JAPAN ENERGY SUMMIT & EXHIBITION

18-20 JUNE 2025 | **Tokyo Big Sight**

LEADERSHIP ROUNDTABLE SUMMARY REPORT

Data Centre Energy Infrastructure: Can Japan's Power Sector Rise to the Challenge?

DATE AND TIME:
THURSDAY, 19 JUNE 2025
13:30 – 15:00

HOSTED BY:
bp

Data Centre Energy Infrastructure: Can Japan's Power Sector Rise to the Challenge?

INTRODUCTION:

As the digital economy expands and cloud services proliferate, data centers are becoming increasingly vital to Japan's technological infrastructure and competitiveness. However, this growth is accompanied by surging electricity demand, presenting challenges in a country already grappling with energy security, high power prices and carbon emission reduction targets.

This roundtable gathered key leaders and stakeholders together to discuss trends in data center development in a global context, key bottlenecks and challenges, and potential opportunities and solutions. The aim will be to accelerate the deployment of secure power supply supporting a sustainable future for Japan's data centers.

The roundtable brought together experts from the data center industry, the energy sector, financial institutions and government to explore the critical intersection of data center growth and electricity supply in Japan.

In today's digital age, data centers serve as the backbone of our interconnected world, powering everything from cloud computing and artificial intelligence to everyday internet services. Japan, as a global technology leader, has seen a significant increase in data center investments and expansions in recent years. However, this growth comes with a substantial energy footprint.

Data centres are one of the key reasons that Japan's 7th Strategic Energy Plan (SEP) released in January 2025 pushed up the country's 2030 power demand forecast by 8% compared to the previous plan – a huge increase in a market that has had declining power demand until recently. Data center power demand is expected to more than double to around 5% of total demand by 2030. This increase in demand growth means that renewable targets have been pushed back by about four years, more effort is being put into restarting nuclear power, and grid infrastructure is under increasing strain.

The accelerated demand growth expectations set out in Japan's 7th SEP need over 60 GW of capacity additions by 2030, and 213 GW by 2040. This compares to Wood Mackenzie's forecast of 39 GW and 123 GW, respectively, showing a significant gap in the expected project pipeline. In addition the 7th SEP target of reaching 50% renewables share by 2040 will be extremely challenging to reach without major new policies to support renewables growth.

SESSION HOST:

Marisa Buchanan
SVP, Strategic Corporates & Partnerships - Gas & Low Carbon Energy
bp

Marisa has nearly 25 years of experience working in a variety of roles and organisations at the nexus of business, energy and carbon.

She currently serves as SVP of bp's strategic corporates & partnerships team, a role she started in November 2024. In this capacity, she leads a global team focused on managing strategic customer relationships, scaling business development and incubating new commercial solutions to our customers' evolving energy needs.

Marisa joined bp in 2022 as SVP of low carbon solutions, where she led bp's downstream biogas and carbon markets businesses for bp trading & shipping.

Prior to joining bp, she spent over 10 years in sustainable finance at JPMorgan Chase, including as Managing Director and Global Head of Sustainability, where she led a team responsible for developing and driving implementation of pragmatic and commercial sustainable finance strategies across the firm's lines of business and operations. She also led JPMorgan Chase's efforts on sustainability reporting, shareholder and client engagement, and sustainable finance policy and regulation.

Earlier in her career, Marisa was an energy analyst at Bloomberg where her research focused on assessing the impacts of energy policy and regulation on the electric power and oil & gas sectors. She also previously held roles in companies developing renewable energy assets and emission reduction projects for the voluntary and compliance carbon markets.

She received a B.A. from Wellesley College and a M.P.A. from Columbia University's School of International and Public Affairs.

SESSION MODERATOR:

Joshua Ngu
Vice Chairman - Asia
Wood Mackenzie

Joshua serves as vice chairman of Asia Pacific. He has been advising clients across upstream, gas, LNG, downstream, petrochemicals and energy transition including CCUS, hydrogen and carbon offsets since he first joined Wood Mackenzie in 2012. Joshua's cross sectorial experience allows him to approach energy transition in a holistic manner.

In his role, Joshua regularly engages with c-suite, senior executives and government representatives in the energy sector to discuss market trends and challenges faced by the industry in this ever-evolving global energy landscape. He is also a regular speaker in conferences across the region.

Joshua is also part of Wood Mackenzie's thought leadership executive, focused on harnessing Wood Mackenzie's extensive data and insights to dive deep into specific topics within the energy industry, while considering the complexities and interdependencies across the value chain, including the metals and mining sector.

Joshua also has previous experience working as part of a corporate finance team at a global bank, advising clients on M&A and capital raising in the natural resources sector.

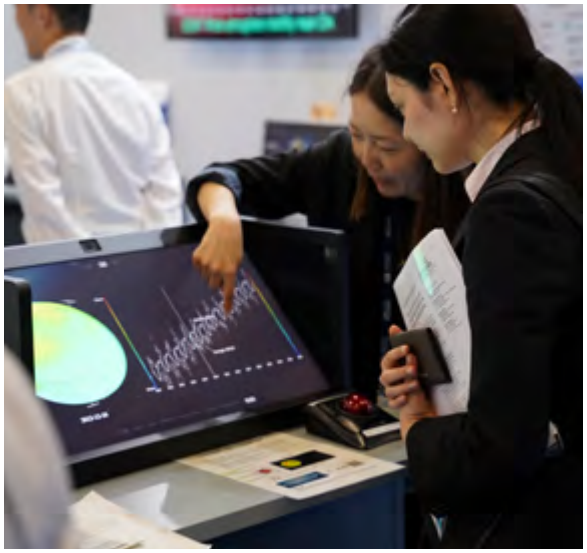
Artificial Intelligence (AI) and data centres have significantly increased expectations of power demand growth in Japan

Power demand for data centres has rapidly increased in the last few years and now accounts for about 2% of Japan's total. This has already reversed a more than decade-long trend of declining power demand in Japan, with 1% positive growth seen in 2024. The baseline forecast from Wood Mackenzie is for data center power demand to more than double by 2030, increasing to reach 5% of national demand. This growth has supported an 8% upgrade in the government's 2030 power demand outlook included in the 7th Strategic Energy Plan released earlier this year, compared to the previous plan.

Industry experts shared views that development of more sophisticated AI systems could lead to even faster growth in coming years. This would worsen existing power procurement challenges. Current adoption of AI in Japan is relatively low, estimated at well below 10% in many professional service industries, showing strong growth potential. A key uncertainty is the proliferation rate of "agentic AI" to solve complex problems in people's daily lives with close to no human supervision, which could increase per person power consumption for AI by many multiples if used widely.

Rapid changes in AI technology, deployment and uncertain expectations for power demand growth are creating challenges for government planners and utilities, who are accustomed to a steady and low-growth environment. However, the consensus is that AI power demand will continue to grow rapidly and play a significant role in Japan's energy future.

Infrastructure and energy will be the critical constraint to data centre development

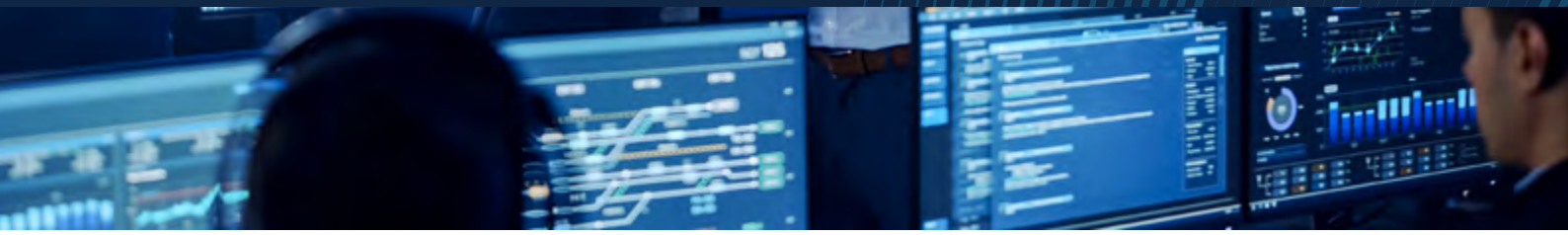


Power infrastructure has already become a bottleneck constraining growth and investment in new data centres. There is an estimated pipeline of 10 GW of data centre projects in the Tokyo region alone equivalent to 17% of peak load, which is more than double the expected supply expansion in coming years. Many data centre projects are stuck waiting for a grid-connection and power supply to 2030 and beyond.

Today, Japan faces critical infrastructure challenges around key data centre demand hubs Tokyo and Kansai. Data centre developers are competing to find sites near data infrastructure and population centers to maintain faster connection speeds. These sites are typically expensive in terms of power price - developers are relatively insensitive to price given the large budgets and urgency of data center investments. But they are finding that power supply is limited and slow to build, even at a premium.

Data centres can be built in as little as two to three years while grid expansion and power plants require 6-10 years or more. It will take many years for power supply to catch up to the existing pipeline of data centre projects, even before considering an upside scenario for new projects. This leaves developers in limbo looking at options for building their own captive power supply, redirecting power supply from other consumers, or relocating data centre growth to other regions or countries. The slow pace of power supply investment is constraining development of AI and data centre infrastructure in Japan.

Japan needs all the power it can get to meet the power demand from AI data centres. This could mean running the existing gas and coal capacities harder and faster, building more gas capacity, or accelerating the restart of nuclear power plants which has been signaled in the 7th Strategic Energy Plan. Speeding up growth in renewables and battery storage is also critical in areas such as distributed solar plus storage, offshore wind, and geothermal power.



AI could reshape the geopolitical landscape and energy industry

AI is now recognised as a technology that can significantly boost productivity, development of new knowledge, and future opportunities. It represents a key driver for economic growth, especially in developed economies where the industrial sector is in decline. The rise in importance of AI, internet services and the data economy has boosted the importance of the power sector for both energy security and infrastructure investment. All major countries now need to ensure sufficient power supply to support data centre demand and national competitiveness.

This shift creates new dimensions of technological sovereignty. Countries that fail to establish suitable environments for data centre infrastructure risk losing these facilities to other locations, losing out on investments, growth, and losing competitiveness relative to other markets. The stakes have never been higher for national energy planning.

Due to their massive economic resources and large energy demand, data centre developers are increasingly investing directly in power supply and infrastructure and are playing a larger role in global power and energy markets. The urgent need for power is channeling developers into more deals and investment into gas power including captive plants, renewables and battery storage, nuclear, and other technologies. There is more potential for data centre operators to build and operate their own large-scale power assets and provide power to other users, taking on the role of traditional power utilities. One participant noted it was a distinct possibility that a large hyper-scaler like Google or Meta could acquire and operate a regional utility to help alleviate power shortages.

Governments must recognise these imperatives and market changes, and collaborate with industry to realise economic growth opportunities built on strong growth in data centres. Utilities must build stronger knowledge and relationships with their new growth clients, data centres. And all corporate and industry leaders must also be aware that an AI strategy is not complete without considering energy supply and infrastructure and building expertise in this area. These partnerships will enable countries and companies to harness AI's potential whilst strengthening the competitiveness of the entire economy.

Next steps

The roundtable highlighted that current discussions around AI demand growth in Japan represent only the beginning of a fundamental transformation in how energy and technology infrastructure intersect. At present, information asymmetry exists between different stakeholders. More research and collaboration are required between planners in different government departments, traditional energy companies and utilities, and companies developing AI and data centres.

Strategic dialogue is essential for Japan to react rapidly to the changing technology landscape and to accelerate data centre site development and associated power infrastructure. Japan is at a critical juncture and has a window of opportunity to position as a regional leader in AI and data centre investments, greatly expanding the country's growth potential for the power sector and the wider economy.

JAPAN ENERGY SUMMIT & EXHIBITION

Save the Date

26 - 28 May 2026

Tokyo Big Sight

Following a landmark edition in June 2025, Japan Energy Summit & Exhibition now looks ahead to its return from 26–28 May 2026 at Tokyo Big Sight, where global energy leaders will reconvene to shape a resilient and sustainable energy future.

The summit and exhibition will unite senior decision-makers from government, industry, and finance to define actionable strategies that reinforce supply security, enable infrastructure expansion, and safeguard industrial competitiveness. Delegates will engage in vital discussions on energy policy, cross-border partnerships, investment frameworks, and technology deployment, all aligned with Japan's national energy priorities and its role as a regional convenor for cooperation and innovation.

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Leadership Roundtables: Shaping the global energy narrative

The invitation-only Leadership Roundtables are an important cornerstone of the event programme. Gathering C-level industry executives and policymakers for closed-door conversations that will address the greatest global energy issues from an Asian perspective, these high-level sessions generate the thought leadership and insight required to drive real progress towards net zero.

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