



# IntelliFLEX

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



## Managing the Evolving Grid

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. Traditional, centralized approaches are no longer sufficient. As Utilities face increasing DER penetration, IntelliFLEX provides real-time visibility, control, and AI-driven optimization of customer-owned assets and seamlessly integrates them into utility operations and planning.

Itron's **IntelliFLEX** suite of solutions enables utilities to orchestrate a wide ecosystem of flexible loads—from load control switches and smart thermostats to batteries and EVs—by integrating **Grid Edge Intelligence (GEI)**. This solution delivers 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

IntelliFLEX connects and controls a wide variety of end-use loads, ranging from legacy Demand Response (DR) resources such as HVAC, water heating and pool pumps to modern assets 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 IntelliFLEX compared to other DERMS platforms and a critical component to modernizing legacy, switch-based DR programs—which still account for the majority of load controlled by most utilities in North America today.

### Proven at Scale

Scalability and interoperability are key as connected devices grow in volume and diversity. This is why Itron's IntelliFLEX platform is more than a **DER connectivity and aggregation platform** – it provides **complete turnkey DER program capabilities**, including:

- » Marketing, recruitment, enrollment management,
- » Event scheduling and dispatch,
- » Comprehensive reporting and analytics.

Itron has a +20-year history of delivering successful customer programs on behalf of utilities across the globe. With 3 million devices under control and 54 GWhs of energy dispatched, IntelliFLEX is a proven solution that enhances real-time grid flexibility, reduces infrastructure strain, and scales to meet growing energy demand.

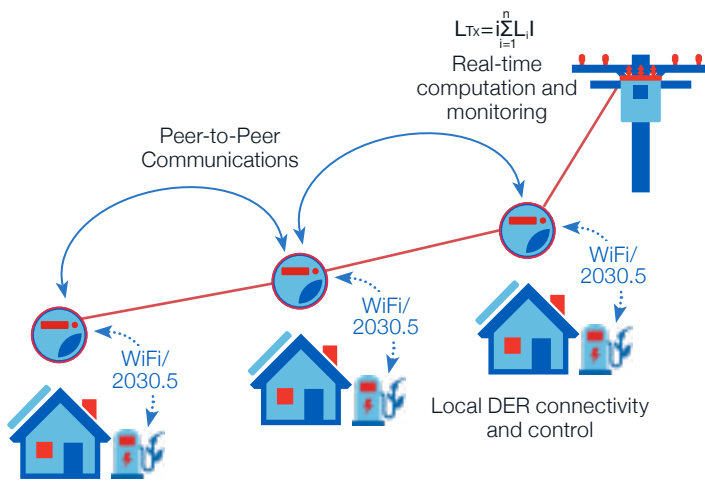
<b>3M</b>	<b>30</b>	<b>54GWhs</b>
devices	active DER	of energy
under control	programs	dispatched

## Leverage the Power of Distributed Intelligence (DI)

While IntelliFLEX is a cloud-based SaaS solution, it also leverages Itron's Distributed Intelligence (DI)-enabled devices for real-time grid-edge sensing, computing and control. Where DI-enabled devices are deployed, IntelliFLEX can adopt a hybrid architecture, enabling:

- » Autonomous local capacity management at the grid edge.
- » Grid-aware demand response using real-time data.
- » Seamless integration with AMI head-end systems, sensors and controllers.

This hybrid approach ensures strategic oversight in the cloud while maintaining real-time responsiveness and autonomy at the grid edge to improve outage response, peak load balancing, and accurate DER forecasting



## Standards-based Integration

IntelliFLEX is designed for **seamless integration** with existing utility systems and third-party platforms. It supports industry-standard protocols to ensure **interoperability and regulatory compliance**, including:

- » **OpenADR 2.0b** – Certified Virtual Top Node (VTN) for compatibility with OpenADR-enabled aggregators.
- » **IEEE 2030.5** – Secure, standard-based communication for EV charging and DER integration.
- » **OCPP** (Open Charge Point Protocol) – Enabling managed charging of EVs across diverse charger networks.
- » **DNP3 and ICDP** – Supporting real-time data exchange with ADMS/Grid DERMS for enhanced grid operations.

By supporting standards-based integrations, IntelliFLEX allows utilities to **leverage existing infrastructure** while maintaining flexibility to incorporate new assets and expand DER programs efficiently.



## Single Point of Integration to ADMS/Grid DERMS

- » IntelliFLEX enhances third-party Grid DERMS and ADMS solutions through standardized IT/OT integrations. This is achieved via:
- » A **virtual RTU model**, enabling DERs and grid assets (e.g., secondary transformers, feeders) to be aggregated as native endpoints.
- » **Supervisory control support**, allowing DERs to supplement SCADA systems for distribution grid management.

This approach ensures IntelliFLEX can help utilities scale **from thousands to millions of control points**, meeting the needs of modern grid operations.

At its core, IntelliFLEX represents a reimagining of how we manage increasingly complex energy systems. IntelliFLEX combined with DI ensures a harmonized, scalable and intelligent approach to distribution network management by breaking down operations into decentralized subsystems with seamless integration capabilities.

## The Value of IntelliFLEX

Itron's IntelliFLEX solution empowers utilities to modernize load management programs, integrate DERs at scale, and enhance grid resilience while reducing operational costs. By leveraging Grid Edge Intelligence, IntelliFLEX provides **real-time visibility, control and optimization** of DERs, enabling utilities to **actively shape loads, defer costly infrastructure investments, and unlock new demand flexibility use cases**. As a result, utilities can accommodate more DERs while improving system efficiency and reliability, ultimately achieving **up to 20% more distribution capacity utilization**.

## Looking Ahead

The future of IntelliFLEX lies in adaptive, real-time coordination between edge devices and cloud-based optimization. As the energy landscape evolves, IntelliFLEX ensures grid stability, efficiency and resilience across increasingly complex distribution networks.

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

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