Digital Energy

STORM READINESS

Predictive storm planning reduces crew costs while improving safety and customer satisfaction

KEY OUTCOMES

- Reduced storm safety risks
- Reduced storm deployment & field labor costs
- Improved storm CAIDI
- Improved field personnel positioning decisions before and during weather events
- Improved customer satisfaction and public relations

KEY FEATURES

- Accurate, hour-by-hour outage volume predictions at service center and enterprise level that leverages Machine Learning (ML)
- Hour-by-hour high resolution outage predictions and distribution at a township level
- Predicted ETR and CAIDI metrics
- Visualization of high-resolution weather combined with outage predictions overlaid onto your service territory map

OVERVIEW

Accurate forecasting to improve storm response planning

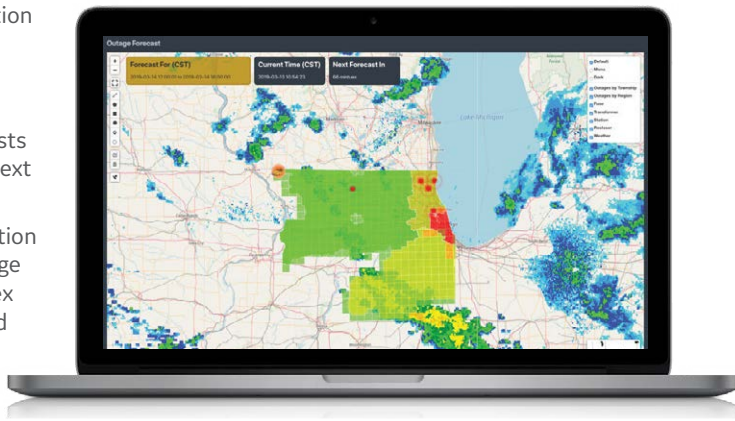
In the last 30 years, the frequency and intensity of severe weather events has increased significantly. While utilities have made great progress in their ability to transition to storm operations and dispatch repair crews quickly and effectively, challenges remain for storm detection, prep & stage and storm management teams.

Being constrained by broad area, low-fidelity weather data makes it difficult to forecast outages, facility damage and estimated time to repair by operating area. Without a clear picture of how impending weather events will impact the grid, utilities must rely on costly numbers of contingency crews to restore power quickly, or risk leaving customers without power for extended time periods

Storm Readiness

GE's Digital Energy Storm Readiness application utilizes historical weather, outage, cost and facility damage data, combined with geospatial (GIS) data and high-resolution weather forecasts to deliver:

- Geospatial overlays of high-resolution weather forecasts and predicted outages on a 6x6 mile grid over your service territory
- Hour-by-hour high resolution outage predictions at a township level
- Hour-by-hour outage and damage prediction forecasts by service center for the next 72 hours
- Estimated time of restoration (ETR) and customer average interruption duration index (CAIDI) based on predicted outages and variable field resource levels



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DIGITAL ENERGY DATA FABRIC

GE's Grid Analytics solutions run on our Digital Energy Data Fabric, a platform that standardizes the storage and consumption of data across the energy value chain, from centralized power generation to consumption by end users and prosumers.

By unifying data on a secure, scalable platform that applies artificial intelligence (AI), machine learning (ML) and Big Data compute capabilities, the Digital Energy Data Fabric enables GE and our customers to create solutions that deliver network-level optimization quickly using a stable, model-driven approach.

Bridge the IT/OT Gap to Deliver Network Level Optimization

Common Information Model (CIM) support combined with data transformation capabilities enables us to plug-in to IT and OT systems made by a variety of vendors, including distribution and transmission network models from GE's Electric Office network-based Geospatial Information System (GIS).

Outage data from your Outage Management System (OMS) can be utilized to deliver predictive vegetation management, storm outage prediction, and meter-to-transformer and phase identification solutions. Domain-specific micro-services serve as building blocks for multiple solutions, like 3-phase network tracing and power flow calculations. The Digital Energy Data Fabric data hub service closes the loop between analytic output and IT/OT systems input, providing a flexible and future-proof platform to deliver Network Level Optimization.

DIGITAL ENERGY GRID ANALYTICS

Network Connectivity

Automatically corrects and maintains GIS data integrity. GE Network Connectivity algorithms can leverage AMI-Voltage, AMI-Consumption, AMI-Events, OMS, CIS and GIS to detect, recommend and/or correct a utilities pervasive errors in the meter-to-transformer association, as well as meter and transformer phase identification errors in GIS.

LEARN MORE

Effective Inertia

Measures and forecasts the combined inertia-like effects of rotating machines, passive load responses, and active generator controls. GE Effective Inertia is a non-intrusive solution which uses EMS and PMU data to measure the real time effective inertia in each regional area, giving confidence to operators in regions with deep renewable penetration. A machine learning Effective Inertia forecast allows forward planning for lower frequency response services and reductions in curtailment fees and penalties.

LEARN MORE

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