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Human capital and hardware needed to future-ready energy system – TNB

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KUALA LUMPUR: A secure, future-ready energy system is not just about physical infrastructure; intelligence, connectivity and the people who power it are equally important, Tenaga Nasional Bhd's chief information officer Azlan Ahmad said.

"Progress starts with the right strategic investments in technology," he said in a statement yesterday.

These investments transform the grid into a flexible, dynamic and resilient platform, effectively evolving the physical structure into a sophisticated digital ecosystem that operates intelligently and securely.

"Artificial intelligence (AI) is transforming utility operations," he said, sharing his views on how to secure today's energy system while preparing for tomorrow's at the recent Singapore International Energy Week (SIEW) 2025.

With strong digital foundations, AI improves efficiency, enables real-time visibility and advanced simulations, and even delivers self-healing features for the grid.

"It also strengthens security through predictive threat detection and early anomaly identification, keeping power stable and safe for everyone," he said.

Azlan emphasised that meaningful progress requires collaboration, partnerships and diverse expertise. By collaborating with universities and nurturing new talent, TNB is shaping a digital energy future that is secure, sustainable and inclusive.

He also said that the foundation of TNB's digital transformation is an AI-ready energy transition.

The AI-ready ecosystem comprises a combination of intelligence, adaptive and low-carbon imperatives.

AI needs sustainable energy to grow responsibly, while energy systems need AI to operate efficiently.

TNB is actively bridging

these two worlds – building Malaysia's AI-ready grid while embedding AI within its operations for Asean interconnectivity, he said, addressing energy industry professionals at the event, reportedly 24,000 onsite and online from over 80 countries.

Themed "Securing Today's Energy System, Transforming Energy for Tomorrow," SIEW focuses on fundamental issues within the energy industry, including ensuring a reliable and secure energy supply.

On how Asia could lead the global conversation on secure energy systems and how partnerships are essential to its energy leadership, he said that energy-AI interdependency is crucial.

Energy security depends on AI, from real-time threat detection to efficient renewable balancing, while AI expansion, in turn, depends on secure, reliable and low-carbon energy.

"This interdependency is shaping new forms of partnerships between utilities, data centres and digital innovators to build resilient and intelligent energy ecosystems," he said.

"Digitalisation supports strategic balancing and energy equity within the region," he said.

Elaborating, he said digitalisation is the backbone of regional integration, as it transforms energy infrastructure into intelligent, value-generating networks that empower the Asean Power Grid to thrive securely.

Digitalisation combines resilience with returns on investment, turning cyber and digital investments into business value, he said.

It also involves collaboration that multiplies value, where shared standards, data, and intelligence collectively raise the return on regional digitalisation.

"Asean's integration depends on trusted, resilient digital-ready grids," said Azlan. — Bernama