## MALAYSIA'S BIG DATA CENTRE PUSH:

## STRONG POTENTIAL, REAL RISKS





# Table of Contents

INTRODUCTION	1
OVERVIEW OF MALAYSIA'S DATA CENTRE INDUSTRY	1-2
DRIVING MALAYSIA'S DATA CENTRE GROWTH: STRATEGIC MISSIONS AND INVESTMENT INCENTIVES	3
NAVIGATING THE HURDLES: KEY CHALLENGES AND RISKS IN DATA CENTRE DEVELOPMENT	4 - 6
CONCLUSION	7
APPENDIX 1 – KEY CONSIDERATIONS FOR SETTING UP A DATA CENTRE IN MALAYSIA	8 - 13
CONTACT US	14
LIST OF REFERENCES	15 - 17

#### INTRODUCTION

Recently, Malaysia has rapidly become a regional hub for data centre development and nation's strong government support and policies, competitive costs and ease of conducting have attracted investments from global technology players such as Microsoft, Google, NVIDIA and Amazon Web Services, with billions of Ringgits in data-centre-related investments pouring into the country in recent years.

This aligns with Malaysia's national priorities of accelerating the energy transition, strengthening local digital ecosystems, and creating high-value jobs. Investment incentives, including DESAC and Malaysia Digital Status, further enhance Malaysia's appeal, particularly for operators adopting sustainable and efficient technologies.

However, rapid expansion has exposed challenges, including lengthy approval processes, regulatory complexity, higher electricity costs. energy and water constraints, and environmental concerns. In response, the government has introduced streamlined approval mechanisms, energy and grid upgrades, water reuse initiatives, and stricter sustainability frameworks to ensure that the development of data centres align with the nation's policies without neglecting the interests of the public.

Overall, Malaysia's data centre industry presents strong growth opportunities, but its long-term success will depend on effective regulatory coordination, infrastructure readiness, and sustainable resource management.

In this article, we will discuss and explore the booming data centre industry in Malaysia and its underlying issues, where our beloved nation is seeking to futureproof itself for generations to come.



### OVERVIEW OF MALAYSIA'S DATA CENTRE INDUSTRY

Globally, the development of data centres has become essential due to the explosive growth of cloud computing, Artificial Intelligence (AI), digital services, and connected devices, creating an urgent need for secure, high-capacity infrastructure to support real-time operations and data-intensive applications.

Once viewed as a secondary alternative to Singapore, Malaysia has emerged as a preferred destination to global technology giants to build data centres.[1] Over the past five (5) years, Malaysia has been inundated with huge investments in this sector, with major international players entering the fray, and between 2021 and the first half of 2025, the approved data centre investment in Malaysia amounted to RM144.4 billion.[2]

In line with this momentum, global technology giants have been ramping up their presence in Malaysia and the following table highlights some of the key industry players driving this growth.

No.	Industry Players	Status
		In May 2024, Microsoft announced a USD2.2 billion (RM9.6 billion) investment in Malaysian data centres over the next four (4) years, to fuel Malaysia's cloud and Al transformation and to provide training opportunities for an additional 200,000 people.[3]
		Completed Project
1.	Microsoft	As part of its planned investment in the next four (4) years, in May 2025, Microsoft launched Malaysia West, its first Al-ready hyperscale cloud region in the country, featuring three (3) availability zones. A wide range of organizations, including Petronas as a key partner, along with FinHero, SCICOM Berhad, Senang, SIRIM Berhad, TNG Digital, and Veeam, are already leveraging the Malaysia West cloud region. Over the next four years, Microsoft, its partners, and customers using the cloud are projected to generate US\$10.9 billion in new revenues, with Malaysia West contributing about 16.9% of this total by 2028. [4]
		Planned and Ongoing Project
		In November 2025, Microsoft announced its upcoming cloud region, known as Southeast Asia 3, in Johor Bahru, Malaysia. This strategic investment aims to accelerate Al adoption across Southeast Asia, address the growing demand for reliable cloud services, foster sustainable economic growth, and enhance Malaysia's position as a regional leader in the digital economy. [5]
		Planned and Ongoing Projects
2.	Google	Google has also committed to invest USD2 billion in the City of Elmina in Shah Alam,     Selangor, for its first data centre and cloud region in Malaysia. The investment is     expected to support 26,500 jobs and bring in an economic impact of RM15.04 billion. [6] In May 2024, Google announced its first project involves a 49-acres hyperscale data centre in Elmina Business Park, slated for completion in 2026. [7]
		As part of the investment, <u>Google had in May 2025 acquired 389 acres of land in Negeri Sembilan, Malaysia from Gamuda Berhad</u> for approximately RM455 million for a planned data centre development.[8]
		Completed Project
3.	NVIDIA	Recently, in October 2025, Malaysia completed its first Nvidia-powered data centre, a RM10 billion project in Kulai, Johor, jointly developed by YTL Power International Bhd and Nvidia Corp. This facility, which is powered by liquid-cooled NVL72 Grace Blackwell (GB 200) GPUs, together with ILMU, represents a major step forward in building Malaysia's own Sovereign AI.[9]
		Completed Project
4.	Amazon	In August 2024, Amazon Web Services (AWS) added a new region to its cloud computing infrastructure in Cyberjaya, Selangor, powered entirely by Malaysian data centres which forms part of AWS' commitment to invest around RM29.2 billion (USD6.2 billion) in Malaysia by 2038.[10] Given the current growth and trajectory, AWS is expected to contribute RM57.3 billion to the national GDP.[11]

## DRIVING MALAYSIA'S DATA CENTRE GROWTH: STRATEGIC MISSIONS AND INVESTMENT INCENTIVES

#### (a) Missions for the Malaysian Economy

The development of Malaysia's data centre sector is guided by three core missions that reflect both national economic priorities and global technological trends:

- leading the way in energy transition, shifting away from coal to low emission sources[12];
- building a competitive and inclusive ecosystem by investing in a Malaysian equipment supply chain, growing local vendors, service providers, innovators, and manufacturers to achieve greater potential[13]; and
- creating data centre service jobs for Malaysia and the region across the whole value chain of the data centre sector[14].

## (b) Incentives to Power Data Centre Investments

December 2024, Malaysia In implemented the Digital Ecosystem Acceleration Scheme (DESAC) that offers attractive tax incentives designed to encourage data centre operators who adopt sustainable practices such as power usage and water efficiency equipment as well as environmentally friendly sources.[15] According to the announcement made by the Ministry of Digital on 5 November 2025, the total number of data centre investments projects approved during the period 2021 until June 30 2025 is 143 projects, out of this total, 25 projects with Malaysia Digital (MD) status has been approved for the DESAC incentive, with a total investment of RM144.4 billion.[16]

- Eligible digital infrastructure providers may receive income tax exemption equivalent to investment tax allowance or special tax rate on statutory income.[17]
- In addition, Malaysia offers a range of attractive tax and fiscal incentives for companies investing in its digital economy. Businesses awarded the Malaysia Digital Status (MDS) by Malaysia Digital Economy Corporation (MDEC) can access benefits exemptions. income tax investment allowances, and import duty relief under the Malaysia Digital Bill of Guarantees. Additionally, MDS-qualified companies may be eligible for the Malaysia Digital Tax Incentive (MDTI), which provides reduced tax rates or further investment allowances.[18]



## NAVIGATING THE HURDLES: KEY CHALLENGES AND RISKS IN DATA CENTRE DEVELOPMENT

While the surge in data centre development brings significant economic benefits, it has also surfaced several challenges that must be addressed to ensure long-term sustainability and responsible growth of the industry. This section walks you through some of the key challenges we have identified, along with the measures being taken to address them.

#### (a) Bureaucracy Bottlenecks: Long Approval Timelines

#### (i) Issue

Investors looking to develop data centres in Malaysia face significant challenges due to the complex and lengthy approval process. Multiple regulatory authorities are involved, each with its own requirements timelines, creating potential delays and uncertainty for project planning. fragmented system can result in inconsistent decisions on planning applications, making it difficult for developers to predict approval outcomes and slowing the pace of investment in the sector. Streamlining these processes is therefore critical to maintain Malaysia's attractiveness as a regional data centre hub.

#### (ii) Mitigating measures

To address the lengthy and complex approval process, several initiatives have been introduced to streamline data centre development in Malaysia. The Data Centre Task Force (DCTF), a multi-agency strategic platform established in February 2025, has designated MIDA as the focal point and lead agency for approving all new and expansion investment applications related to data centre projects. [19]

Further, fast-track initiatives such as Tenaga Nasional Berhad's Green Lane Pathway provide accelerated electricity supply and dedicated support, reducing connection times from up to 48 months to just 12 months. These measures not only streamline approvals but also promote efficient and sustainable operations, helping investors overcome one of the main hurdles in developing data centres in Malaysia. [20]

#### (b) Navigating Regulatory Complexity

#### (i) Issue

Developing data centres in Malaysia requires compliance with increasingly complex regulations and guidelines related to energy use, sustainability reporting, environmental impact, and cybersecurity.

#### (ii) Mitigating measures

To support sustainable growth in the sector, in January 2025, Malaysia's Ministry of Digital plans to launch the 'ASEAN Guide for Sustainable Data Centre Development'. This comprehensive framework is designed to provide the tools and guidance needed to build a data centre industry that drives economic growth while prioritising environmental sustainability.[21]

In conjunction with that, the Malaysian government intends to implement a national Sustainable Data Centre Framework by October 2025, ensuring that policies and development practices are coordinated, transparent, and proactive. [22] However, as of December 2025, the framework has not vet been released. and all sustainable development initiatives remain subject to the Guideline for Sustainable Development of Data Centres issued by MIDA in December 2024.

#### (c) Electricity Shortages

#### (i) Issue

Data centre operators are experiencing rate hikes for electricity costs due to a recent tariff hike[23] and unclear tariff pricing. Malaysia's new electricity tariff, effective 1 July 2025, will raise data centre operational costs due to higher base rates and increased network and capacity charges. Although initiatives like the Corporate Renewable Energy Supply Scheme (CRESS) aim to ease the impact, overall costs are expected to rise. Under the new RP4 regulatory period (1 July 2025–31 December 2026), Tenaga Nasional Berhad (TNB) will increase the base tariff in Peninsular Malaysia from 39.96 sen/kWh to 45.62 sen/kWh[24]

#### (ii) Mitigating measures

Malaysia is addressing the growing energy demands of data centres through a dual enhancing energy strategy focused on efficiency and increasing the use of renewable energy. By optimizing metrics such as Power Usage Effectiveness ("PUE"), the country aims to reduce energy consumption in data centre operations. At the same time, transitioning to cleaner energy sources helps environmental impact. Together, these efforts support the sustainable growth of the data centres sector while balancing technological progress with environmental responsibility.[25]

In addition, the Malaysian Committee for the Planning and Implementation of Electricity Supply and Tariff approved the Peninsular Generation Development Plan 2024-2050, which includes development of new gas-based generation capacity and increase in renewable energy, taking into consideration higher energy demand from data centres. [26] To ensure that Malaysia will be able to handle the energy demand from data centres, allocations have been set aside by the Government to upgrade the national electricity grid to become smarter and more flexible and be able to handle more intermittent renewable energy. [27]

#### (d) Water Shortages

#### (i) Issue

Data centres require substantial amounts of water for cooling. For instance, a 100MW data centre can consume approximately 1.1 million gallons of water per day, which is equivalent to the daily usage of a city with 10,000 residents. [28] Due to water shortage concerns, the Johor State Housing and Local Government Committee, announced that the state will no longer approve Tier 1 and Tier 2 data centres, focusing instead on Tier 3 and Tier 4 projects, offer higher value and lower environmental impact. Tier 1 and Tier 2 data centres can use up to 50 million litres a day, enough to supply more than 300,000 households or meet the daily drinking needs of 25 million people. Conversely, Tier 3 and Tier 4 centres, typically use only 200,000 litres of water a day.[29]

In line with the decision to scrap future approvals for Tier 1 and Tier 2 data centres, the Johor state government has also made approvals more stringent for Tier 3 and Tier 4 data centres by announcing that new applications would go through five levels of under PLANMalaysia, screening, technical committee evaluation, a full state coordinating committee meeting, a state planning committee session, and final approval by the relevant local council.[30] The committee shall then review six key areas. including water and electricity environmental impact, PUE and Water Usage Effectiveness ("WUE"), the availability of fibreoptic infrastructure, cooling technologies that reduce water dependency, and alternative water sources.[31]

This does not bode well for the existing Tier 1 and Tier 2 data centres as the reason for scrapping future approvals for Tier 1 and Tier 2 data centres revolves around water shortages and this may signal increased scrutiny for the existing water use, especially if water shortages worsen.

This may cause the authorities to impose stricter regulations on the existing Tier 1 and Tier 2 data centres or impose mandatory requirements for modifications such as retrofitting or upgrading to more water-efficient cooling technologies.

#### (ii) Mitigating measures

To support more sustainable water use in Malaysia's data centre industry, Malaysia's National Water Services Commission (SPAN) is promoting the adoption of treated effluent from sewage plants for cooling purposes, thereby reducing reliance on treated potable water. SPAN is working with Indah Water Konsortium (IWK) to identify and map suitable wastewater treatment plants that can be connected to current and future data centre developments. [32] Additionally, several data centres in Johor have already begun using reclaimed water for cooling through reverseosmosis systems modelled after Singapore's NEWater, in collaboration with Johor Special Water and Indah Water Konsortium.[33]

In order to mitigate the water issues that are associated with data centre developments, Microsoft, guided by its global Datacenter Community Pledge designed the upcoming Southeast Asia 3 cloud to achieve zero-water evaporation for cooling by adopting chip-level cooling solution through a closed loop. This approach will continually circulate water between servers and chillers, eliminating the need for a continuous fresh water supply. As a result, ongoing water consumption will be significantly reduced, supporting ultra-low WUE.[34]

#### (e) Carbon Footprint

#### (i) Issue

Direct emissions from data centres, arise from its operations including emissions produced from burning fossil fuels on-site, such as natural gas for backup generators or heating, chemical reactions within the facility, such as refrigerants used in cooling systems, waste incineration processes. Indirect emissions for data centres including electricity used to power IT equipment, cooling systems, lighting, and other operations.[35]

#### (ii) Mitigating measures

To mitigate the issue, the Malaysia Green Building Council released a Data Centre Tool and Reference Guide on 24 July 2025 and updated the Green Building Index to enhance sustainability practices in data centres by providing a performance-based framework that evaluates key metrics such as PUE, WUE, carbon offset strategies, and renewable energy usage. It supports responsible growth in Malaysia's rapidly expanding data centre industry.[36]



#### CONCLUSION

Malaysia's rapid rise as a regional data centre hub underscores the nation's strategic positioning in the global digital economy and robust frameworks and policies. Backed by record-breaking investments from technology giants such as Microsoft, Google, Amazon, and NVIDIA, Malaysia is transitioning from an alternative market to a primary destination for hyperscale and Al-driven infrastructure. The government's proactive policies including tax incentives, fast-track utility connections, and the establishment of a central approval and licensing framework, further strengthen Malaysia's competitiveness and long-term value proposition.

However, sustaining this momentum requires careful navigation of emerging challenges. Issues such as regulatory complexity, rising electricity tariffs, grid and water constraints, and increasing sustainability expectations pose real risks to project timelines and operational viability. At the same time, these challenges have catalysed significant structural reforms: the move toward renewable energy, the development of a national Data Centre Framework, expansion of grid capacity under long-term generation plans, and the introduction of environmental standards such as the Green Building Index for data centres.

Ultimately, Malaysia's ability to balance economic ambition with environmental stewardship will determine the future trajectory of its data centre sector. If the government and industry continue to collaborate closely to streamline approvals, accelerate energy transition efforts, and maintain transparent, robust regulatory frameworks, Malaysia will be well-positioned to cement itself as a sustainable, resilient, and globally competitive digital infrastructure powerhouse.

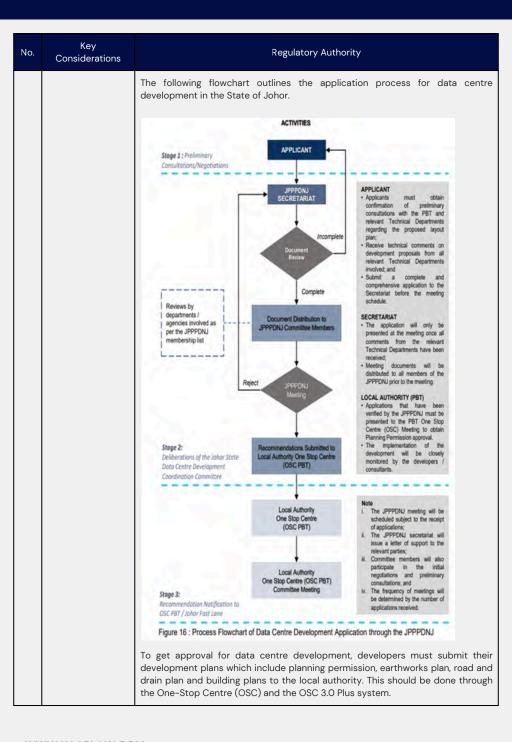


## APPENDIX 1 KEY CONSIDERATIONS FOR SETTING UP A DATA CENTRE IN MALAYSIA

Setting up a data centre in Malaysia requires careful planning across regulatory, technical, and operational dimensions. With the country's strategic location, robust infrastructure, and supportive government initiatives, Malaysia presents a compelling environment for data centre investments. To help navigate this process, the following guide outlines some of the key considerations for investors looking to establish and operate data centres in Malaysia and the relevant authorities to approach for the purposes of the development.

No.	Key Considerations	Regulatory Authority
1.	Incorporation of a Company	Companies Commission of Malaysia (CCM)  To develop a data centre in Malaysia, a company shall be incorporated under the Companies Act 2016 for purposes of business operations of the data centre. Typically, estimated timeline required is between 5 to 10 working days provided the necessary documents are complete.
2.	Facilitating Approvals and Incentives	Malaysian Investment Development Authority (MIDA) / Malaysian Communications and Multimedia Commission (MCMC)  To approve all new and expansion investment applications related to data centre projects, conduct assessment (incentives, grants, expatriate positions, customs taxes and facilitate bumiputra equity conditions. The Technical Code for Green Data Centres, developed by the Malaysian Technical Standards Forum Berhad (MTSFB) through its Technical Experts Group on Green Data Centres and supervised by the Green ICT Working Group, sets out the minimum requirements for green data centres. Its purpose is to guide the establishment of policies, systems, and processes that enhance energy efficiency and reduce the carbon footprint within the data centre industry. Application can be done through online registration via InvestMalaysia Portal [37]
3.	Licensing & Planning Permission	Local Authorities  Local Authorities for each state regulate development within their jurisdictions using OSC 3.0, introduced on 1 June 2014 as the third version of the One Stop Centre system established in 2007. OSC 3.0 streamlined procedures to reduce time and costs, enabling PBTs to receive applications, coordinate feedback from internal and external technical agencies, and allow the OSC Committee formed under Section 28 of the Local Government Act 1976 to decide on approvals. However, challenges persisted, including unclear guidelines, inconsistent implementation across PBTs, delays in technical agency feedback, and varying competency among Principal Submitting Persons (PSP). To address these issues, improvements were introduced from 2017 through stakeholder engagement and consultations, resulting in OSC 3.0 Plus, the latest version replacing OSC 3.0.[38]

No.	Key Considerations	Regulatory Authority
		PLAN Malaysia
		The function of PLANMalaysia is briefly explained as follows:[39]
		(a) Federal Level:
		The role involves advising the Federal Government on urban and rural planning matters, serving as secretary to the National Physical Planning Council (MPFN) under the Town and Country Planning Act 1976, and promoting an effective planning system through legislation, procedures, and research. It includes translating national social, economic, and environmental policies into spatial plans, facilitating and monitoring development plans at all levels, managing and publishing planning-related data and studies, and supervising the national land use database to ensure comprehensive and coordinated planning nationwide.
		(b) State Level:
		The role involves advising the State Government on urban and rural planning matters and coordinating the implementation of the Town and Country Planning Act 1976 at the state level, serving as secretary to the State Planning Committee (JPN), and overseeing development through the regulation and monitoring of development plans. It includes assisting in special state projects, conducting research and development on planning, managing and publishing planning-related data and studies, and preparing and coordinating the state land use database to ensure effective and integrated planning.
		(c) Local Level:
		The role focuses on planning, coordinating, and controlling land and building use within the local planning authority (PBPT) area, as well as facilitating and monitoring development through the implementation and regulation of development plans. It also involves managing and publishing planning-related data and studies, and performing additional tasks assigned by the State Authority (PBN) or State Planning Committee (JPN) as required.
		Invest Johor
		For example, in Johor, Invest Johor is a one-stop-centre that represents the state of Johor in dealing with investors. They also play an important role such as promotions, facilitation, coordination and development or investments in a broad sector of industries.[40]



No.	Key Considerations	Regulatory Authority
		Approval Process and Timeline
		(a) Method 1 – Application for Planning Permission (KM) Medium Category 3.0 Plus (99 days):
		Medium Category planning permission process under the OSC 3.0 Plus Manual (2019) and is only applicable when several key conditions are met. The project must comply with the express land-use condition and be located within a development scheme that already has an approved layout plan. It must also involve a main switching station operating at 33 kV or 11 kV with a maximum power capacity not exceeding 25 MVA for either a single customer or a public distribution licence. In addition, all required submissions—planning permission, road and drainage plans, earthworks plans, and building plans—must be submitted simultaneously. This streamlined pathway is intended only for data centre developments that meet these predefined criteria.[41]
		(b) Method 2 - Application for OSC 3.0 Plus Industrial Green Lane (IGL) Initiative (29 Days):
		Data centre developments within industrial zones are encouraged using Method 2, which requires prior agreement between the local authority's Mayor or President and the developer before formal submission through the OSC 3.0 Plus Online System. The initial technical coordination is conducted via a Technical Briefing Project (TBP) session, where the application is submitted to the Industrial Green Lane (IGL) Unit for preliminary comments within 14 days and to confirm project acceptance. The TBP session must be held physically and chaired by the Mayor or President, involving all stakeholders, including developers, PSP/SP, internal technical agencies of the local authority, and relevant external technical agencies.[42]
		(c) Method 3 - OSC 3.0 Plus Prerequisite (PR) Initiative Application (22 Days):
		The Prerequisite (PR) is an enhanced pre-consultation process based on an Easy-Self Regulated System concept, applicable to all development types, including data centres, and implemented through a new module in the OSC 3.0 Plus Online System. The Principal Submitting Person (PSP) submits applications online, which the local authority reviews and issues payment notifications. After payment, the application is distributed to technical agencies for compliance review, and the PSP receives a precondition notification letter. The local authority then presents the application to the OSC Committee for decision-making, after which the PSP pays development charges to obtain official approval.[43]
		(d) Method 4 – Application for Temporary Permit Plan and Small Construction Permit (33 Days):
		For data centre development in an existing building that does not involve amendments to the planning permission and the original building plan, the application can be submitted using this method.[44]

Regulatory Authority

Key

Considerations

No.

		State Authority / Ministry of Economy (MOE)
		Foreign companies planning to acquire or lease land for data centre projects in Malaysia must obtain prior approval from the relevant State Authority as specific restrictions or conditions on land use, foreign ownership, or development may be imposed. This approval process typically involves reviewing the proposed land for compatibility with zoning regulations, environmental considerations, and infrastructure access. Securing such consent is a critical prerequisite before finalising any acquisition or lease, ensuring that the project complies with local regulations and can proceed without legal or administrative delays.
		A. Ministry Of Economy's approvals [45]
		(a) Certain property acquisitions may also require approval from the Economic Planning Unit (EPU) under the Ministry of Economy, pursuant to the EPU's Guideline on the Acquisition of Properties. Transactions requiring EPU approval are generally classified as:
		(i) <b>Direct acquisitions</b> – Property valued at RM20 million or more, where the transaction results in a reduction of Bumiputera or Government agency ownership.
	Land Deleted	(ii) Indirect acquisitions – Acquisition of shares in a company owned by Bumiputera or Government interests, where more than 50% of the company's assets are property valued above RM20 million, resulting in a change of control.
4.	Land Related Matters	(b) Conditions for MOE Application
		Equity Requirement: Companies must have at least 30% Bumiputera shareholding.
		Paid-Up Capital: Local companies owned by local interests require a minimum paid-up capital of RM100,000, while companies with foreign interests require at least RM250,000.
		Foreign Consent: Submission under Section 433B approval.
		B. Foreign Consent under Section 433B
		Pursuant to section 433B of the National Land Code (Revised-2020), a non-citizen or a foreign company may acquire land only with approval of the relevant State Authority.
		C. Approval Process and Timeline
		<ul> <li>State Authority Consent: Typically, 1–6 months, with most approvals granted within 3 months if all required documents are submitted promptly.</li> <li>Land Title Review: Check for any restrictions on interest.</li> <li>Application Submission: Submit a formal application to the relevant State Land Authority where the property is registered.</li> <li>MOE Approval: Decisions on complete applications are usually issued within 10 working days.[46]</li> </ul>

No.	Key Considerations	Regulatory Authority
5.	Access to Utilities	Utilities Companies / Department of Safety and Health (DOSH)  Reliable utility access is essential for data centre development in Malaysia. Facilities must meet specific electrical infrastructure requirements—from 1lkV for smaller centres up to 132kV or 275kV for hyperscale sites—and are encouraged to locate near existing transmission lines while adopting energy-efficient designs aligned with PUE benchmarks.  Water supply is also critical, with developers expected to ensure continuous daily availability, sufficient on-site storage, and the use of water-efficient or renewable technologies.  In addition, certain equipment used in data centres may require registration with
6.	Environmental Related Matters	DOSH to ensure compliance with safety and regulatory standards.  Department of Environment  To obtain key inputs for the pre-development Environmental Impact Assessment (EIA), including assessing the proposed data centre's potential effects on land use, energy consumption, water demand, heat emissions, noise levels, and overall environmental sustainability, as well as identifying mitigation measures required before approvals can be granted.
7.	Workforce Related Matters	Ministry of Human Resources  Agencies under the Ministry of Human Resources, including the Employees Provident Fund (EPF), the Social Security Organisation (SOCSO), and the Inland Revenue Board (IRB) play an essential role in ensuring workforce compliance for data centre projects. As data centres require large teams of construction workers, engineers, technicians, and operational staff, these agencies oversee mandatory employee registrations, retirement and savings contributions, workplace insurance coverage, and the proper administration of income tax. Their involvement ensures that data centre developers and operators maintain full compliance with Malaysia's labour, safety, and taxation frameworks throughout both the construction and operational phases.

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