# Innovative solutions for grid resilience and energy transition

Together with clients, partners, governments and other key stakeholders, [Hitachi Energy](http://www.hitachienergy.com) pioneers technologies to enable the digital transformation required to accelerate the energy transition towards a carbon-neutral future. The global technology leader provides the utility, industry and infrastructure sectors with innovative solutions and services across the value chain, says **Malvin Naicker**, MD for Sub-Saharan Africa.

“South Africa is seeing the wholesale transformation of its energy system,” says Naicker. It encompasses generation, transmission, distribution, storage, monitoring and control. As renewables ultimately replace fossil fuels, power grids must remain resilient and become even more flexible to adapt to fast-changing demands.

“It places the spotlight on innovative new technologies in the energy sector,” says Naicker. The focus on renewable energy and microgrid solutions with battery energy storage systems (BESS) is ideal to ensure stable and sustainable power by harnessing solar energy for a clean-energy future.

Even though coal continues to play a dominant role in South Africa’s power mix, the country can still leverage the massive opportunity of harnessing renewables and distributed energy resources. Here Asset Performance Management (APM) is key to continuously monitor the health of assets and predict potential failures and reprioritise maintenance.

Hitachi Energy’s Lumada APM not only enables a more effective maintenance management environment, but also improves the productivity of the technical teams carrying out the work. Hitachi Energy’s e-mesh™ digital ecosystem provides software management for distributed generation at both a local and fleet level, with built-in maintenance management for performance prediction.

The e-mesh portfolio offers end-to-end distributed energy solutions, combining advanced analytics, software technology, and hardware systems. Hitachi Energy’s PowerStore™ BESS ensures the highest penetration of renewables share, increases grid stability and provides reliable power while minimising CO2 emissions.

Hitachi Energy’s BESS solutions focus on grid support functions and are designed to work with third party batteries. Currently the technologies deployed in high energy projects include Lithium Iron Phosphate (LFP) and Li-ion chemistries. This could extend to other battery chemistries in the future.

Network Manager is an integrated network operations platform that includes advanced distribution management system (ADMS) capabilities to extend grid control and optimisation. It provides functionality for the safe and efficient operation of sub-transmission, medium- and low-voltage distribution networks.

“It is important to note that Hitachi Energy is a technology and solutions provider,” stresses Naicker. Its Energy Trading & Risk Management (ETRM) solutions consistently win awards and recognition from users and renowned industry think tanks, thereby confirming its proven track record as a global ETRM leader.

Hitachi Energy assists organisations to meet sustainability targets, minimise market risk while maximising profitability and comply with ever-changing industry regulations and standards. Its ETRM solutions are uniquely positioned to support the ‘three Ds of energy’: Decarbonisation, Digitalisation and Decentralisation.

These drive the energy transition as well as commodities that enable renewable energy technologies. Serving producers, utilities and trading companies across the globe, Hitachi Energy’s award-winning ETRM solutions are purpose-built software systems designed to automate complex tasks that support the entire trade cycle from the front to the back office.

**About Hitachi Energy**

Hitachi Energy is a global technology leader that is advancing a sustainable energy future for all. We serve customers in the utility, industry and infrastructure sectors with innovative solutions and services across the value chain. Together with customers and partners, we pioneer technologies and enable the digital transformation required to accelerate the energy transition towards a carbon-neutral future. We are advancing the world’s energy system to become more sustainable, flexible and secure whilst balancing social, environmental and economic value. Hitachi Energy has a proven track record and unparalleled installed base in more than 140 countries. Headquartered in Switzerland, we employ around 38,000 people in 90 countries and generate business volumes of approximately $10 billion USD.    
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**About Hitachi Ltd.**

Hitachi drives Social Innovation Business, creating a sustainable society with data and technology. We will solve customers' and society's challenges with Lumada solutions leveraging IT, OT (Operational Technology) and products, under the business structure of Digital Systems & Services, Green Energy & Mobility, Connective Industries and Automotive Systems. Driven by green, digital, and innovation, we aim for growth through collaboration with our customers. The company’s consolidated revenues for fiscal year 2021 (ended March 31, 2022) totaled 10,264.6 billion yen ($84,136 million USD), with 853 consolidated subsidiaries and approximately 370,000 employees worldwide. For more information on Hitachi, please visit the company's website at [https://www.hitachi.com](https://www.hitachi.com/).

**Contact:**

Lerato Nkosi

Country Communications Manager, South and Southern Africa

Hitachi Energy Ltd.

+27 77 3644 5464

lerato.nkosi@hitachienergy.com