



# Grid Operations





## RISING TO THE CHALLENGE

Market forces and new technologies are driving you to transform your operations and business capabilities. An increasingly interactive grid, rising public expectations and accountability, government mandates and faster outage restoration are just some of these factors. Addressing distributed generation, electric vehicles, consumer engagement, extreme weather, microgrids and local markets requires optimization of the low voltage grid and enhanced information fed into various systems.

Itron's Grid Operations outcomes support data intelligence to enable you to develop proactive asset management strategies and optimize your grid. Through a combination of software and services, you are given the tools to gain valuable insight into your operations, maximize asset life, enhance efficiency and improve customer satisfaction.

### Transformer Load Monitoring

Changing weather patterns, aging infrastructure and increased adoption of electric vehicles and other technologies are creating new challenges to effectively manage your distribution assets. Transformer Load Monitoring utilizes smart meter data from AMI meters along with weather information to calculate distribution transformer loading and its effect on asset longevity at a scale and accuracy never before possible. Loss-of-life calculations assist your planners in effectively allocating capital for proactive transformer replacement where necessary.

- » Receive alerts to newly overloaded transformers so you can take action before damage occurs or customers are impacted
- » Identify over-utilized, under-utilized and at-risk transformers
- » Assess unanticipated load increases that may result in asset failure
- » Evaluate transformer sizing for new loads using measured load history during peak seasonal loads

### Grid Connectivity

Grid Connectivity uses machine learning and AMI meter voltage data to determine meter-to-transformer connections and phase identification. Accurate and up-to-date connectivity data is essential for efficient outage management, system planning, load flow calculations, phase balancing and many other critical grid management operations.

This analysis runs seamlessly in the back office to continually detect when new customers come online, crews perform maintenance and proactive activities like phase balancing and feeder reconfigurations occur. Results are compared to a utility's systems of record so inaccuracies are identified and can be corrected.

- » Improve your load forecasting capabilities with accurate connectivity models
- » Optimize asset utilization and extend asset life
- » Improve outage response and restoration time – improve SAIDI/SAIFI/CAIFI
- » Improve many outcomes, such as outage and theft detection
- » Reduce technical loss by phase balancing

### Electric Vehicle (EV) Detection

EV Detection identifies the presence of electric vehicle charging equipment at the customer premise. EV charging can add considerable strain on a utility's delivery network, especially when customers are charging at the same time in the same vicinity.

Awareness and understanding of EV loading enables utilities to measure the impact of these new loads, identify overloaded assets and develop targeted solutions. Knowledge of EV adoption and load is valuable for a variety of other system planning and operations tasks, and for customer marketing programs aimed at providing the best possible experience for electric vehicle owners.

- » Target EV owner awareness of rate programs and incentives
- » Recognize high EV adoption areas to monitor grid impact
- » Correlate overloaded assets with presence of EVs

### Solar Detection

Solar Detection identifies the presence of solar generation behind the customer's revenue meter at the premise. This information can be used for system planning, customer marketing programs associated with distributed generation and a variety of other customer-focused use cases.

- » Ensure customers are on the right rate program
- » Enhance safety through awareness of back-feed potential
- » Inform customers if solar generation is offline
- » Associate over-voltage areas with high solar adoption



### FAST DEPLOYMENT AND TIME TO VALUE

Grid Operations applications are offered as Software as a Service (SaaS) utilizing the Microsoft Azure cloud platform. Itron's SaaS-based approach helps you realize value quickly and, at the same time, supports scaling deployments at a pace that is comfortable.

### END-TO-END ACTIVE GRID SOLUTION

Grid Operations applications are pre-integrated with Itron's market-leading smart grid solutions to reduce risk, lower implementation costs and provide faster time to value. With this integration, Itron provides you with a complete smart grid solution including meters, sensors, networking, data collection, data management and consulting services—to ultimately solve your business challenges and deliver value-based outcomes.

Grid Operations applications also include data integration adapters which integrate to third-party systems such as GIS, workforce management, CIS systems and third-party AML and MDM systems.

### FOCUS ON CONTINUING INNOVATION

We strongly believe that analytics is a key component to extending the value of smart metering and smart grids. Itron is making significant investments in research and development to discover and productize new analytics use cases and algorithms. By leveraging our Grid Operations applications, you will benefit from this continuous investment in innovation.

### ENSURE GRID RELIABILITY & RESILIENCY

You are now faced with more rapid change and increased expectations than before. The grid is more participatory (two-way), there are ongoing increases in the reliability, service and engagement level that customers expect, and regulators have high expectations that utilities will meet those mandates.

Itron's years of industry insight and experience, combined with our Grid Operations applications, will provide you with the cutting-edge analytic capabilities of today and prepare you for the emerging priorities of tomorrow. We enable you to realize the full value of your smart grid.



Join us in creating a more **resourceful world**.  
To learn more visit **itron.com**

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