ARTICLE: EMBEDDING SUSTAINABILITY BY DESIGN:

TM NXERA DATA CENTRE

Malaysia's Data Centre Expansion: Growth Meets Constraint

Malaysia is emerging as a regional data centre hub, supported by national digital policies, hyperscaler investments and ASEAN connectivity advantages. The opportunity is significant and so are the infrastructure implications.

Malaysia's Energy Transition and Water Transformation Ministry (PETRA) projects that data centre electricity demand could reach approximately 12.9 GW by 2030 and 20.9 GW by 2040[1], reflecting the rapid growth of digital infrastructure across the country.

Data centre water demand is emerging as a material sustainability consideration. Reports suggest that combined demand across major states such as Johor, Selangor and Negeri Sembilan could amount to hundreds of millions of litres per day, highlighting the importance of efficient cooling and resource planning in new facilities[2].

An approximate industry benchmark for large scale data centres is that a 100 MW deployment can require around 4.2 million litres of water per day for cooling, depending on cooling technology and system design[3].

These figures define the structural realities of Malaysia's digital expansion.

For operators, sustainability is no longer a corporate narrative. It is an infrastructure constraint, a regulatory consideration and increasingly a capital allocation discipline.

1 *Putrajaya: Data centres could need more power by 2040 than Malaysia uses annually now*
2 *Malaysia water regulator to set strict water rules for data centres as number grows*
3 *Investments in water need to keep pace with influx of data centres*

Sustainability as Infrastructure Design

Data centres are energy-intensive, long-lived assets. As AI workloads, cloud migration and sovereign data localisation accelerate, demand for compute density and resilient power supply continues to rise.

The industry question is no longer whether demand will grow, but whether infrastructure can scale responsibly within grid, water and regulatory limits.

TM Nxera's approach is grounded in Sustainability by Design, Build and Operation, embedding environmental performance into asset architecture from the outset. Key performance targets include:

A Power Usage Effectiveness (PUE) of ≤1.30 at full load, compared to industry estimates of approximately 1.80 for many existing facilities

Integration of air and liquid cooling technologies for enhanced thermal efficiency

Renewable energy integration and smart Li-ion UPS systems to optimise energy management

On water stewardship, TM Nxera is targeting a Water Usage Effectiveness (WUE) of ≤2.11 L/kWh/year, supported by rainwater harvesting, condensate reuse and circular water strategies.

In construction, sustainability extends to embodied carbon management through the use of low-carbon concrete such as GGBFS, RCA and WCS, as well as embodied carbon tracking across steel, concrete and glass, while targeting LEED certification with the ambition of becoming the first GreenRE Platinum data centre in Malaysia.

These measures are designed to align operational resilience with environmental discipline, strengthening long-term asset viability.

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Enabling Sustainable Digital Growth for Enterprises

The sustainability impact of TM Nxera extends beyond its own footprint.

As enterprises accelerate cloud adoption, AI deployment and digital platform integration, many face a structural choice between building their own proprietary server infrastructure or leveraging centralised facilities.

Purpose-built, high-efficiency data centre infrastructure can reduce the need for enterprises to allocate capital to land acquisition, cooling systems, power redundancy and security infrastructure. It lowers operational complexity and improves energy efficiency, compared with fragmented server environments and enables faster access to cloud, AI platforms and infrastructure.

For smaller and mid-sized organisations, access to secure, sovereign-grade infrastructure within TM Nxera facilities enables them to readily participate in digital and AI initiatives without significant upfront investment.

By centralising compute, storage and AI workloads within energy-optimised facilities, TM Nxera reduces duplication of physical infrastructure across industries and supports a more efficient digital ecosystem overall. This shared infrastructure model strengthens sustainability outcomes while improving capital efficiency for customers.

Market Discipline and Long-Term Value

For capital markets, data centres are capital-intensive assets with long operating horizons. Their resilience depends on grid stability, renewable integration, regulatory alignment, energy and water efficiency and their ability to support next-generation AI and cloud workloads.

Malaysia's ambition to become a regional data centre hub must therefore be matched by infrastructure that is efficient, accountable and scalable.

By embedding sustainability into measurable design parameters such as PUE, WUE, embodied carbon management and renewable integration, TM Nxera positions itself to operate within tightening environmental frameworks while supporting national digital growth.

This approach strengthens TM's ability to partner with hyperscalers, Government agencies and enterprises that increasingly require infrastructure aligned with sustainability and compliance standards.

Supporting PWR 2030: Infrastructure Leadership Beyond Connectivity

Under PWR 2030, TM is in the Defend and Build phase from 2024 to 2026, strengthening core connectivity while expanding into digital platforms and infrastructure. Data centres form part of TM's Next Leap initiatives to accelerate growth and diversify revenue streams.

The aspiration is to position TM as a Digital Powerhouse by 2030, pioneering industry growth through digitalisation and sustainability while establishing infrastructure leadership in high-impact segments.

TM Nxera supports this ambition by anchoring hyperscaler partnerships, enabling sovereign cloud capabilities for Government and enterprise and providing AI-ready infrastructure that supports GPU-intensive workloads.

As hyperscalers deepen their presence in Malaysia and ASEAN digital integration advances, sustainable and resilient infrastructure becomes a key differentiator in reliability, compliance and long-term cost efficiency.

Through Sustainability by Design, TM reinforces its role as a responsible enabler of Malaysia's AI-driven economy, aligning growth, resilience and environmental discipline under PWR 2030.