



Can Forecasting help anticipate my next Renewable or DER challenge?

Move from reactive to proactive to overcome foreseeable load variations and dramatically reduce real-time intermittency issues.

[ge.com/digital/forecasting](https://www.ge.com/digital/forecasting)

INTRODUCTION

Renewable and Distributed Energy Resources (DERs) may well prove to be the single most disruptive and transformational influence in the history of the electric grid, with respect to operations and underlying utility business models.

The proliferation of renewable and DERs on the grid introduces heightened levels of complexity and presents new opportunities and challenges related to their integration and management.

The current penetration of DERs and renewable generation is causing a dramatic increase in intermittency and affects the dynamics of energy flows on the electrical grid.

Operating the grid solely in real-time is causing an increase in operator stress and a reduction in their options to act — preventing utilities from anticipating possible overloads, load fluctuations, or preventable network violations.

Forecasting is the solution.





FROM REAL-TIME TO PREDICTIVE

Every renewable or DER added to your grid increases the chance of network violations. How can Forecasting reduce this risk?

Control rooms today are coping with the reality of intermittency that comes with renewable generation and DERs. The grid can no longer run solely on real-time assessment, and utilities must anticipate the future and increase their available reaction time.

Intermittency can lead to unexpected and quick status changes that affect operator efficiency. This threatens the safety, security, reliability, quality of service, asset condition, and operating expenditures of the grid.

The knowledge of what is coming in the next hours and days ahead is critical. With more time available, operators can prepare more reliable and cost effective solutions, by collaborating with peers, prioritizing violations based on severity, and having access to more choices to select from. Some of these choices require advanced notice, such as storage, demand response, capacitor banks, etc.

With visibility into forecasted events, such as micro storms with heavy cloud cover, the application can feed accurate and valuable data to grid operators, helping to prevent violations, maintain quality and reliability of supply, as well as customer satisfaction.





NEW INSIGHTS FOR TRANSMISSION & DISTRIBUTION

GE Digital's Forecasting application processes historical data and explanatory variables to generate forecasts of load and intermittent generation from renewables and DERs.

This application enables transmission & distribution operators to cope with the intermittency of renewable generation and DERs and to anticipate potential violations that these new objects can cause.

- Prevent a negative impact on KPIs (SAIDI & CAIDI, Voltage QoS) for Distribution, and better anticipate balancing reserve requirements at Transmission.
- Predict events and avoid real-time crises with load and embedded generation forecasting.
- Forecast at the disaggregated level so control room operators can plan ahead versus chasing issues in real-time.
- Predict generation shortages from system level to disaggregated level to anticipate load issues and take proactive actions.
- Forecast multiple contained scenarios to represent load growth from electric vehicles, and other new cleantech energy devices, in a single application.
- Leverage Forecasting's open interfaces to interact with third-party systems beyond GE Digital AEMS/ADMS.



DIGITAL ENERGY

Load, Renewables & DER Forecasting Footprint

AMERICA

Forecasting & ADMS

Forecasting & ADMS & AEMS

EUROPE

Forecasting

Forecasting & AMMS

Forecasting & ADMS

MIDDLE EAST

Forecasting & AEMS

Forecasting & ADMS

AFRICA

Forecasting & AEMS

Forecasting & ADMS

PACIFIC

Forecasting & ADMS & AEMS



CUSTOMER TESTIMONIAL

“We are excited to deepen our relationship with GE through the implementation of the T-Forecast software solution. With this new technology, we will be able to better predict the energy flow loads in the electrical grid, and in turn, we can increase efficiency and reliability for our customers. As renewable energy usage continues to increase, this technology provides a seamless path for future functionalities and market interactions, including using flexibility for congestion management.”

Peter Hermans, CTO, Stedin



THE GE DIGITAL DIFFERENCE

Accurate. Versatile. Robust.

- Harness the ability to forecast Load, Renewable and DER output at both the transmission and distribution level or from behind-the-meter solar to a large-scale wind farm, in a single application.
- Associate load and generation forecasts with specific locations or aggregation points in the grid network model.
- Configure and tune a wide range of scheduled forecasts that run in the background, and unlock additional value in grid management systems like ADMS and AEMS.
- Modern microservices-based architecture allows for horizontal scalability and deployment automation.





THE BENEFITS OF PARTNERING WITH GE DIGITAL

The time to start is now. The good news is that addressing Renewables & DERs on your grid can be a step-by-step process with end-to-end modular solutions. When choosing to work with GE Digital, you are selecting a partner, not just a product or service, who will consider your unique grid needs and your roadmap.

Our world-class, highly experienced teams are dedicated to close and collaborative customer relationships. Our customers also enjoy exclusive closed-door User Groups and Working Groups with our team, where we listen, inform, and adjust to constantly improve our products and services.

Reach out today to start a conversation.



How can we help you deliver world-class solutions to your customers?

[CONTACT GE TODAY](#)



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