Power Generation Solutions from GE Digital

Accelerating energy transition with software for reliable, flexible and efficient operations
Energy Transition

Market dynamics & challenges
The energy market continues to evolve at a rapid pace with major implications. Renewables have permanently changed the operating landscape and create new performance pressures. Global events are accelerating the transition to location-independent controls and staffing. And at the heart of it all is the workforce – increasingly younger, less experienced, but digital-savvy. They are both the targets and enablers of change.

Renewables energy share continues to rise
- Plant operating models are changing
- Reduced investments in traditional fuel plants
- Increased agility and profitability pressures

A new normal accelerated by macro events
- Contingency operations are an investment priority
- Centralized operations centers and remote workers
- Steady march towards semi-autonomous ops

Evolving workforce rapid dynamics and impacts
- Transitioning to a new digital generation
- Reshaping approach to safety, productivity & automation
- Rethinking resourcing

With GE Digital you can:

**Optimize your assets**
- Improve reliability and availability
- Reduce emissions
- Extend asset life
- Reduce O&M costs

**Improve power generation performance**
- Optimize plant utilization
- Seize market opportunities
- Minimize fuel spend

**Empower and extend your workforce**
- Boost staff efficiency
- Increase staffing flexibility
- Automate processes
GE Digital accelerates your energy transition journey with software for more reliable, efficient performance

GE Digital understands the need to take a holistic and integrated approach to achieving your goals – covering assets, operations and people. Our solutions are designed to help you maximize asset reliability and O&M efficiency, optimize operations flexibility and profitability, and boost work effectiveness and safety. Addressing all of your critical business needs.

With core applications for APM, OPM, Remote Operations and more, our goal is to be your partner in achieving the best in reliable, efficient and profitable operations — driven by an empowered workforce.

Industrial Data Diagnostics
Enables customers to benchmark their asset reliability and O&M metrics against those of industry peers. Monthly reports and real-time data access help calibrate goals and make profitable decisions.

Asset Performance Management
Helps optimize equipment reliability and O&M efficiency across the plant and fleet. Featuring built-in GE industry expertise, advanced analytics and work process automation, APM is the backbone of accelerating the energy transition.

GE’s APM solution includes the following applications to help meet your evolving needs:

- **Health**: Gain a unified view from anywhere, remote or on-site, of your critical assets’ health.
- **Reliability**: Avoid surprises from your assets with real-time defect identification and next-best-action guidance.
- **SmartSignal**: Optimize your asset data with predictive analytics and proactively prevent unplanned downtime and failures.
- **Strategy**: Feel confident your O&M strategy is high-performing and reducing risk.
- **Integrity**: Operate knowing your facilities are contained and in compliance.
- **Safety**: Keep your workers and assets safe, while eliminating potential risk.
Operations performance  
Software designed specifically for Power Generators

**Operations Performance Management**: Provides analytics-driven insights to drive profitable operations and planning decisions. From operating at maximum efficiency to data-driven dispatch decisions, OPM helps optimize plant financial performance. Each individual solution provides critical decision support to achieve goals such as improving fuel savings and meeting climate regulations.

**Performance Optimization**
Automated, real-time optimizers designed to improve return on assets by aligning operations to changing market and environmental demands.

**Autonomous Tuning**: Utilizes equipment models and AI/ML to continuously find optimal flame temperatures and fuel splits for gas turbines. This helps to minimize emissions, reduce fuel use and improve availability.

**BoilerOpt**: Utilizes closed loop supervisory controls to improve steam plant boiler efficiency, reduce fuel consumption and carbon production. Analytics-based (AI/ML) supervisory controls improve boiler process conditions to optimize for best-achievable fuel efficiency. Boiler control settings and events include fuel/air settings and soot-blowing.

**Capacity Dispatch Optimizer and Capacity Trader**: Improves GE F-class gas turbine energy production during peak demand for increased plant dispatch. All without costly maintenance adders or adversely impacting the maintenance interval.

**Duct Burner Optimizer**: Automates and optimizes the dispatch of duct burners using AI-enabled predictions of near-term demand. Improves flexibility of plant operations and reduces fuel consumption.

**Production Planning**
Increase margins & manage risk through capacity forecasting and decision support

- Performance Predictions
- Trader Advice
- Economic Dispatch Advice
- Outage Scheduling Advice

**Performance Intelligence**: Thermal advisory to reach full operating potential

- Operational & Thermal Performance Monitoring (Base Scope)
- Flexibility Performance Monitoring
- Alerts and Diagnostic Advice
- Economic Trade-Off Advice
- What-If Scenario Modeling
Empowering and extending your workforce

**Operator Rounds:** A component of APM Health, it provides route configuration management and a mobile app to enable efficient manual data collection. Integrates into APM predictive analytics and asset health tracking features.

**Mobile HMI:** Remote Operations offers a purpose-built mobile interface for HMI access and control. Features include custom mobile views and safety functions that validate user intent and minimize risk.

**Industrial Managed Services:** A range of expert services to guide and facilitate digital transformation across your enterprise. From turnkey outsourcing to product and best-practices guidance, GE experts augment your team and help drive desired results.

**Remote Operations:** Provides remote and mobile access to on-site plant control systems – all in a safe, secure and NERC-CIP complaint package. Generators can now adopt a flexible staffing model that reduces risk and controls costs.

**About GE**

GE Digital transforms how our customers solve their toughest challenges by putting industrial data to work. Our mission is to bring simplicity, speed, and scale to digital transformation activities, with industrial software that delivers breakthrough business outcomes. GE Digital’s product portfolio – including grid optimization and analytics, asset and operations performance management, and manufacturing operations and automation – helps industrial companies in the utility, power generation, oil & gas, aviation, and manufacturing sectors change the way industry works. For more information, visit [ge.com/digital](http://ge.com/digital).