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Nuclear beyond constraints

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Nuclear beyond constraints

Even as solar and wind expand, intermittency and storage hurdles keep them from standing alone as the backbone of modern economies

HOUSTON: Nuclear energy should be part of the global solution to meet surging electricity demand while cutting carbon emissions, according to a technology (tech) futurist Pablos Holman.

Consequently, Holman said the world would need to dramatically scale up clean and reliable power generation in the decades ahead.

He said the world must rethink how it plans its energy systems for the long term, warning that existing approaches are insufficient to support population growth, industrial expansion and the rapid rise of energy-intensive technologies such as artificial intelligence (AI).

“Humanity has reached a point where energy demand is increasing faster than the capacity of current systems to supply it sustainably.

“The global population has grown to about eight billion and continues to place mounting pressure on electricity generation, transport, manufacturing and digital infrastructure,” he said during his keynote address at the 3DExperience World 2026 by Dassault Systemes recently.

The event draws about 4,000 participants from all around the world, including designers, engineers, entrepreneurs and business leaders.

Holman said global energy production would have to increase several-fold just to meet existing needs, even before accounting for future technologies and new industries.

Holman is the bestselling author of *Deep Future*, published last year by Forbes, and is one of the top speakers in the world, known as the number one technology futurist, specifically on AI, robotics, manufacturing data, emerging technology, and blockchain.

While acknowledging the progress made in renewable energy, such as solar and wind, he noted that these sources remain constrained by intermittency and storage challenges, making it difficult for them to serve as the sole backbone of modern economies.

“In contrast, nuclear energy offers a dense, reliable and low-emissions source of power that can operate continuously and



HOLMAN argues nuclear energy provides steady, low-carbon electricity capable of sustaining heavy industry and advanced technologies.

support large-scale industrial and technological growth,” he said.

Furthermore, Holman said a small amount of nuclear material contains vastly more usable energy than fossil fuels.

He said that with the right technologies, large existing stockpiles of depleted uranium could provide energy for generations without the need for new mining.

This, he said, could significantly reduce both the environmental footprint and supply risks associated with energy production.

The renewed attention on nuclear energy comes as many Asian countries reassess their long-term energy strategies amid rising electricity demand, the expansion of data centres, the electrification of transport, and growing pressure to meet climate commitments.

In Malaysia, the Nuklear Malaysia Vision 2030 (WNN 2030) is being strengthened through the implementation of strategic policies guided by the principles of professionalism, innovation, and social responsibility.

The government, through the Ministry of Energy Transition and Water Transformation (PETRA) and the Ministry of Science, Technology, and Innovation (MOSTI), has been mandated to develop the legal and regulatory framework governing the

implementation of nuclear energy in Malaysia.

Nuclear technology development in Malaysia is regulated under the Atomic Energy Licensing Act 1984 (Act 304) and is monitored by the International Atomic Energy Agency (IAEA).

Malaysia is also bound by international agreements, including the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) and the Comprehensive Nuclear-Test-Ban Treaty (CTBT).

More recently, PETRA said the Malaysia-United States Agreement on Reciprocal Trade (ART) does not change the direction of the country's nuclear policy.

While Malaysia is exploring the use of nuclear energy, the government remains committed to ensuring that any nuclear cooperation is in line with Malaysia's national interests, national security, and international commitments, without compromising the government's policy sovereignty and autonomy to make the best decisions for the country.

Nuclear energy had contributed RM9.16 billion to the country's economy between 2015 and 2024 through the exports of products derived from local nuclear technology. – BERNAMA