Full English translation of the webpage **"The Future of Sustainable Data Centers in ASEAN – Malaysian Legal Lessons as a Wake-Up Call"**, originally published by JST on June 19, 2025, with authorization from The Conversation:

The Future of Sustainable Data Centers in ASEAN – Malaysian Legal Lessons as a Wake-Up Call

Southeast Asia is undergoing a digital revolution. With the rapid development of artificial intelligence (AI), e-commerce, and cloud computing, the region has become one of the world's most ambitious hubs for data-center development (spap.jst.go.jp).

As digital technologies reshape ASEAN economies, the region's legal and regulatory frameworks remain stuck in a pre-digital era. This raises a critical question: **"Can ASEAN truly build a sustainable and resilient data-center industry without modernizing its laws?"**

Malaysia: Digital Aspirations Versus Outdated Laws

Malaysia offers a clear example. In 2024, the country secured over USD 23.3 billion in data-center investment from Microsoft, Google, and AWS (spap.jst.go.jp)—bolstering its position as a regional technology hub. But while infrastructure is state-of-the-art, the supporting laws have not caught up. Key issues include:

1. **National Land Code (2020 amendment)**: Defines subdivision, land-use planning, land administration, and registration—but was drafted long before data centers existed. It delegates more authority over conditions and restrictions to state land offices rather than planning authorities (spap.jst.go.jp).
2. **Town and Country Planning Act 1976 (Act 172)**: Grants local planning authorities broad powers, exceeding those of agencies like DOE, PWD, DID, and Minerals & Geoscience Department—leading to procedural roadblocks, and potential fines or disqualifications for developers if approvals aren't obtained (spap.jst.go.jp).
    - For instance, Johor recently rejected about 30% of data-center applications citing concerns about water and power consumption .
3. **Environmental Quality Act 1974 (Act 127)**: Requires EIA for large-scale developments including data centers. Although implementation is mostly consistent, weak oversight and inter-state variance in standards create compliance uncertainty (spap.jst.go.jp).
4. Data centers must also meet **road, drainage, building, and fire-safety regulations** from 1974 and 1984—but updated regulations are still evolving to keep pace with modern infrastructure needs .
5. A **"Data Center Planning Guideline"** was issued in 2024 to clarify land use, energy, and water requirements—but remains advisory, not legally binding (spap.jst.go.jp).

Federal-state jurisdictional fragmentation, entrenched in Malaysia's Constitution, undermines the guideline's effectiveness. This creates regulatory uncertainty, developer obstacles, and higher economic costs—ultimately slowing internet speed, service access, and tech-sector job creation.

The ASEAN-Wide Regulatory Challenge

Many ASEAN countries share these problems. Indonesia, Thailand, and the Philippines, for example, suffer from fragmented regulations, outdated zoning laws, and weak environmental oversight .

The **ASEAN Digital Masterplan 2025** highlights this warning: without regulatory reform, ASEAN will fall behind in global digital competition. The **AEC Blueprint 2025** similarly calls for predictable, transparent, and harmonized regulation to attract infrastructure investment—yet progress is limited (spap.jst.go.jp).

The **ASEAN Smart Cities Framework** urges states to break bureaucratic silos by adopting cross-sector governance models. Meanwhile, the **ASEAN Environmental Rights Framework** aims to promote environmental justice in infrastructure planning .

However, these regional policies require strong national implementation to be effective—otherwise they risk remaining aspirational

Lessons from Singapore and Abu Dhabi

Singapore has strengthened sustainability through its Green Building Masterplan and environment-centric laws—tailoring cooling systems to tropical climates . Meanwhile, Abu Dhabi applies the Estidama Pearl Rating System to ensure high water and energy efficiency in large developments .

These cases show that **clear rules, enforceability, and inter-governmental coordination are essential** for sustainable data centers.

Strategic Steps for ASEAN

What can ASEAN do?

1. **Harmonize laws** on land management, planning, environment, and construction to support cross-border digital infrastructure—and align with ASEAN's aspirations in the Digital Masterplan 2025 and AEC Blueprint 2025 (spap.jst.go.jp).
2. In countries like Malaysia and Indonesia, **streamline approval processes** across federal, state, and local levels—making them more transparent and investor-friendly .
3. **Develop ASEAN-wide sustainability standards** for data centers, integrated into land-use planning and environmental rights frameworks, and aligned with global ESG benchmarks (spap.jst.go.jp).

Conclusion

Data centers are fast becoming the backbone of ASEAN's digital economy—but their legal frameworks remain anchored in the past. For a truly sustainable digital future, ASEAN needs laws that balance growth, environmental protection, and public interest.

If ASEAN learns from Malaysia—and strengthens legal harmonization and enforceability—it can become a global model for **smart, sustainable digital infrastructure**. If not, it risks saddling its communities, investors, and environment with long-term costs.

Published June 19, 2025, by Professor Dr. Nuarrual Hilal Md Dahlan, School of Law, Universiti Utara Malaysia. Republished from The Conversation (June 3, 2025) with permission—the original article may not be reproduced without authorization.