GE Vernova whitepapers offer pragmatic approach on AI for more intelligent energy grids

CAMBRIDGE, Mass. (June 10, 2025) – As utilities face increasing complexity in the modern energy landscape, GE Vernova Inc. (NYSE: GEV) has released two whitepapers examining the transformative potential of artificial intelligence (AI) in making electric grids more intelligent. These whitepapers are part of a comprehensive series exploring the application of AI to grid operations, planning, and energy market use cases.

First Whitepaper: Empower Intelligent Grids With AI (Download Here)

Utilities are navigating unprecedented challenges impacting the reliability and resiliency of the grid. Integrating both renewable and distributed energy sources like rooftop solar and battery storage makes it difficult for operators to keep the grid in balance. Data centers and broad electrification efforts present difficulties with increased and concentrated demand, along with variable and large energy load patterns. The frequency of extreme weather events and cyber threats threaten grid resilience. Traditional grid management approaches are proving inadequate in addressing these dynamic challenges. AI offers game-changing potential but integrating it into grid planning and operations can be difficult for utilities due to siloed data from disparate systems across operational technology (OT), information technology (IT), and external data (e.g. weather).

This whitepaper offers key steps and considerations to help utilities take a practical approach to successful AI adoption, with building a solid data foundation as an easy first step. It also looks at how GE Vernova's GridOS® Data Fabric can help utilities access, integrate, and contextualize energy data from GridOS applications and disparate sources in a single, unified view that spans transmission and distribution. Download here.

Second Whitepaper: AI in Grid Operations (Download Here)

Innovative AI capabilities are needed for grid operators to enhance operational insights, provide decision-making guidance, and offer advanced automation. This whitepaper delves deeper into the crucial role of AI in grid operations, with a focus on detection, prediction, and optimization. Key insights include:

- The complex challenges driving the need for AI adoption in real-time and near-real-time grid operations—intermittent renewables, higher peak loads, distributed generation, multi-directional energy flows, and severe weather events—as well as the requirements utilities must fulfill to successfully apply AI in these areas.

- An AI adoption framework that takes a pragmatic approach and accounts for risk, including technical and regulatory factors and the automation maturity journey that starts with decision support, then human-in-the-loop, and finally, full automation.

- Current and emerging AI/ML capabilities in grid operations, including forecasting, inertia prediction, disruption preparation, operator decision support (virtual operator), alarm analysis, log analysis, and more.

The whitepaper also looks at how GridOS, the first software portfolio designed specifically for grid orchestration, provides the necessary AI platform to support utilities in their AI/ML journey across various maturity levels and automation needs. GridOS comprises a microservices-based architecture and provides horizontal

scalability, solution composability, a grid-specific data foundation, and hybrid cloud deployment capability. All of these are essential for AI-enabled applications. Download here.

Quote from Mahesh Sudhakaran, General Manager of GE Vernova's Grid Software business: "There is no AI for electric grid networks without unlocking control system data. Our mission is to empower every utility to achieve grid orchestration through data and AI. We have a pragmatic approach to help utilities unlock their energy data and activate AI-enabled applications and train AI models so they can orchestrate a more intelligent grid."

Happening Now: GridOS Customer Conference

This announcement coincides with Orchestrate 2025, GE Vernova's annual GridOS customer conference. More than seventy global electric utilities are attending the event, which is taking place June 10–13 in Boston, MA. To learn more about how GE Vernova's grid orchestration software can help utilities achieve a more sustainable energy grid, click here.

About GE Vernova

GE Vernova Inc. (NYSE: GEV) is a purpose-built global energy company that includes Power, Electrification and Wind segments and is supported by its accelerator businesses. Building on over 130 years of experience tackling the world's challenges, GE Vernova is uniquely positioned to help lead the energy transition by continuing to electrify the world while simultaneously working to

decarbonize it. GE Vernova helps customers power economies and deliver electricity that is vital to health, safety, security, and improved quality of life. GE Vernova is headquartered in Cambridge, Massachusetts, U.S., with approximately 85,000 employees across approximately 100 countries around the world. Supported by the Company's purpose, The Energy to Change the World, GE Vernova technology helps deliver a more affordable, reliable, sustainable, and secure energy future.

GE Vernova's **Electrification Software** business is focused on delivering the intelligent applications and insights needed to accelerate electrification and decarbonization across the entire energy ecosystem – from how it's created, how it's orchestrated, to how it's consumed.

Grid Software business and GridOS® portfolio is trusted by global utilities to orchestrate a more sustainable energy grid and help deliver reliable and affordable electricity to their customers.

Power & Energy Resources Software helps improve reliability and drive decarbonization.

Proficy® Software & Services business delivers proven industrial software that improves efficiency and quality, enables connected workers, and operationalizes sustainability across diverse industries ranging from manufacturing to utilities.

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