods, including:

- » IP-based cloud-to-cloud connections
- » Direct cellular connections
- » Direct connectivity to Itron's GenX RF mesh network

Connectivity over Itron's GenX RF mesh network is unique to DER Optimizer compared to other aggregator DERMS platforms and can be key component to modernizing legacy, switch-based DR programs – which still account for the majority of load controlled by most utilities in North America today.

DER Optimizer is also a certified OpenADR 2.0b Virtual Top Node. This enables DER Optimizer to integrate seamlessly with third-party aggregator platforms that are also OpenADR certified. In turn, this allows DER Optimizer to consolidate all OpenADR-enabled programs in a given service territory under a “single pane of glass” for utilities to optimize and manage their entire DER program portfolio using a single front-end system, rather than multiple, disparate front-end systems from individual aggregators.



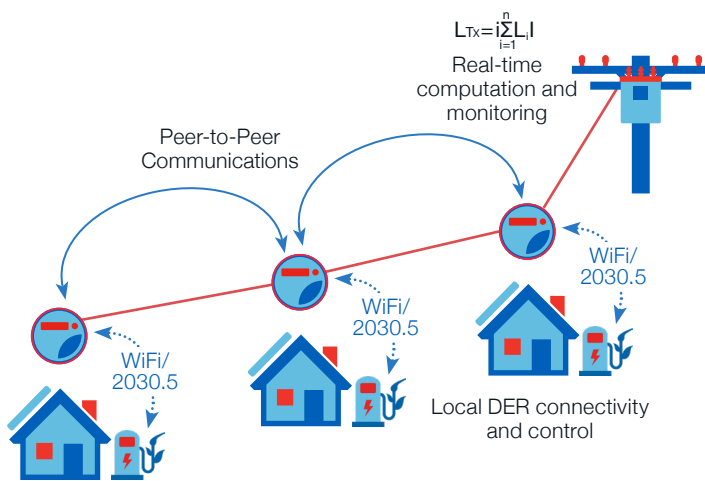
Proven at Scale

Itron's DER Optimizer platform isn't only a DER connectivity and aggregation platform. Our platform includes all the capabilities required to deliver complete turnkey DER programs, including marketing, recruitment, enrollment management, event scheduling/dispatch, reporting and analytics. Itron has a 20-year history of delivering successful customer programs on behalf of utilities across North America—with 1.3 million devices under management today. Itron is a demonstrated leader in delivering DER management at scale, integrating the latest solutions with legacy systems, helping utilities extend the life of existing investments, and providing customers with the best experience possible.

1.3M	25	1.5GW
DER devices enrolled	active DER programs	of load under direct management

Leverage the Power of Distributed Intelligence (DI)

DER Optimizer is a cloud-based SaaS solution by design. However, DER Optimizer is also designed to leverage Itron's DI-enabled devices for grid-edge sensing, computing and control. Where Itron DI-enabled devices are deployed, this enables DER Optimizer to employ a "hybrid" architecture where much of the sensing, computing and control actuation is done autonomously at the grid edge, with higher-level orchestration and coordination done in the back office (i.e. the cloud). To realize advanced DER management use cases such as autonomous local capacity management, solutions must adopt this kind of "hybrid" architecture. In that respect, Itron is uniquely positioned among DERMS vendors due to the native integration of our DERMS platform with our suite of AMI head-end systems, AMI network-compatible sensors and controllers, and DI application ecosystem.



Single Point of Integration to ADMS/Grid DERMS

DER Optimizer is architected to integrate with and enhance third-party Grid DERMS and ADMS solutions via open standards such as DNP 3.0 and IEC 61850. To enable these important IT/OT integrations, and Itron has implemented a one-way OT message bus and a "virtual RTU" concept that maintains the IT/OT separation and allows DERs or distribution grid assets (e.g. secondary transformers and feeders) to be aggregated and viewed as native endpoints within existing ADMS systems. Itron adopted this approach not just to support IT/OT system integration, but also with an eye towards supporting the scalability that those OT systems were designed for (e.g. tens to hundreds of thousands of control points). This integration approach also enables supervisory control requests to be sent from ADMS or Grid DERMS to DER Optimizer to enable behind-the-meter DERs to be used as alternatives (or supplements) to SCADA controls for distribution grid management.

The Value of DER Optimizer

With DER Optimizer, Itron is providing an Aggregator DERMS solution that is designed to both meet the practical needs of today (such as modernizing legacy load control switch programs and consolidating management of diverse portfolio DER programs) and lay the foundation needed to solve the challenges of tomorrow by leveraging the power of Distributed Intelligence.

For more information, contact your Itron Sales Representative or local Channel Partner.

To learn more visit [itron.com](https://www.itron.com)

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