HITACHI

Solution Profile

Hitachi HMAX™ for Power Grids

Planning modernization and acceleration solutions address energy demand-supply gaps



Reduce Analysis Times

Reduce generator interconnection analysis times by 80%.

Make Faster Decisions

Make significantly quicker, better-informed decisions that will increase overall ROI.

React Quickly

Resolve shortages, increase grid reliability, and improve emergency response.

The Challenges Facing Power Transmission Organizations.

Energy demand is rising driven by data center growth, electrification, industrial expansion, and digital transformation. Utilities, system operators, and energy planners face growing complexity as large load centers expand, renewable integration accelerates, infrastructure ages, and regulations evolve. These challenges are exacerbated by:

Fragmented Intake and Verification

Disjointed submission processes and inconsistent data and document formats create inefficiencies from the start. Information spread across disconnected systems limits visibility, slows coordination, and makes accuracy harder to maintain. Manual validation for completeness and technical quality adds time, increases workload, and raises the risk of errors.

Complex Model Builds and Simulations

Manual handoffs across teams slow progress, increase rework, and reduce efficiency. Fragmented tools and manual model updates can lead to outdated information, inconsistent outputs, and delays. Incompatible file formats add conversion effort, while long run times and system failures extend timelines. The complexity of the environment also slows onboarding and limits productivity.

Time Consuming Analysis and Reporting

Teams spend significant time consolidating simulation results and assembling reports, creating version control issues, duplicated effort, and slower decisions. Inconsistent cost assumptions, unclear study parameters, and unreliable forecasting can weaken confidence in the results. The outcome is greater uncertainty, delayed decisions, and higher risk of project attrition.

To stay reliable and competitive, energy organizations need a unified, intelligent platform that automates, accelerates, and optimizes end to end grid planning.

The Hitachi HMAX™ Solution

HMAX™ by Hitachi is a next-generation suite of AI powered solutions designed to bridge the digital and physical worlds. By harnessing vast data from physical and digital assets, integrating advanced AI technology, and leveraging Hitachi's unmatched domain expertise. HMAX™ combines data collected from physical and digital assets such as sensors, industrial equipment, and machinery with Hitachi's domain knowledge accumulated through years of deploying operations and maintenance systems. Advanced AI technologies—i.e., perception AI, generative AI, agentic AI, and physical AI—are then applied to deliver new powerful solutions to organizations worldwide. Hitachi HMAX™ for Power Grids solution integrates power grid operation expertise, AI algorithms, and high-speed data processing powered by Hitachi iQ.

The objective is not to improve one tool, but to remove bottlenecks across the grid analysis workflow. Hitachi combines process redesign, grid expertise, and physics-based AI to improve accuracy, reliability, and operational efficiency. Grounded in real-world grid constraints, physics-based AI improves trust, consistency, and decision quality. Grid planning and simulation require high-performance infrastructure. Hitachi iQ reduces data bottlenecks and accelerates AI-driven grid analysis for fast access to data and compute at scale. Its architecture improves throughput and system efficiency by keeping compute resources fully utilized. The result is a unified approach to grid data, analysis, and operations. This enables faster analysis, better decisions, more efficient use of resources, and better grid outcomes.

Hitachi HMAX™ for Power Grids Delivers:

Single Source of Truth

A single centralized location in which all study data can be stored in a solver agnostic format

Internal Engineering Portal

Consolidated internal UI for all engineering actions and tasks

Unified Submission Portal

Centralized location for all incoming customer submission

AI Data Validation

Automated data anomaly detection through AI validation

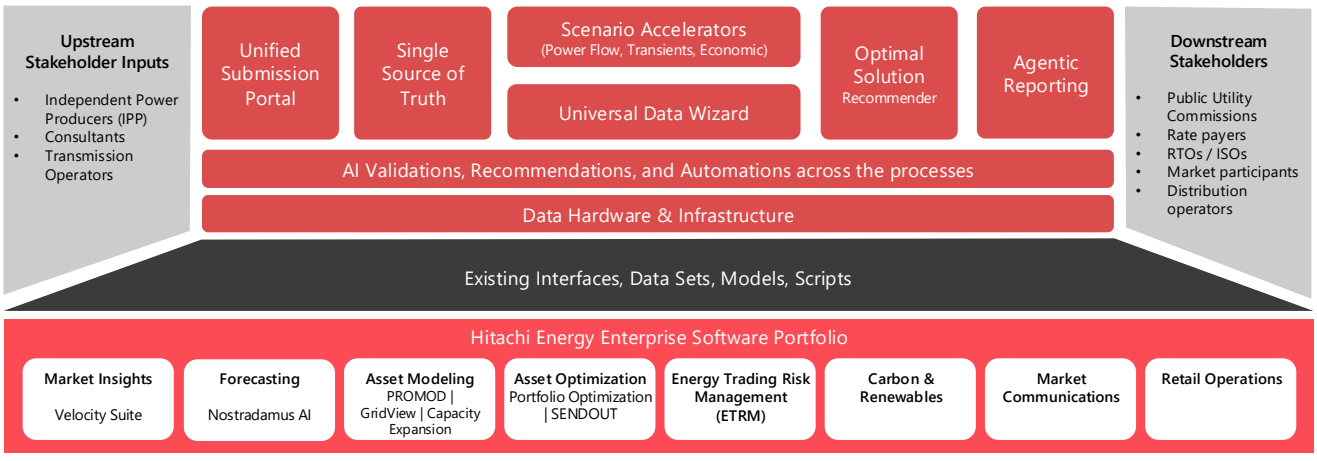
Intelligent Energy Optimization

Next generation AI-powered rapid grid model solver developed by Hitachi

Reduced Time-to-Market

Accelerated generation interconnect study time shrinking the demand-supply gap

End-to-end Process Efficiencies through AI Intelligence & Optimization



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