The Untapped Frontier: How Can OGSE Players Power the Data Centre Revolution?



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1.0 Introduction

The global data centre industry is entering an unprecedented expansion cycle, fuelled by the rapid rise of artificial intelligence (AI), cloud computing, and large-scale digitalisation across every sector of the economy. By 2030, analysts expect more than 2,000 new data centres to be constructed worldwide.[1] This growth is backed by massive capital investment, with global data centre infrastructure spending projected to reach almost USD7 trillion over the next five years.[1]

As development accelerates, several factors are shaping where and how data centres are built. Investors and operators are prioritising energy and power availability, access to water, regulatory efficiency, and the broader sustainability profile of each location. Energy, in particular, has become a defining constraint. According to the International Energy Agency (IEA), global data centre electricity consumption reached 415 TWh in 2024[2] and is expected to more than double to 945 TWh by 2030.[3]

Against this backdrop, Malaysia is emerging as one of the fastest-growing data centre hubs in the region. The sector is set to more than triple in value, from USD4 billion in 2024 to USD13.6 billion by 2030, supported by cumulative electricity supply agreements (ESAs) with a total maximum demand of 6.7 GW that Tenaga Nasional Berhad has locked in across 47 projects as of June 2025.[4]

The Malaysian Investment Development Authority (MIDA) projects that data centre power consumption in Malaysia could exceed 5 GW by 2035, representing nearly 40% of Peninsular Malaysia's current installed capacity.[4] As of Q1 2025, Malaysia's total data centre capacity stood at 522 MW operational, 1,250 MW under construction, and more than 3,750 MW in the planning stage—a trajectory that could lift total capacity to 5,522 MW by 2030.[4]

Figure 1.0: AI-Ready Data Centre in Malaysia Opened by AirTrunk, an Asia-Pacific & Middle East (APME) Technology Company



Note. From *AirTrunk*, *n.d.*, https://airtrunk.com/airtrunk-opens-ai-ready-data-centre-in-malaysia-accelerating-innovation-and-the-energy-transition/

These global and local trends reveal an opportunity that positions the data centre boom as a potential frontier for Malaysia's Oil & Gas Services and Equipment (OGSE) companies, offering pathways into power systems, infrastructure development, engineering services, energy solutions, and sustainable technologies.

2.0 Headwinds Facing Data Centre Buildout

While there is a strong growth outlook, the pace and scale of data centre development are increasingly constrained by structural challenges. These headwinds are reshaping how data centres are planned, built, and operated, with direct implications for infrastructure providers and the wider energy ecosystem.

i. Energy Consumption and Sustainability Pressure

Data centres are inherently energy-intensive, and rising demand from AI workloads has intensified scrutiny on their environmental footprint. Electricity consumption from data centres is growing faster than overall power demand in many markets, putting pressure on operators to decouple growth from emissions. Sustainability is no longer a secondary consideration. Data centre developers are under increasing pressure from regulators, investors, and customers to adopt low-carbon solutions. This has driven greater focus on energy-efficient hardware, advanced cooling systems, renewable energy procurement, and long-term decarbonisation strategies.

ii. Grid Connection Bottlenecks

Grid capacity is not keeping pace with data centre demand, making power availability a primary constraint on new developments. In many regions, access to grid capacity now determines whether projects can proceed. These constraints delay new builds and expansions, increase power reliability risks, and reshape site selection. Long transmission build-out timelines, often four to eight years due to permitting and equipment lead times, are pushing developers to prioritise locations near existing grid infrastructure.

Figure 2.0: A row of high-voltage electricity pylons traversing a field



Note: From *Recessary, 2024,* http://www.reccessary.com/en/news/malaysia-to-increase-renewable-energy-to-70-exploring-export-opportunities

iii. Supply Chain Constraints

Supply chain pressures have intensified alongside rapid data centre expansion. Power infrastructure requirements, cooling systems, electrical equipment, and rising material costs have all contributed to longer lead times and higher project risk. While transformers and switchgear remain in tight supply, procurement delays are only part of the challenge. Coordination across engineering, manufacturing, logistics, and installation has become more complex, particularly for large-scale, power-dense facilities. These constraints can delay commissioning timelines and increase capital costs, placing further pressure on developers to secure reliable delivery partners early in the project lifecycle.

iv. Talent and Capability Gaps

The scale and technical complexity of modern data centres have exposed a growing talent gap. There is a shortage of skilled technicians and engineers with experience in electrical and mechanical installations. This skills shortfall affects construction timelines, commissioning quality, and long-term operations. As data centres increasingly integrate renewable energy, energy storage, and digital monitoring systems, the need for specialised technical expertise will only grow. Addressing this gap will be critical to sustaining industry growth.

3.0 Where Can OGSE Companies Enter the Picture?

The scale, speed, and complexity of data centre buildouts are reshaping traditional infrastructure delivery models. Data centre developers are increasingly seeking partners with deep experience in power infrastructure, complex project execution, and long-lead asset delivery. OGSE players bring decades of expertise developed in capital-intensive, safety-critical, and power-reliant environments. Many of the challenges now facing data centres mirror those long navigated by the oil & gas sector, positioning OGSE companies as natural contributors to the next phase of digital infrastructure growth.

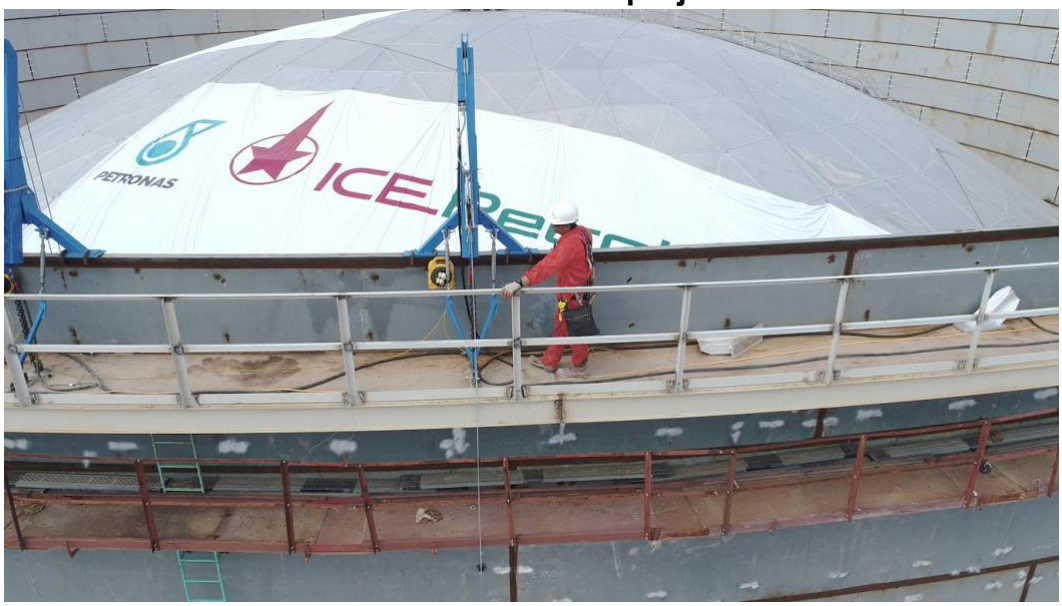
i. Power Access and Transmission

Many OGSE companies already possess deep and proven capabilities in electrical equipment and services, developed through decades of delivering power-intensive oil & gas infrastructure. These capabilities are embedded within their EPC and O&M scopes and span the full electrical value chain, from design and engineering through to construction, testing, commissioning, and maintenance.

Oil & gas service providers routinely deliver electrical systems that are relevant to those required for data centre power access. This typically includes plant-level and grid-interface electrical works such as power distribution panels, MV and HV switchgear installation, control systems, cabling, and utility coordination during grid connection and commissioning. For example, HEXA Oil & Gas Services provides turnkey electrical solutions across the Middle East,

covering panel building, wiring, testing, and system integration for downstream and industrial energy assets. In Malaysia, ICE Petroleum Engineering delivers electrical engineering and systems integration services for grid-connected facilities across the energy value chain. Global players such as GE's oil & gas businesses further demonstrate the sector's depth in electrically driven equipment and supporting power systems.

Figure 3.0: An electrical engineer inspecting a cable for a PETRONAS and ICE Petroleum project



Note: From *icepetroleum.com, n.d., https://icepetroleum.com/services/engineering/*

Beyond equipment supply, OGSE companies that specialise in EPC work are accustomed to executing large-scale electrical works under complex regulatory, safety, and reliability constraints, both onshore and offshore. Their experience in managing utility interfaces, commissioning high-voltage systems within industrial facilities, and operating in constrained brownfield environments positions them well to support data centre developments where time to power is a critical bottleneck.

As data centre site selection increasingly depends on proximity to existing grid capacity rather than land availability, OGSE companies' electrical capabilities represent a practical and immediately deployable pathway to help accelerate

grid connection timelines and de-risk power access for new data centre projects.

ii. Engineering, Construction, and Project Delivery

Data centres demand fast-tracked delivery, high uptime, and rigorous safety and quality standards. OGSE companies are accustomed to executing complex engineering, construction, and project management scopes under similar constraints in oil & gas, LNG, and industrial projects. Their strengths in EPC delivery, brownfield integration, modular construction, and commissioning position them well to support data centre builds, particularly where speed, coordination across multiple contractors, and execution certainty are paramount.

iii. Talent Development in Electrical and Mechanical Systems

The rapid expansion of the data centre sector is exacerbating shortages of skilled electrical and mechanical talent. OGSE companies can play a key role in bridging this gap by redeploying experienced technicians, engineers, and supervisors familiar with high-reliability industrial systems. Through targeted training, certification pathways, and workforce transition programmes, OGSE players can help build the technical backbone required to operate and maintain power-intensive data centre facilities over the long term.

Together, these three entry points represent practical, near-term pathways for OGSE companies to participate in the data centre value chain without straying from their core strengths.

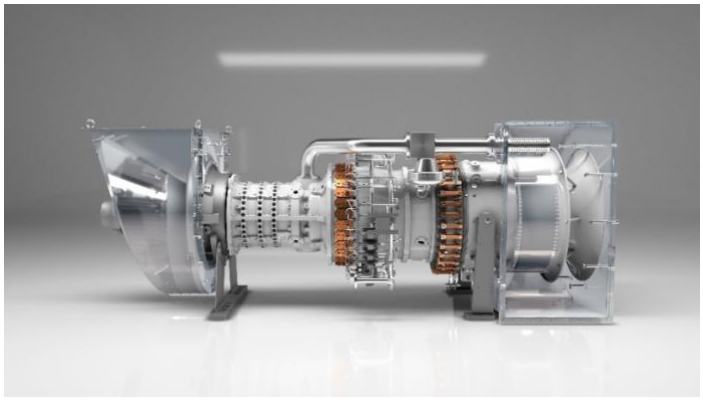
4.0 Inspiration for OGSE Players: Real-World Examples of Oil & Gas Supply Chain Companies in the Data Centre Space

The convergence of energy infrastructure and digital growth is already reshaping the strategies of oil & gas services companies. Several players, both global and local, have begun extending their capabilities into the data centre space, offering clear signals of where new growth opportunities lie for OGSE companies:

i. Baker Hughes: Powering Data Centre Infrastructure

Baker Hughes is among the most prominent oilfield services companies engaging with the data centre market. Through its Industrial and Energy Technology segment, which includes gas turbine and grid system solutions, the company has been supplying reliable power solutions for hyperscale data centres in the United States. In 2025, Baker Hughes recorded over USD4 billion in new orders in this segment, reflecting strong demand for energy infrastructure supporting data centre growth. Recent project awards include the supply of multiple gas turbines, notably an order involving 16 units capable of delivering more than 270 MW of power for data centre developments in Wyoming and Texas, demonstrating how its core power technologies are being adapted to meet the energy requirements of large-scale data centres. Baker Hughes is also collaborating with technology and infrastructure partners to develop integrated power and carbon management solutions, including projects that combine power generation with carbon capture and storage to support data centre loads.[6]

Figure 4.0: Baker Hughes' NovaLT™16 turbine supplied to TurbineX Energy for data centre development purposes



Note: From *XGroupofCompanies, n.d.,* https://x-group.com/Baker-Hughes#

ii. Halliburton: Entering the Data Centre Power Ecosystem

Halliburton has begun expanding into the data centre power space through strategic partnerships focused on delivering large-scale, reliable energy solutions. The company has partnered with power systems providers to support deployments designed for AI and next-generation data centres, including gas-fired power solutions that address the sector's growing energy intensity. These moves align with a broader industry trend in which oilfield services leaders such as Baker Hughes, Halliburton, and SLB are increasingly targeting data centre and artificial intelligence infrastructure to diversify beyond traditional drilling activity and leverage their experience in industrial power systems.[6]

iii. Local Player Example: EXS Synergy

Closer to home, EXS Synergy illustrates how local OGSE companies have already forayed into the data centre value chain. The company supports data centre operators and contractors through services that draw on its electrical and workforce expertise, including power rental and load bank services for commissioning, certified manpower for operations and maintenance, and LV and MV electrical and ELV works. This example demonstrates that OGSE entry into the data centre sector does not require ownership of generation or grid assets, as execution-focused services, electrical expertise, and reliable manpower are equally critical to enabling successful data centre buildout and operations.

Together, these examples illustrate a clear and practical message. Capabilities developed in oil & gas such as electrical systems expertise, power reliability, disciplined project execution, and skilled technical manpower are increasingly valued in the data centre sector. For OGSE companies willing to reposition and adapt, data centres represent a credible and growing frontier for diversification and long-term growth.

5.0 Call to Action: Going Beyond OGSE

With the data centre market set to more than triple in value, from around USD4 billion in 2024 to USD13.6 billion by 2030, it represents a compelling new frontier for OGSE companies seeking opportunities beyond traditional oil & gas markets. As OGSE players assess how their existing capabilities can be repositioned for this space, early engagement and a clear understanding of market dynamics will be critical. Malaysia Petroleum Resources Corporation (MPRC) can serve as a starting point for industry engagement and strategic dialogue. In addition, MPRC provides targeted assistance programmes to support OGSE companies venturing into new business streams within the energy transition, including the Growth Beyond OGSE (GBO), OGSE Sector Partnership Support Programme (SPSP), and OGSE Development Grant (DG). These programmes are designed to help OGSE companies build capabilities, form partnerships, and de-risk entry into emerging opportunities such as data centres and other energy transition-related sectors. OGSE companies interested in exploring this frontier are encouraged to connect with MPRC to begin the conversation.

Sources:

[1] *Data Centre 2026 Outlook: Energy, Infrastructure, and Connectivity | Morgan Lewis - JDSupra*

[2] *Energy demand from AI – Energy and AI – Analysis - IEA*

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[4] *https://www.mida.gov.my/events/mida-powers-up-malaysias-digital-future-at-data-centre-nexus-2025/*

[5] *Energy and AI, World Energy Outlook Special Report , IEA*

[6] *https://www.reuters.com/business/energy/oilfield-giants-pivot-booming-ai-infrastructure-drilling-demand-wanes-2025-10-27/?utm_source=chatgpt.com*