

## Hitachi Energy advances predictability of energy investments forecasting with new AI-powered solution

- Nostradamus AI provides precise, easily explained, off-the-shelf forecasts for load, market pricing, and renewable energy generation
- Incorporates user data to deliver customized energy-specific forecasts, integral to effectively manage their energy portfolio strategy and quickly make informed decisions across their businesses
- Cloud-native solution built to easily integrate and scale as future forecasting needs grow



Hitachi Energy advances energy forecasting with new Nostradamus AI solution

**Zurich, November 12, 2024** – Hitachi Energy has launched a new artificial intelligence (AI)-powered energy forecasting solution, [Nostradamus AI](#). Developed using Hitachi Energy’s deep energy industry expertise, Nostradamus AI leverages the company’s 30 years of the most extensive energy market data to provide utilities, power system operators, energy producers, and traders with highly precise forecasts for common energy-specific use cases.

One of the first AI forecasting solutions purpose-built for the energy industry, Nostradamus AI is a modern AI engine that can generate forecasts estimated to be over 20 percent more accurate than some industry targets. The solution optimizes energy investments, trading strategies, and revenue opportunities, streamlines operational efficiencies and resource planning, and ensures transparency for regulatory compliance.

Data volumes have exploded as the grid has evolved. According to the [IEA](#), the world’s wind turbines, for example, register more than 400 billion individual data points annually, and smart meters generate several thousand times more data points than the analog meters they are replacing. In addition, today’s energy market and grid are increasingly volatile due to variability introduced by renewable power generation. At the same time, electricity demand is growing unabated, and organizations are under pressure to meet energy security and decarbonization goals. Collectively, these market forces are driving organizations toward AI, which can process large, disparate data sets to significantly increase the accuracy of their forecasts, a move critical for managing energy markets and the grid in the energy transition.

“Advanced forecasting is integral to effectively manage a company’s energy portfolio strategy, allowing operators and analysts to make informed decisions across their businesses quickly,” said Massimo Danieli, Managing Director, Business Unit Grid Automation for Hitachi Energy. “We’ve applied our extensive energy domain expertise and data science background to create an AI engine that can significantly accelerate the ability of users to make impactful decisions with their energy data, deliver improved profitability across their businesses, and scale as the

grid evolves.”

### **An AI tool engineered for the energy industry**

Nostradamus AI, built specifically for the energy industry using Hitachi Energy’s domain expertise, combines grid-performance data, market forecasts, and advanced asset monitoring underpinned by machine learning and other data science best practices.

The solution is a configurable, predictive analytics tool that puts the power in the hands of investors, operators, developers, and traders. Users can plug their owned and third-party data and unique parameters into Nostradamus AI’s pre-tuned, off-the-shelf models to generate accurate, customized energy-specific forecasts – called pipelines – for system load, wind generation, solar generation, market pricing, and more. Nostradamus AI creates regression-style forecasts that make it easier for users to interpret and explain their forecasts and make better-informed business decisions.

### **Solution built on cloud-native, agnostic, and composable architecture**

Hitachi Energy Nostradamus AI is a cloud-native solution that can scale with ease from a single forecast to more than 100,000 forecasts. With users’ future forecasting needs in mind, the AI engine can, for example, generate predictions for the renewable generation of a single wind turbine and solar farm or thousands of different load points.

In addition, Nostradamus AI is algorithm-agnostic and today supports several of the highest-performing AI models. It is built with a composable architecture, allowing organizations to use their existing application programming interface (API) endpoints to speed and scale development, and is easy to automate and integrate with users’ systems.

“Hitachi Energy’s new solution integrates with customer data through its own AI energy product,” said Maryam Akram, research principal at Chartis Research. “Moreover, as well as extensive forecasting tools and application design, which support and guide customers’ use of machine learning models (including state-of-the-art techniques), Hitachi Energy’s solution transparently manages each stage of the model lifecycle, combining energy domain expertise with an effective machine learning strategy.”

### **Today’s outdated forecasting methods fall short**

Too often, today’s outdated forecasting models are limited in functionality and not tailored for the energy industry. These forecasting models rely on labor-intensive, costly, manual processing and fail to consolidate the vast amounts of data that energy traders and analysts require for informed decision-making. They also lack the flexibility to easily incorporate critical energy industry inputs, such as asset performance predictions, price forecasts, and risk mitigation recommendations.

Nostradamus AI was developed to bridge existing AI and forecasting solutions’ capabilities while providing a platform for scale and future growth.

“Artificial intelligence and machine learning have changed the world. Embracing AI in the power sector is not just a choice; it is an imperative. That’s why it’s critical that organizations have a dedicated tool designed specifically for analyzing the massive amount of data generated across an evolving power grid,” said Andy Howell, Global Head of Enterprise Software Solutions product group, Business Unit Grid Automation for Hitachi Energy. “Hitachi Energy is leading this effort, relying on our decades of sector and data science experience to architect an energy industry AI solution that provides a relevant alternative to today’s inadequate

forecasting options.”

### **Serves as a standalone solution or as an integrated forecasting engine**

While Nostradamus AI is available now as a standalone solution as part of the company’s [Energy Portfolio Management](#) (EPM) solutions, the forecasting engine capabilities also can be integrated into a range of Hitachi Energy’s digital solutions, including its [Grid Edge Solutions](#) and [grid and generation management](#) (Network Manager) solutions, among others.

### **Note for Editors**

- Read more about Hitachi Energy’s [award-winning EPM](#) solutions.
- Learn more about the company’s self-service and managed market insights and forecasting capabilities through its EPM portfolio: Nostradamus AI, [power reference cases](#), and [market advisory services](#).

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### **About Hitachi Energy**

Hitachi Energy is a global technology leader that is advancing a sustainable energy future for all. We are advancing the world’s energy system to be more sustainable, flexible and secure and we collaborate with customers and partners to enable a sustainable energy future – for today’s generations and those to come. Hitachi Energy has a proven track record and unparalleled installed base in more than 140 countries, serving customers in utility, industry, transportation, data centers and infrastructure sectors. With innovative technologies and services including the integration of more than 150 gigawatts of HVDC links into the power system, we help make the energy value chain more efficient, making electricity more accessible to all. Together with stakeholders across sectors and geographies, we enable the digital transformation required to accelerate the energy transition towards a carbon-neutral future. Headquartered in Switzerland, we employ around 45,000 people in 90 countries and generate business volumes of around \$13 billion USD.

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### **About Hitachi, Ltd.**

Hitachi drives Social Innovation Business, creating a sustainable society through the use of data and technology. We solve customers' and society's challenges with Lumada solutions leveraging IT, OT (Operational Technology) and products. Hitachi operates under the 3 business sectors of “Digital Systems & Services” – supporting our customers’ digital transformation; “Green Energy & Mobility” – contributing to a decarbonized society through energy and railway systems, and “Connective Industries” – connecting products through digital technology to provide solutions in various industries. Driven by Digital, Green, and Innovation, we aim for growth through co-creation with our customers. The company’s revenues as 3 sectors for fiscal year 2023 (ended March 31, 2024) totaled 8,564.3 billion yen, with 573 consolidated subsidiaries and approximately 270,000 employees worldwide. For more information on Hitachi, please visit the company's website at <https://www.hitachi.com>.

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