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Together makes progress

Powering Asia Pacific's data centre boom

A focus on India: Unlocking sector growth and accelerating decarbonisation together

Executive summary

The Asia Pacific region is set to become the world's next data centre hub

Data centres are critical for the Asia Pacific region's economic future, underpinning the ongoing development of vibrant digital economies. As demand for digital services accelerates, the region is poised to become the world's largest data centre market outside North America. Approximately US$800 billion in data centre investment is projected to flow to the region by 2030, boosting Asia Pacific's share of global data centre capacity to 40%.[1]

India has the potential to emerge as a key data centre hub in the APAC region if it is able to solve complex energy challenges

India contributes approximately 20% of the world's data consumption but hosts less than 5% of the world's data centres.[2] Indian drivers of data centre growth include sovereign data, rising AI use cases across industries and government, expanded digital connectivity to under-served communities, the proliferation of the Internet of Things (IoT), continued enterprise cloud growth and regulatory adoption, such as the Digital Personal Data Protection (DPDP) Act.

Budget 2026 – 2027 has proposed a tax holiday until 2047 for foreign companies providing cloud services to customers globally by setting up data centres in India. Alongside that, the Indian government has announced preferential tax treatment to further incentivise data centre development.[3] These measures have the potential to attract significant investment from global firms to supply digital demand in India and beyond its borders.

Additionally, India has structural advantages compared with many other countries in terms of lower construction costs, land rates, and power tariffs along with the availability of an AI skilled workforce.[2] This provides India with the opportunity to become a key global data centre hub.

As per the recently published Deloitte India - Niti Aayog report, India's data centre capacity is expected to scale from approximately 1.5 GW in 2025 to 8-10 GW by 2030.[2] India's AI-linked data centre build-out is expected to require an additional 40-45 TWh of power in 2030, up from the 10-15 TWh of consumption in 2024.[2,4] This would increase data centres' electricity consumption from approximately 0.8% of total consumption to 2.5 – 3% by 2030.[5]

To enable this growth in demand, significant investment will be required in power infrastructure. This report examines the drivers of data centre growth and how to sustainably power this critical infrastructure whilst reducing strain on the grid and supporting India's decarbonisation goals.

Clean energy can power the coming wave of data centre growth if it can overcome key challenges

A traditional data centre consumes around 5-10 kW per rack, but AI-focused racks can require at least 10-15 times more power.[2] India currently has a relatively low cost of electricity at US$0.08–0.14 per kwh, and 45 percent of its power grid is less than 10 years old, compared with only 23 percent of those in advanced economies such as Japan, Europe and US.[2] This modern grid foundation offers a strategic advantage for efficiently scaling up to meet future demand.

Given the ongoing significant growth in Indian power demand, a supply gap may emerge due to the anticipated rapid increase in data centres. Addressing this gap is critical to capture this transformative period's economic and sustainability dividends.

Data centres rely heavily on dedicated and uninterrupted power supply including minimal transmission losses. As "electricity" is a subject on the Concurrent List of the Indian Constitution, a significant concern is the varying regulatory frameworks between the centre and states, such as restrictive banking of renewable energy or excessive divergence in power tariff rates. However, this surge in energy demand also presents an opportunity to embrace the energy transition and invest in sustainable power infrastructure that ensures long-term returns.

Some of the key challenges with respect to power are as follows:

- State-level readiness to meet peak demand: Data centres are likely to remain concentrated in 4–5 major state hubs - Maharashtra, Tamil Nadu, Uttar Pradesh, Karnataka, Telangana and Andhra Pradesh. By 2030, data centres in these states could add an additional 2–3 GW of peak demand in each of the states, equivalent to roughly 5–20% of their current peak demand. This incremental load will put pressure on state grids, particularly during high-demand seasons, and could challenge the ability to provide uninterrupted power supply to data centre clusters during peak hours unless it is carefully planned and provisioned for through network strengthening and augmentation.
- Prioritising clean electricity for data centres: Most data centre providers and hyperscalers have committed to ambitious renewable energy targets, driven by cost efficiencies and to meet ESG goals. In the short to medium term, India's power mix is expected to remain fossil-heavy, with over 50% of generation still coming from fossil sources by 2030. Ensuring reliable, round-the-clock supply of clean power will therefore require robust planning and timely development of transmission infrastructure to evacuate power from renewable-rich regions to data centre hubs. Any delays in this grid build-out could become a bottleneck for the sector's growth.

- Lack of uniform renewable energy policies across different states: Renewable energy policies and regulations, such as banking provisions, cross-subsidies and open access charges, vary significantly across states and are revised frequently. This creates uncertainty about landed power costs and makes it difficult for developers and consumers to build predictable, round-the-clock renewable energy portfolios.

Solution themes to focus on for India

To sustainably manage rising demand, data centres in India have started transitioning towards renewable energy sources such as solar and wind power. Integrating renewable energy brings three key advantages: it reduces operational costs, enhances power usage effectiveness, and minimises environmental degradation.

To maximise renewable energy consumption, over-sizing solar plants and solar-wind hybrids along with storage solutions have been used by the data centre sector. The conjunction of mature renewable energy technologies and falling battery prices have been driving such projects. Various business models have been used, such as signing green energy PPAs with utilities, group captive structures, or setting up own captive units.

To further ease direct power procurement and avoid open access charges, states like Uttar Pradesh and Maharashtra have enabled eligible data centres and data centre parks to apply for deemed distribution licenses.[6] Maharashtra also allows data centres to set up captive power generation and distribution facilities.[7] Similar measures adopted by other states could further provide the necessary impetus to facilitate and disperse data centre investments.

Establishing solar plants next to a data centre is also a viable solution that can be explored. This solution, however, would only be viable in interior regions of the country where land availability and cost are less of a constraint compared with metro regions like Navi Mumbai where over 50% of India's data centres are currently hosted.

Transmission capacities need to be upgraded and enhanced to ensure limited delays due to evacuation constraints. Substation capacity expansion, feeder upgrades and expediting the Right of Way approval are critical. The Government, with the support of private actors, needs to solve this as a priority.

Virtual Power Purchase Agreements (VPPAs) are emerging as key enabler for data centre developers to decarbonise their electricity consumption. VPPAs are instrumental in overcoming local grid constraints and the limited availability of localised renewable energy. VPPAs signed by data centres also instil confidence to renewable energy developers by minimizing price risk with guaranteed payment on mutually agreed price. In India, the Central Electricity Regulatory Commission (CERC) has issued guidelines to enable VPPAs, providing much-needed regulatory clarity and a framework for corporate buyers, including data centre operators, to contract renewable power at scale.

In parallel, Renewable Energy Certificates (RECs) and international RECs (iRECs) offer a flexible, near-term pathway to manage residual emissions, and meet corporate sustainability commitments while grid and transmission infrastructure catch up. Used together with VPPAs, RECs and iRECs can help create a practical and credible transition pathway towards 24/7 clean power for data centres.

Looking ahead, Small Modular Reactors (SMRs) could also emerge as a viable source of reliable, low-carbon baseload power for data centres once it reaches full techno-commercial maturity. SMRs could offer the combination of high availability and stable output, making them well suited for dedicated and co-located power supply models. Globally, hyperscalers are already exploring this pathway - for example, Amazon has announced investments and partnerships linked to SMR development for future data centre power needs.[8]

India could also mitigate these constraints by building power-ready dedicated data centre zones (DCZs) ahead of demand, with pre-built substations, standardised connection timelines, and bankable firm power for high-density campuses. In fact, the Draft National Data Centre Policy 2025 highlights Data Centre Economic Zones (DCEZs) under a central framework with state-led implementation, a model some states have already adopted.[9,10] A formal national notification of DCEZs would standardise adoption and accelerate rollout.

Data centre compute loads are traditionally assumed to be consistent around the clock, in part because of customer uptime and reliability commitments built into data centre provider contracts. But given the wide range of tasks supported by data centres today, a more nuanced perspective recognises that compute loads have different characteristics.

Distinguishing between delay-sensitive and delay-tolerant workloads creates the potential for shifting some data centre processing activities to different times of the day and even to different locations to align with the availability of clean and affordable electricity. In addition to load shifting by time, data centre operators with multiple sites can also shift load by location, directing compute to facilities powered by the cleanest and cheapest energy throughout the day. This requires effective networking of facilities and smart platforms to efficiently allocate compute loads according to energy availability, which is an emerging opportunity to leverage artificial intelligence.

Additionally, reduction in the open access related charges and standardising state-level banking policies for use of renewable energy in data centres would help reduce uncertainty in landed costs and help provide a predictable round the clock portfolio.

India today is in a unique position to become a key global data centre hub. To achieve this ambition, current and likely future power constraints must be solved. Considering renewable energy penetration in India is mature, it can lead the way in a sustainable manner.

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Glossary

Terminology	Definition
Central Processing Unit (CPU)	The primary general-purpose processor in a data centre that executes core computing tasks such as application logic, databases and operating system functions.
Compute	The processing capacity of a data centre to perform calculations and run digital workloads, typically measured in terms of processing power, throughput or task completion.
Final energy consumption	The total amount of energy used by end users after conversion and transmission, representing the energy actually consumed in homes, businesses, industry and transport.
Firming	Technologies or services that ensure reliable electricity supply by balancing variable renewable generation, such as batteries, demand response or dispatchable generation.
Generation	The production of electricity from energy sources such as solar, wind, hydro, gas or coal.
Graphics Processing Unit (GPU)	A specialised processor optimised for parallel computing tasks, widely used in data centres for artificial intelligence, machine learning and high-performance workloads.
Levelised Cost of Energy	Levelised Cost of Energy (LCOE) is a metric for assessing the costs of building and operating energy generation assets over their lifecycle, taking into account capital, fuel and maintenance costs. It is a useful metric for comparing types of new-build capacity which may have different upfront construction and lifetime operating costs.
Power Usage Effectiveness (PUE)	A standard metric that measures data centre energy efficiency by comparing total facility energy use to the energy consumed by IT equipment.
Storage	Technologies that capture energy for later use, such as batteries, pumped hydro or thermal storage, enabling renewable electricity to be shifted across time to balance supply and demand.
Zero-emissions capacity share	The proportion of total electricity generation capacity that comes from sources with no direct greenhouse gas emissions, such as wind, solar, hydro and nuclear.

Introduction: The data centre dilemma

Economic opportunity and energy challenge

Data centres are essential infrastructure for 21st-century economies, enabling cloud services, communications, digital commerce and the deployment of AI tools and services.

Asia Pacific is already home to major data centre hubs in Japan, China and Singapore. Other markets such as Australia, India and Malaysia are rapidly attracting major new investment as demand for storage, analytics and processing accelerates.

The sector's rapid growth is an important opportunity for the region in the decade ahead, but comes with significant challenges. Chief among these is the need to meet the huge additional energy demand new data centres will create.

This new growth comes at a testing moment for Asia Pacific's energy systems. All regional governments are signatories to the Paris Agreement on climate change and are working to reduce national emissions. This shared effort is essential to limit dangerous climate change and protect the region's communities and economies from its disruptions. Decarbonising electricity systems and electrifying major sectors such as transport, industry and buildings are key levers for driving down emissions in the next 25 years. Electricity is projected to increase from 20% of the region's final energy consumption in 2023 to 45% by 2050 as a result.[11] Governments across Asia Pacific are therefore working to expand total electricity system capacity and shift towards low- and zero-emission sources at the same time – a complex and challenging effort.

As a new and significant source of electricity demand, how data centres interact with energy systems will impact Asia Pacific's decarbonisation pathway. The sector can make a positive contribution to climate and energy objectives and avoid constraining regional progress, if data centre developers, operators and investors take proactive steps now.

Focus on data centre energy use is also rising for other reasons. In the world's leading data centre market, the United States (US), energy has become a major flashpoint. In US states like Virginia.[12] and Oregon, connection and supply shortfalls have become a handbrake slowing data centre development, while concerns about the impact on energy prices and grid decarbonisation are severely challenging social and regulatory licence.

Asia Pacific can capture the data centre opportunity and avoid these pitfalls by getting energy right as the sector scales rapidly. This report explores opportunities to sustainably power the region's projected data centre boom, through proven energy strategies that address the priorities of operators, customers, energy grids, governments and communities together. Its focus is pragmatic: enabling necessary, rapid deployment while supporting well-functioning energy systems and advancing the region's decarbonisation priorities.

To explore these important issues, Deloitte has drawn together multiple layers of market intelligence from five key data centre markets: India, Australia, China, Japan and Southeast Asia. Its insights have been informed by interviews with representatives of data centre sector leaders – including asset owners, operators and component manufacturers – together with expert insights from Deloitte's local sector specialists and landscape scanning on regional energy, regulatory and sustainability trends.

Asia Pacific's data centre opportunity is live and significant. Addressing the equally real challenges this creates will set the sector on sustainable long-term foundations, to unlock its potential and drive digital prosperity.

01
Charging up regional data centre growth

Getty Image:
Computer network connection in Shanghai, China.

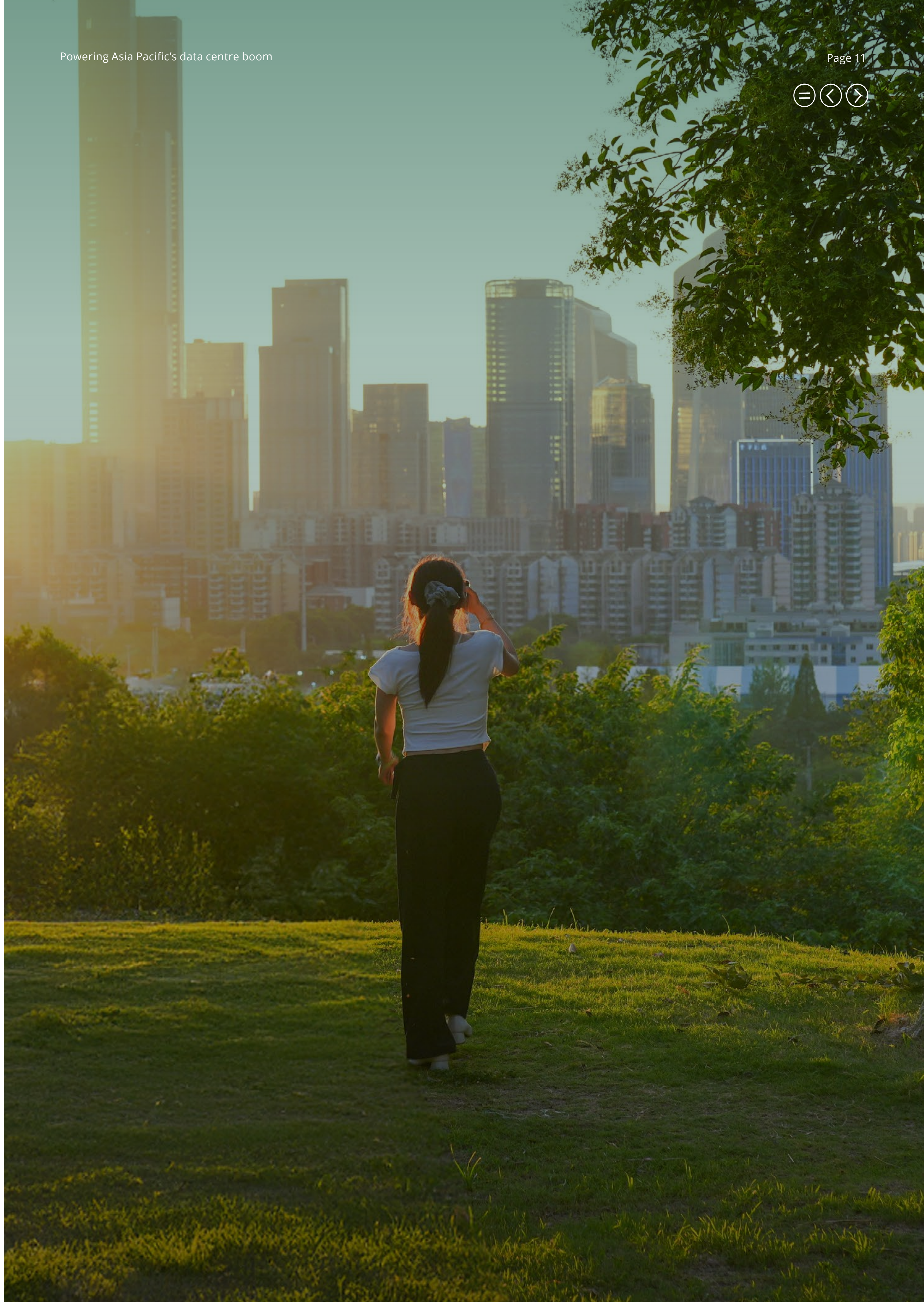
Asia Pacific can be the next global data centre hub

As the pulsing heart of digital economies, data centre demand is rising rapidly worldwide. Asia Pacific is projected to see a particularly strong surge in data centre investment and deployment, reflecting its status as one of the world's fastest growing and most dynamic regions.

Data centres are already big business, with established hubs underpinning digital powerhouse economies like Japan and Singapore. But other data centre markets including Australia, India and Malaysia are attracting new investment and developing rapidly alongside these established players, as the sector scales to meet expected growth in data storage, analytics and processing needs in coming years.

Figure 1: Regional data centre capacity is projected to grow rapidly to 2030

*Source: International Energy Agency (2025).[13] *Projected – represents estimated capacity under IEA 'Base Case' scenario.*

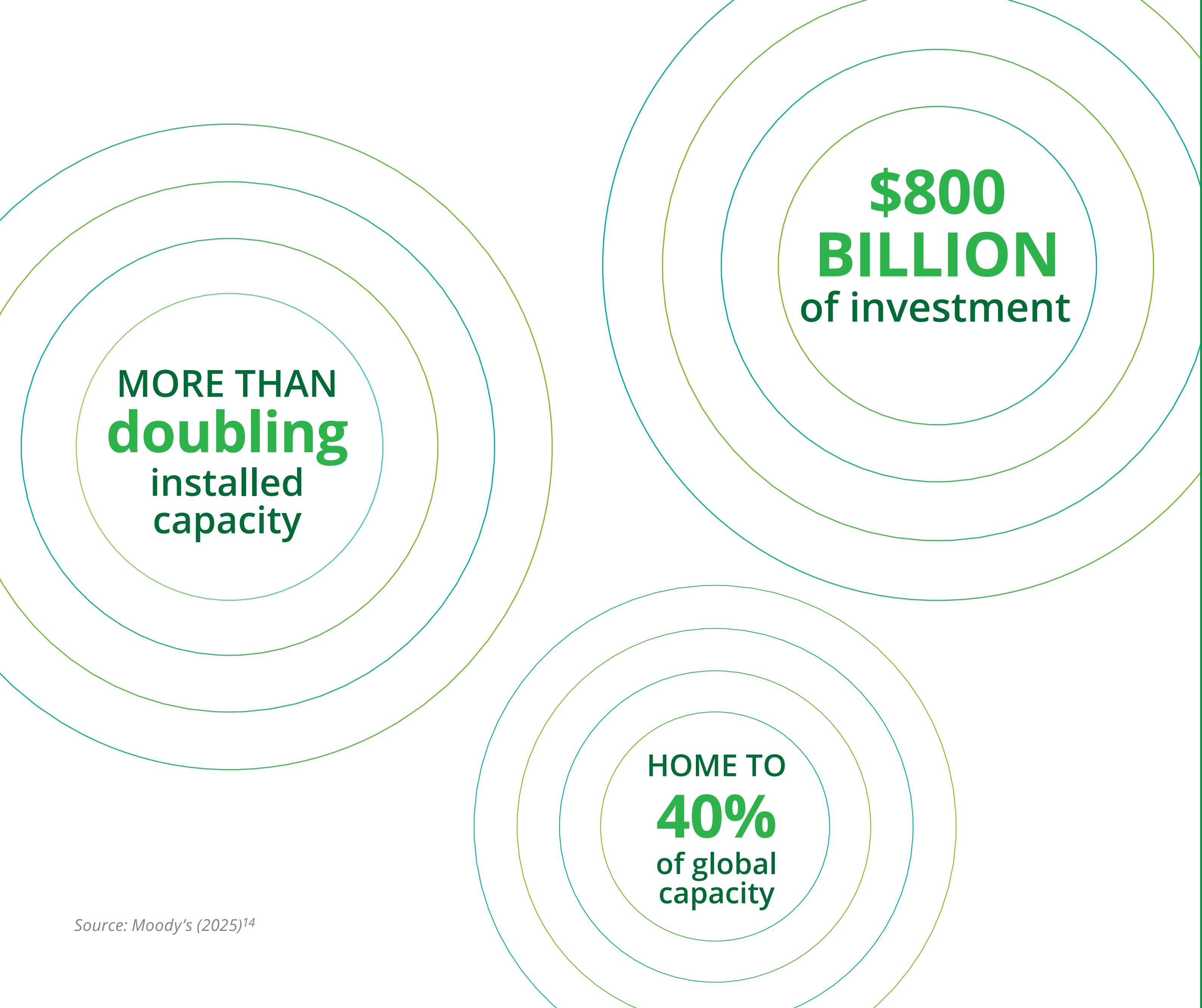


Data centres are an important economic opportunity for Asia Pacific – boosting direct investment in the near term, and underpinning the ongoing development of digital ecosystems that are key to long-term prosperity. Seizing this opportunity will be critical to delivering on the promise of the 'Asian Century' and continuing to raise living standards across the region.

Read more: Southeast Asia's data centres and AI imperative

In this related report from Deloitte's regional technology specialists, we unpack the emerging AI value chain and its three segments – Application, Platform, and Infrastructure – to reveal specific areas Southeast Asia can capitalise on in this once-in-a-generation opportunity.

Figure 2: Asia Pacific is forecast to become a global data centre hub by 2030



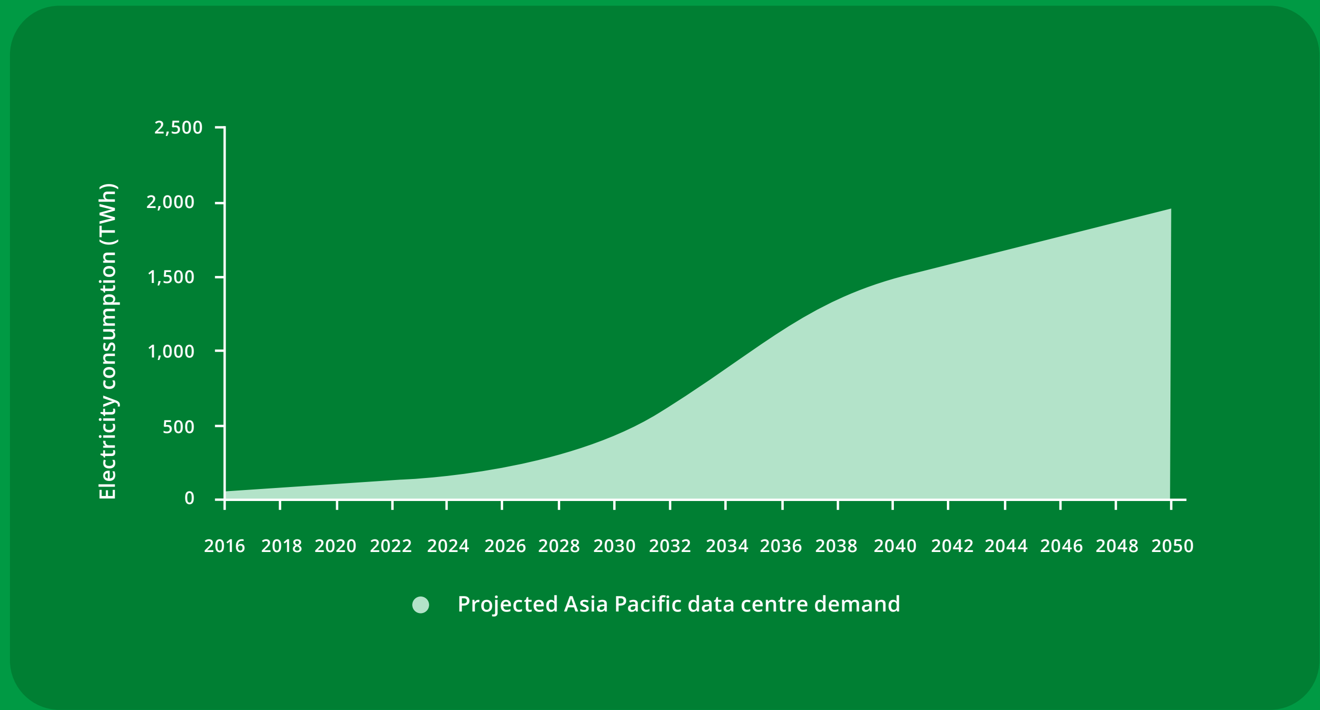
Source: Moody's (2025)[14]

Data centre growth comes at a time of rapid change for regional energy systems

Sourcing the electricity needed to power rapid and significant data centre growth is an urgent challenge for countries across Asia Pacific: the sector's successful expansion depends on it.

From a modest share of regional electricity demand today, Deloitte analysis projects data centres could comprise 2.3% of regional electricity consumption by 2030, the highest share outside of North America.[15] In a scenario with high adoption of digital technologies – including artificial intelligence – electricity consumption from Asia Pacific data centres is projected to rise from under 200 TWh in 2025 to over 1,000 TWh by the mid-2030s (Figure 3).[16]

Figure 3: Energy demand from Asia Pacific data centres is set to soar



Source: *Deloitte Global analysis based on own calculations and IEA. Announced Pledges and Net-Zero Scenarios*

This additional electricity load would be challenging to accommodate in its own right, but new data centres will be plugging into energy systems that are already undergoing significant change and grappling with rising demand (Figure 4).

Decarbonisation efforts are shifting energy load from fossil fuels to electricity grids, at the same time as those grids are increasingly moving from coal and gas generation to zero emissions sources of supply (Figure 5).

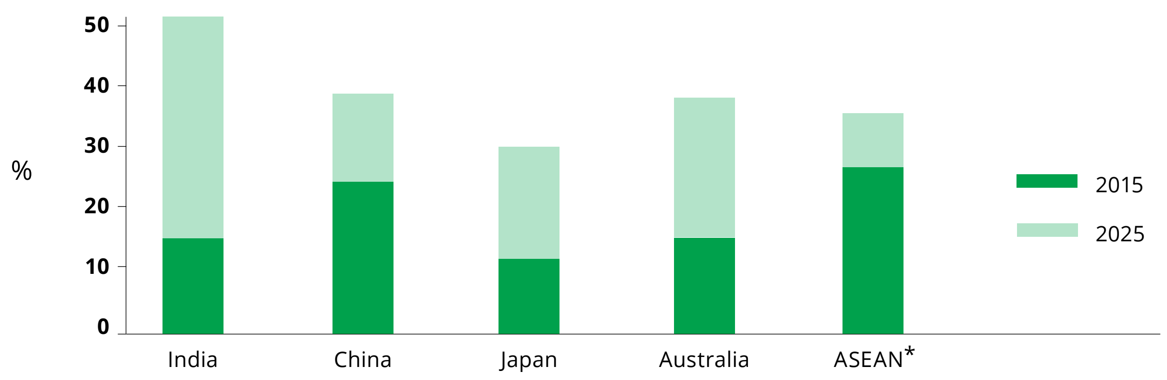
Figure 4: Decarbonisation and economic growth are already increasing Asia Pacific energy demand

	Electricity demand (TWh)			Share of electricity in total final consumption (%)	
Market	2024	2035*	% Growth	2023	2035*
Asia Pacific	14,395	21,222	47	20%	45%
India	1,644	2,959	80		
China	9,102	13,276	46		
Japan	913	978	7		
Southeast Asia	1,317	2,110	60		
Australia[1]	205	300	47	24%	30%

*Sources: International Energy Agency (2025); International Energy Agency (2024) AEMO (2025);[17] DCCEEW (2025).[18] *Projected.*
[1]National Electricity Market only.

Figure 5: The transition to clean energy is well underway in Asia Pacific grids

Electricity system zero-emissions capacity share



Sources: Clean Energy Council (2015);[19] AEMO (2025);[20] Bloomberg (2016);[21] Climate Action Tracker (2025);[22] Institute for Sustainable Energy Policies (2015);[23] Ember (2025);[24] Macrotrends (2021);[25] Indian Ministry of Power (2025)+;[26] Heinrich Boll Stiftung (2017);[27] Australian Department of Foreign Affairs and Trade (2024).[28]

*+Data is for 2014. *Expected.*

Without careful management, rapid and uncoordinated growth in data centre electricity demand risks making energy systems less stable, and even derailing decarbonisation efforts now gaining welcome momentum across the region.

This makes energy a critical area of focus in planning for the sector's successful expansion in Asia Pacific markets over the period to 2030, and beyond.

Not all data centres are energy equals

All data centres need reliable electricity, but their power requirements differ significantly depending on facility type and use case.

CPU data centres are designed to handle general-purpose computing tasks such as web services, databases and business applications, prioritising flexibility and steady performance. GPU data centres, by contrast, are optimised for compute-intensive workloads such as artificial intelligence, machine learning and advanced analytics, requiring far greater power density, cooling capacity and specialised infrastructure to support high-performance processing at scale.

Since the release of mainstream AI tools like ChatGPT in 2022, there has been a strong market focus on the development of 'hyperscale' GPU data centres needed to train Large Language Models (LLMs) and power other AI applications. These facilities are significantly more energy-intensive than other types of data centres, because of the enormous compute power they apply to solve complex problems.

But AI is not the only driver of data centre demand (see Chapter two), and other segments of the market are also slated for growth across Asia Pacific as a result. Upgrading and expanding existing CPU data centres – including enterprise and co-located facilities – is also an important sector priority as facilities deployed during previous waves of digital growth reach end of life.

Fit-for-purpose energy options will look different depending on data centre type, location and the kinds of digital tasks that need to be undertaken. This is an important point to consider when it comes to enabling their growth within transitioning energy systems.

Figure 6: Energy needs of data centres vary by size and type

Hyperscale
- Very large, centralised, and custom-built facilities that are operated by a single company.
- Designed to meet the needs of large cloud or IT service providers such as AWS, Microsoft, Google and Meta.

Colocation
- Multi-tenant facilities where multiple clients lease space. Sub-types include wholesale, retail, managed colocation.

Enterprise
- Privately owned and operated by a single organisation for its own workloads, typically on-premises.
- Varying sizes, often legacy or less optimised to scale.

Edge
- Small, distributed data centres located close to end-users/ devices for ultra-low latency. Can be micro data centres, metro edge or mobile edge.

Water: Another top priority for sustainable data centres

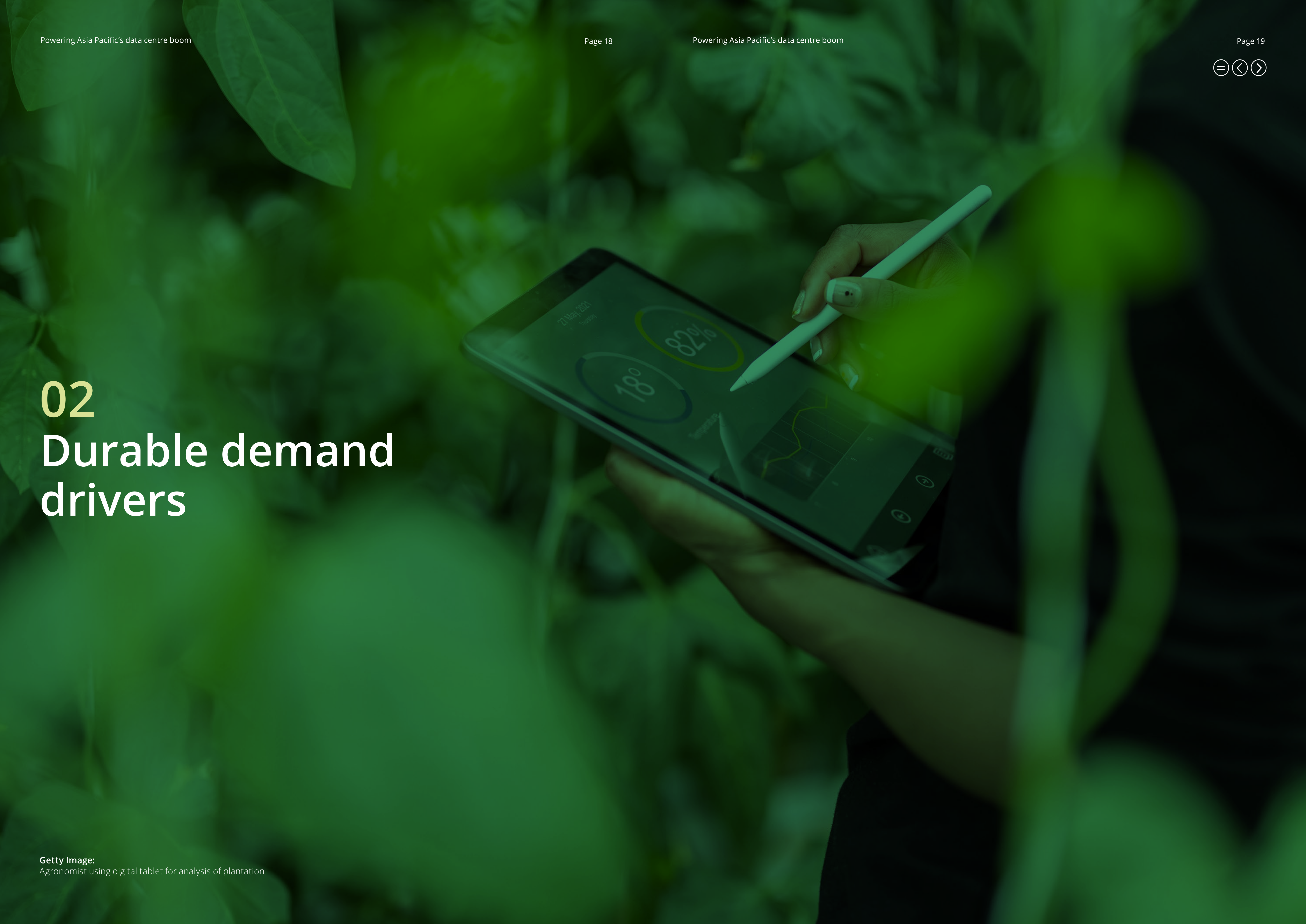
Water use is also an important sustainability issue and constraint for data centres, particularly given rising pressure on water resources in many regions and the sector's current reliance on water-intensive cooling technologies. This report focuses specifically on energy, as the most urgent and material challenge both for enabling rapid data centre deployment and supporting economy-wide decarbonisation. Addressing future electricity demand is the immediate priority for industry, investors and governments.

Deloitte will undertake further analysis on data centre water impacts – including cooling technologies, regional water stress and emerging efficiency solutions – in a forthcoming report.

Model	Electricity load	PUE[2] range	Size vs energy intensity	Primary use cases
Hyperscale	~50 MW to 1 GW	~1.1 – 1.4	Very high energy demand but lower energy intensity per unit of compute due to scale, automation, and advanced cooling	Cloud/ large data/ AI/ big compute
Colocation	~5 to ~50 MW	~1.3 – 1.7	Larger than enterprise sites but less efficient than hyper-scale due to varied tenant equipment and load profiles	Multiple tenants, cloud clients, storage providers
Enterprise	<1 to ~10 MW	~1.6 – 1.8	Lower total energy use but higher energy intensity due to older equipment and less optimised cooling	Business / organisation internal apps, legacy
Edge	~0.1 to ~5 MW	~1.5 – 2.0+	Low total energy use per site but higher relative energy intensity due to small scale, limited cooling options, and high redundancy	Low latency; IoT; remote sites

Source: Deloitte analysis

[2] The closer PUE is to 1, the more energy efficient a data centre is.



02
Durable demand drivers

Getty Image:
Agronomist using digital tablet for analysis of plantation

AI is just one of five key drivers of Asia Pacific's data centre demand

Long before the spectacular launch of mainstream AI tools, data centres were quietly humming in the background of daily life: powering business, digital services, telecommunications and much more.

As economies across Asia Pacific continue to grow and develop, AI is just one of five significant trends shaping projections for strong data centre demand. This highlights the importance of setting sustainable foundations for the sector's growth in the region, regardless of the adoption pathway for AI tools and services.

Figure 7: Data centre demand growth in key Asia Pacific markets has diverse drivers

	Localisation	Connectivity	IoT	Cloud	AI
India	✓	✓	✓	✓	✓
Australia	✓		✓	✓	✓
China	✓	✓	✓	✓	✓
Japan			✓	✓	✓
South Asia	✓	✓	✓	✓	✓
Southeast Asia		✓	✓	✓	✓

Demand driver #1: Data localisation and sovereignty

In a volatile geostrategic environment, governments are increasingly focused on ensuring sensitive data is securely stored and processed within national borders – a trend known as data localisation. Data sovereignty is a parallel priority, which aims to ensure data is fully controlled by a country's own laws, and cannot be exploited by governments or companies in other jurisdictions.

Sector leaders highlighted these interconnected trends as an important driver of data centre demand growth, creating new appetite for domestic hosting solutions across Asia Pacific.

In recent years, key regional governments have introduced legislative, regulatory or market-based frameworks formalising data localisation and sovereignty requirements.

The Indian Government has been progressing a overhaul of the nation's data privacy laws, underpinned by the 2023 Digital Personal Data Protection Act and a set of associated rules released in 2025. This law has established a consent-based approach to the collection and use of data, and gives government the power to restrict data exports to specific countries not deemed to have sufficient security standards.[29] Australia has opted for a narrower and market-led approach, setting localisation and sovereignty requirements specifically for government data – implemented through its Hosting Certification Framework and public procurement standards.[30] Other governments such as Japan currently also favour this standards-led approach.[31]

With 'de-globalisation' a rising trend, this focus on data localisation and sovereignty looks set to expand across Asia Pacific, driving increased demand for domestic hosting capacity.

Demand driver #2: Expansion of digital connectivity to unserved communities

Economic development is continuing to lift communities into the middle class across Asia Pacific and bringing internet and mobile connectivity to more locations. In some of the region's largest markets, this is an important driver of ongoing demand growth for data centre infrastructure.

Almost 90 million new users gained access to the internet in 2024 across India, China and Indonesia alone. Every new connection enables increased uptake of digital services like banking, commerce, videoconferencing and media streaming – all of which add to data centre loads.

Even with this impressive growth, a significant share of the population in each of these countries remains unserved (Figure 8). These countries, and others in Southeast Asia, have a considerable way to go to achieve the near-total digital connectivity already seen in Australia, Japan and Singapore. As governments continue to expand this essential 21st-century infrastructure to unserved or poorly-served regions, further data centre capacity will be needed to enable communities to make the most of it.

Figure 8: Digital connectivity continues to grow rapidly in some Asia Pacific markets

Country	New internet users (2024)[32]	Annual growth in total user base (2024)	Estimated remaining unserved population[33]
India	49m	5.5%	14%
Indonesia	17m	7.9%	10%

Source: DATAREPORTAL (2025)

Demand driver #3: The 'Internet of Things'

The 'Internet of Things' (IoT) has turned our world into an intricate web of sensing devices. From smartwatches to home appliances, vehicles to equipment; Wi-Fi and 5G-enabled devices now generate a continuous stream of data to be monitored, analysed and stored.

Asia Pacific is the fastest-growing region for deployment of IoT devices, with the number of digital devices projected to grow from 14.5 billion in 2022 to 38.9 billion by 2030.[34]

IoT uptake across the region has diverse drivers. In Japan, this is particularly led by industry and manufacturing, as it leads the way on smart factories, robotic production and – increasingly – AI-enabled innovation.[35]

Singapore is a global pioneer on the development of smart city infrastructure, where remote IoT devices networked to local and regional government systems help optimise daily essentials like public transport and traffic, water and waste management, and pollution monitoring.[36]

Internet-enabled products like fridges, air conditioners and electric vehicles are already popular with Australian consumers. By 2029, two in three middle-class consumers globally are projected to live in Asia Pacific, growing these household markets further.[37] Taken together, the continued growth of IoT devices across commercial, municipal and consumer uses will drive additional data centre demand.

Demand driver #4: Enterprise cloud for digital modernisation and service delivery

Sector leaders observed that businesses and industries across Asia Pacific are continuing to migrate to the cloud, digitalise existing operations and grow new digital services at a rapid rate.

This is prompting companies to seek enterprise cloud solutions which are tailored to their specific needs, often with requirements for round-the-clock uptime and fast processing.

This shift has been underway for some time, but factors shaping the current wave include:

- The rise in remote working – particularly in Australia, where one in three people now regularly work from home;
- Digitalisation of widely-consumed services like healthcare and education – which is playing an important role in expanding access in markets like India and parts of the Southeast Asia;
- Increased awareness of cyber threats – prompting companies in all markets to move to enterprise cloud systems which can offer strong, multilayer security.

Enterprise cloud solutions will eventually become the norm, as services and businesses are increasingly designed to be 'digital first'. But there is still a significant adoption curve ahead – particularly for the region's many small and medium enterprises – which will accelerate demand growth for data processing and storage.

Demand driver #5: Artificial intelligence training, infrastructure and applications

The rise of AI and expectation of its rapid adoption in most areas of daily life is clearly driving significant interest in Asia Pacific's data centre sector today.

While the previous four trends are expected to be robust and durable drivers of sector growth, leaders in all markets pointed to AI as the immediate catalyst for new investment – particularly in hyperscale data centres.

This perspective is reinforced by the spate of very large investment commitments and partnerships announced across the region in the past two years. For example, in October 2025 Google announced the development of a US$15b AI data hub in Andhra Pradesh, India, set to deliver "gigawatt scale compute capacity" enabling large companies and start-ups to build new AI solutions.[38]

This was followed by separate announcements from Microsoft and AWS in December 2025, pledging a total of US$52.5 billion in AI investments across India.[39]

After the Malaysian Government announced its intention to become a leading AI nation by 2030, the global chip-maker NVIDIA and power utility YTL signed a partnership valued at US$4.3b to build up to 500MW of AI data centre capacity in the growing regional hub of Johor.[40] NVIDIA is also expanding its regional footprint through a partnership with NextDC and AI startup Firmus Technologies to build 'AI factories' in most Australian capital cities. The first stage of this deal is worth US$2.9 billion, and it could ultimately catalyse as much as US$48 billion of investment.[41]

These and other mammoth commitments from the world's largest technology firms are a welcome sign of confidence in Asia Pacific's economic outlook, and will help cement its status as a global innovation hub. While the deployment trajectory for AI is still coming into focus in each of the markets analysed for this report, data centre infrastructure is an essential enabler for scaling this technology to its full potential.

Together, these diverse drivers of data centre growth underline both the scale of the opportunity, and the importance of addressing the very real challenge this is set to create: powering rapid data centre growth reliably, cleanly and affordably.

Silicon to Service (S2S): Delivering end-to-end AI solutions for any data centre and energy configuration

Deloitte's Silicon to Service (S2S) initiative is an end-to-end AI solution market offering to bridge the gap between client use case conception and the NVIDIA GPUs that can power their AI solutions. S2S provides a fully integrated, ready-to-use solution that accelerates exploration, experimentation, and execution to forge a clear path to operational excellence, from concept to deployment. Organisations can choose to deploy AI workloads across on-premises, cloud and hybrid hosting alternatives leveraging comprehensive, proven AI architecture blueprints successfully built, tested and operationalised. This offering includes tools and accelerators – such as agentic demand estimators, hybrid AI total cost of operations calculators and GPU sizing utilities co developed with NVIDIA – to estimate compute demand and total cost of ownership quickly and accurately. Deloitte's specialists can also create digital twins on NVIDIA Omniverse to simulate power loads and identify opportunities to make data centre power use more efficient.

S2S addresses common enterprise challenges around complex AI stacks, model lifecycle, data ingestion and platform integration by providing hardware, software, orchestration and machine learning operations capabilities in a configurable storefront. This helps clients rapidly shift from experimentation to scale while balancing performance, cost, control and data sovereignty.

Explore more here: Silicon to Service

Read more: Powering artificial intelligence

Deloitte's energy, tech and sustainability specialists have been leading the global conversation about AI, energy and data centres. Our 2024 report *Powering artificial intelligence* provides original analysis and modelling on projected AI energy needs, and focuses on potential ways to achieve 'Green AI' in the coming decades.

03
Challenges to scale

Getty Image:
Environmental technology concept. Sustainable development goals

Sector growth and decarbonisation goals are both at risk unless data centres get energy right

The rapid growth in data centre energy demand is increasingly straining Asia Pacific's ability to balance economic development with its decarbonisation targets.

Getting energy right will be crucial to enable sector growth while meeting the needs of other energy users and maintaining a clear trajectory to net-zero emissions. This makes energy sourcing a core business strategy question for data centre operators and investors.

Sector leaders see energy challenges ahead

In interviews for this report, data centre sector leaders and market observers identified two distinct categories of risk connected to energy.

The first encompasses direct business risks – those impacting the sector's capacity to scale with financially sustainable business models.

The second category of risk focusses outwards, reflecting a growing public conversation about the potential economic and environmental impacts of data centres.

Direct risks for data centre operators

Delays to deployment

The most immediate concern for data centre developers is the availability of sufficient energy supply to power up new data centres in the near-term.

In the past, facilities could connect relatively quickly and easily to local grids across the region. But connection delays are now common in all markets examined for this report, as governments and system operators grapple with spiking electricity demand.

Forward projections for data centre power needs are sometimes well outpacing plans to augment local grids. For example, in mid-2025 the estimated pipeline of data centre projects in Tokyo was more than double the planned expansion of electricity supply to 2030.[42]

The IEA has estimated that globally, up to 20% of data centre projects planned to 2030 are at risk of delay due to grid access issues.[43] Without access to sufficient, reliable electricity, data centres simply will not be able to scale at the sector's desired pace.

High and volatile energy pricing

As one of the largest operating expenses, the price of energy is critical to the data centre business model. Sector leaders voiced concern about high and volatile energy prices seen in most markets in recent years, and the potential for prices to remain elevated in coming years due to constrained supply.

Some data centre operators are currently relying on short-term energy contracts to secure necessary supply for their near-term expansion plans. This can leave businesses exposed to future energy price risks, and make it challenging for investors to assess the long-term financial viability of individual projects or companies.

Data centres with a sophisticated energy sourcing strategy can reduce this price risk, supporting engagement with investors and differentiation in market.

Evolving regulatory standards

Governments and regulators are progressively tightening sustainability requirements for data centres. For example, Asia Pacific markets including Singapore and Australia have set energy efficiency requirements which push some new facilities to meet a Power Usage Effectiveness standard of ≤1.3 to ≤1.4.[44]

Globally, there is a move towards reporting on a holistic set of sustainability indicators. As of 2024, the European Union requires annual reporting on data centre: energy consumption, power use, temperature set points, waste heat use, water consumption and use of zero-emissions energy.[45]

Sector leaders welcomed this focus and accountability on sustainability issues, but acknowledged regulatory change can create business risk if operators are not ready or able to comply with evolving requirements. Anticipating future standards in planning for sector growth is an important way to address this risk.

Broader risks for energy systems and users

Constrained capacity, reduced reliability

Electrification is the primary mechanism available now to reduce emissions across industry, transport and buildings. Electricity demand in Asia Pacific is projected to rise almost 50% between 2024 and 2035 as households and businesses switch from liquid fossil fuels to electrons, and economies continue to grow.[46] Governments across the region are scrambling to augment the energy generation, transmission and distribution infrastructure necessary to enable this.

Current electricity demand projections already factor in some expected growth in data centres. However, there is material uncertainty about how much new capacity will ultimately be needed and brought online because of the demand drivers discussed in Chapter two. A spate of very large investment announcements at the end of 2025 in markets like India (see p.23) also highlights that the forward pipeline is changing rapidly.

Uncoordinated or poorly-planned data centre deployment risks exacerbating potential energy supply challenges in the coming decade, impacting grid reliability and access for other parts of the economy. This can have significant flow-on impacts if sectors such as industry and manufacturing are affected.

Energy price pressures

Constrained energy supply typically results in higher prices, alongside reliability risks. Affordable energy is essential for industrial firms in sectors like metals, minerals, cement and chemicals – all significant employers and drivers of economic activity across Asia Pacific. Just as the data centre sector business model is at risk without access to affordable and reliable energy, so too is the ongoing survival of energy-intensive industrial firms which have limited capacity to absorb significant price rises.

Energy prices are also an important source of cost of living pressure for households and small businesses across the region, particularly in the wake of the inflationary pressures of 2022-2025. Data centre growth therefore needs to be managed in ways that avoid triggering higher power prices for other energy users.

Delayed coal closure

The transition from coal-fired power generation to low- and zero-emissions sources is well underway and gaining momentum in most markets across Asia Pacific (see p.14). But fossil fuel plants can only close when sufficient alternative supply is in line to replace them. Significant additional energy loads could mean these assets need to stay in service for longer, running alongside new zero-emissions energy capacity instead of being replaced by it.

Prolonging the life of emissions-intensive generators anywhere is counter to efforts to limit climate warming everywhere. It also contradicts regional policy targets designed to provide clear investment signals for zero emissions energy deployment – such as Australia's 82% renewable electricity target for 2030, and Japan's target of 36 to 38% renewable electricity by the same year. But if additional energy demand exceeds what planned new capacity can meet, governments risk being left with little alternative than keeping polluting sources of energy operating for longer.

These risks are now being flagged frequently and consistently across Asia Pacific markets, and should be taken seriously. As data centres seek to scale rapidly, firms can look to energy solutions which support sector growth and sustainability priorities together. This will position data centres to offer reliable, price-competitive and low carbon data services – key foundations for a strong market position today.

04
Clean energy is a smart solution

Getty Image:
In front of solar panels, a female engineer wearing safety gear is carrying a computer tablet.

Powering Asia Pacific's data centre boom

Fast and sustainable opportunities to power Asia Pacific's data centre boom

Data centres can meet their own growing power needs and contribute to the delivery of bigger, cleaner grids with energy strategies that leverage renewable sources like solar and wind, backed by storage and firming. Doing so will enable sustainable growth, shifting the sector from a potential drag on decarbonisation to an accelerator of it.

Prioritising clean energy can see data centres make a positive contribution to the region's power grids while meeting commercial priorities because it now has three advantages over other energy sources in the market.

Fastest to deploy

Clean energy projects can be materially faster to develop than conventional fuel alternatives. In North America, data centre growth forecasts have prompted companies to pursue new closed-cycle gas generation and explore conventional nuclear or small modular reactors (SMRs) to meet anticipated energy needs. But order bottlenecks are now pushing delivery timeframes for new gas plants out to five years or more.[47] For example, in early 2025 the US utility Dominion Energy announced plans to deliver a new 1GW gas plant in Virginia to support surging data centre electricity demand growth in the state. This facility is not slated to come online until late 2029, despite being planned for an existing power station site and not requiring any new pipelines or transmission infrastructure.[48]

Nuclear projects consistently take at least a decade to deliver - and sometimes significantly longer.[49] For example, in March 2025 India's Rajasthan Atomic Power Station connected its latest 700MW generating unit to the grid; this project had commenced construction in 2011.[50]

By contrast, there are examples of utility-scale photovoltaic (PV) projects being planned and delivered within just 12 months in Japan,[51] and 22 months in Malaysia.[52]

Even in Australia, where the pace of clean energy deployment still needs to accelerate to meet national energy targets, the median project lead time for utility-scale solar PV is 44 months.[53]

Investing in clean energy and storage that adds to total supply can get data centre projects powered up sooner than conventional energy alternatives available today.

This is an advantage when speed is of the essence to service growing demand from digital partners and customers.

Lowest cost new capacity

The price of clean energy components has fallen significantly in recent years, as major manufacturers – have expanded production capacity. Utility-scale solar is now assessed to be the lowest cost type of new generation capacity to build, with an average Levelised Cost of Energy (LCOE) below that of all other grid-scale energy supply options in Asia Pacific (Figure 9). The combined cost of solar and storage - to supply power outside of daytime generation windows - is also below that of closed cycle gas.[54] Battery prices have declined rapidly in recent years as manufacturing has ramped up. In 2024 battery prices dropped below US$100 per kilowatt hour – considered to be a key cost threshold for competitiveness – and are projected to fall further in coming years.[55]

Utility-scale onshore wind and storage is also approaching cost competitiveness with gas, although there is considerable variation across Asia Pacific markets depending on local sector capability and market maturity.[56]

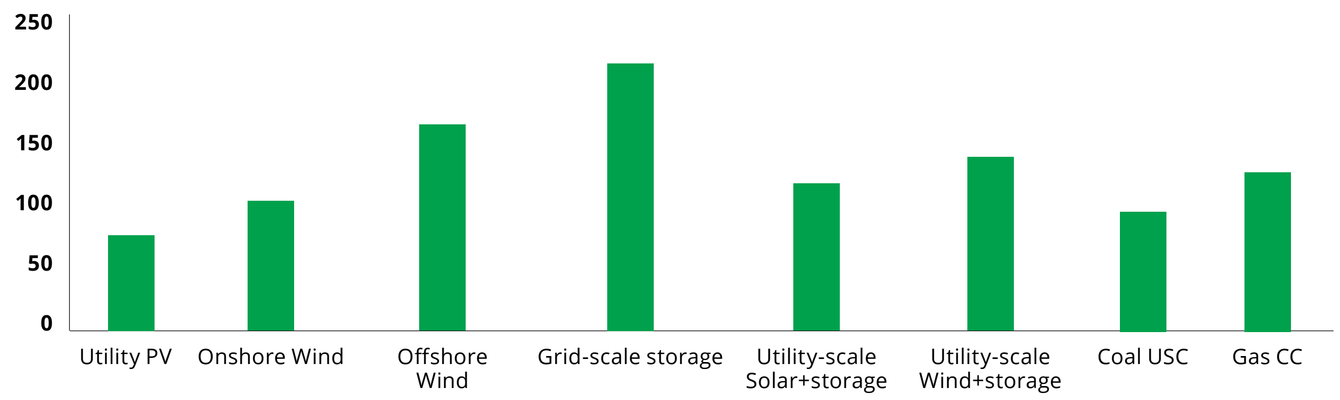
Ultra-supercritical coal (USC) power plants remain the lowest cost type of dispatchable generation capacity to build, though the advent of carbon pricing in major markets is significantly altering the economics of their ongoing operation. Deploying new coal generators to power data centres would directly impact regional decarbonisation efforts.

Carbon emissions from coal USC plants can be 15-30% lower than older coal technologies;[57] this means they are still considerably higher than wind, solar and other zero-emissions energy sources. Operators and customers of coal USC plants would also remain exposed to the risk of future price shocks for coal as an input fuel – as seen in 2021 and 2022 when geopolitical events drove prices to record highs above USD$400 per tonne.[58]

The total cost of building and operating each type of electricity generation differs across Asia Pacific markets because of local factors including market and grid capacity, domestic fuel production capacity and fuel import costs.

However, the regional and global trends are clear: delivery costs for new clean energy projects continue to decline, and wind and solar generation can offer significant operational cost savings compared with facilities powered by conventional fuels.

Figure 9: Asia Pacific average levelised cost of energy for new capacity 2024 (US$/MWh)



Source: Wood Mackenzie (2024)

As another zero-emissions energy source, nuclear technologies may play a role in the longer-term delivery of decarbonised grids and sector energy demand (see box overleaf). Nuclear deployment costs vary significantly around the world based on industry maturity and size of the existing fleet in different locations - ranging from around US$75/MWh in China to US$170/MWh in the European Union. But for data centres seeking rapid access to the lowest-cost electricity in the near term, renewables are shaping up as a preferable option on price as well as speed.[59]

Nuclear energy options warrant watching but not waiting

Nuclear energy is a zero-emissions power source and plays an important role in the energy mix of countries that already operate nuclear plants or are well advanced in developing new capacity. Achieving global net-zero will require a diversified portfolio of clean energy technologies, and nuclear will continue to be part of that mix within Asia Pacific.

However, the critical time horizon for meeting rapidly expanding data centre demand is the next decade. Within this period, nuclear is unlikely to offer a practical large-scale supply solution. Conventional nuclear reactors typically require more than 10 years to plan, license, finance and construct. Small Modular Reactors (SMRs), while promising in theory, have not yet reached commercial deployment and therefore cannot be relied on to deliver timely, scalable supply for near-term data centre needs.

Cost is also a material factor. Nuclear remains significantly more expensive to deploy than renewable alternatives, with higher upfront capital costs and longer payback periods.[60] Unless there are transformative advances in construction timelines or cost reduction, nuclear will not be the most competitive pathway for meeting new electricity demand within the next decade.

These developments nevertheless warrant monitoring. Investors can continue to support R&D to progress SMRs toward commercial readiness, and governments can ensure neutral regulatory settings so that markets can choose to pursue nuclear if this is considered suitable and economic.

For data centre operators prioritising speed-to-market, the most viable near-term options remain rapidly deployable solar PV and wind, supported by storage and firming capacity.

Aligns with market expectations

In interviews for this report, data centre operators highlighted evolving customer sustainability expectations, noting major global and regional firms are now seeking partners who can help them meet strong operational targets for zero-emissions energy. For example, more than 400 of the world's major global firms have committed to source 100% renewable electricity over timeframes spanning the next 5 to 15 years.[61] This includes major technology firms like Apple, Google and Meta that have already achieved this milestone for current operations, and now need to maintain it as they invest heavily in AI and hyperscale data centres.

Feedback on the commercial impact of this differs across Asia Pacific markets. In the most developed economies, such as Japan and Australia, being able to demonstrate that data centre energy supply comes from clean sources was cited as the 'table stakes' or baseline expectation for doing business with major corporates. In other markets such as India, sector leaders indicated it is seen as a source of competitive advantage, allowing data centre businesses to attract larger clients or charge a green premium. No matter where individual countries in the region sit on the spectrum between these viewpoints, sector leaders reflected a widely shared view that clients increasingly expect and prioritise clean energy when choosing a data centre provider.

The progressive rollout of mandatory sustainability reporting in markets across Asia Pacific is expected to drive further focus on company strategies for reducing emissions and addressing broader environmental impacts. Energy sourcing is among the 'low hanging fruit' available to companies to improve sustainability metrics, increasing customer and investor preference for clean energy across supply chains.

These commercial benefits make clean energy a smart solution for data centre operators, alongside the benefits for communities and emissions reduction. It is important to acknowledge that energy sources like solar and wind also present challenges for powering data centre operations – particularly securing reliable, round the clock supply from intermittent sources. The following chapter explores energy sourcing strategies being adopted by market leaders across Asia Pacific to make the most of the opportunities of clean energy, while strategically managing these challenges.

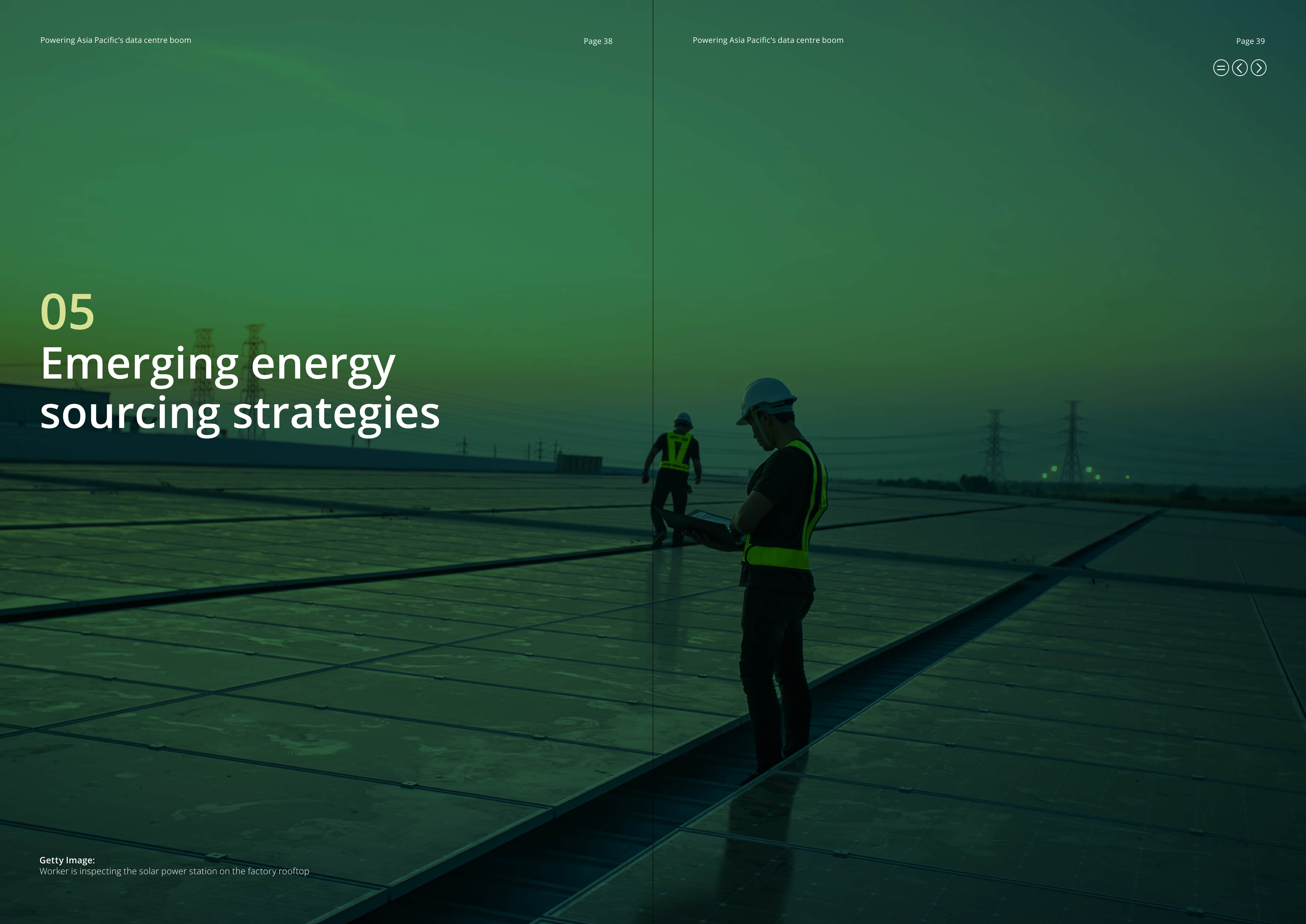
Scaling data centre infrastructure needs to be complemented with appropriate power sector policies and regulations that effectively mitigate the following challenges:

Rising peak demand concentration: Clustering of data centres in a few major hubs will drive sharp increases in local peak load, putting pressure on local grid infrastructure and increasing the risk of supply constraints during high-demand periods.

Difficulty in securing 24/7 clean power: While operators have ambitious renewable targets, power systems in the region remain primarily reliant on fossil generation

Transmission and infrastructure constraint: Inadequate evacuation and transmission infrastructure to transmit power from renewable-rich regions to data centre hubs may hinder data centre growth in specific regions.

Policy fragmentation and regulatory uncertainty: Differences in renewable energy regulations and charges across state jurisdictions create uncertainty in landed power costs and make it harder to structure predictable, long-term clean power portfolios.



05
Emerging energy sourcing strategies

Getty Image:
Worker is inspecting the solar power station on the factory rooftop

Powering Asia Pacific's data centre boom

Sector leaders are lighting the way with powerful data centre solutions

Deloitte's market intelligence indicates sector leaders are pursuing diverse approaches to sourcing clean energy. This is an area of rapid change and progressive innovation as improvements in technology, reductions in cost and the region's accelerating energy transition open new possibilities.

Exploring clean energy sourcing strategies highlights that each has strengths and challenges, with the right approach being determined by a range of project- and market-specific factors. But taken together, these approaches demonstrate clean energy can get the job done to power Asia Pacific's forthcoming data centre growth.

Clean energy sourcing models across Asia Pacific

Sector leaders highlighted an emerging gap between the sourcing strategies of top tier technology firms in Asia Pacific – who are strongly prioritising clean energy; and those of the broader data centre sector – where sustainability concerns are still an emerging focus.

Innovations and options tested by early movers now need to become business as usual as the data centre sector undergoes the coming wave of growth.

The energy sourcing models discussed here, and their strengths and challenges, are synthesised from insights shared by major data centre operators and subject matter experts interviewed for this report. They provide a starting point for selecting fit-for-purpose strategies to incorporate clean energy into new data centre projects currently in the development pipeline. They also illustrate what leading practice in clean energy sourcing looks like today, for data centre customers seeking to align procurement with sustainability commitments and priorities.

Onsite renewable generation and storage

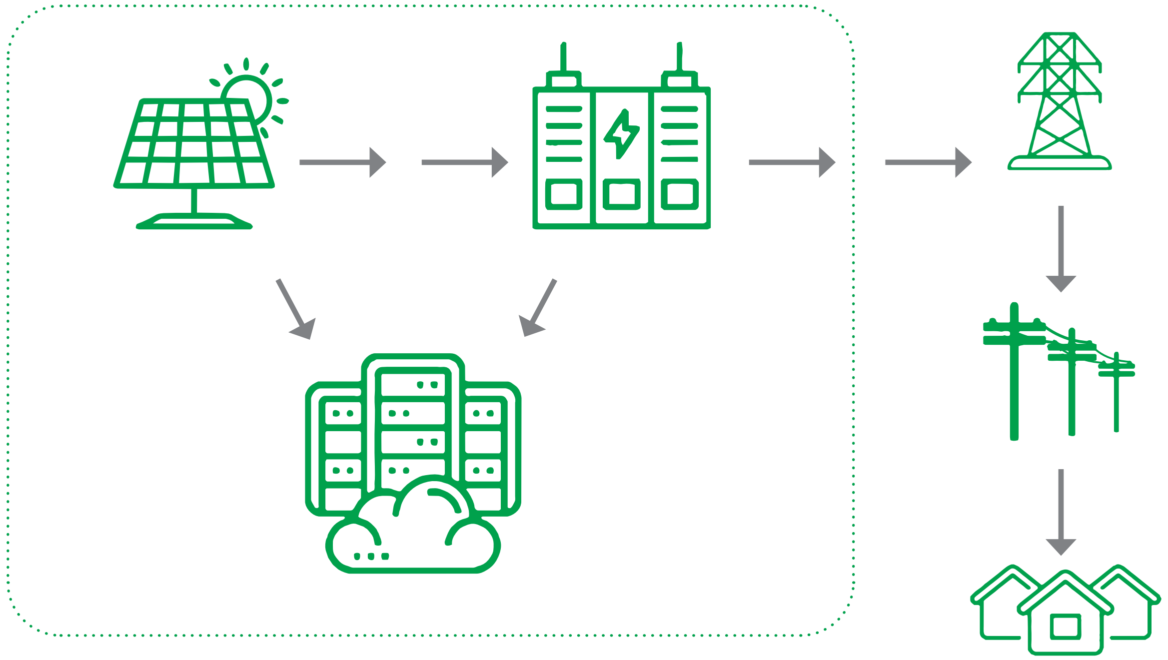
Powering data centres with onsite solar or wind generation, backed by battery storage and backup grid connectivity, can be a direct and efficient sourcing strategy for projects looking to deploy quickly.

Generation and storage capacity can be sized to data centre energy needs alone; alternatively, installed generation and storage can be 'oversized' to enable excess power to be sold into the grid as part of a data centre's total revenue stack. In either case, the resulting clean – and in the case of batteries, dispatchable – electricity supply is additional to existing grid capacity, helping address supply constraints and system security.

This solution requires space within the data centre boundary for siting generation and storage equipment, which can have a significant footprint depending on necessary capacity. For this reason, onsite generation and storage can be particularly well-suited to powering edge data centres which have lower energy needs than hyperscale or co-located facilities, and are often in locations where land is more available.

Onsite energy generation and storage can also be an important form of resilience in a changing climate, as this supply is less vulnerable to grid disruptions caused by extreme weather events, which are becoming more frequent and severe.

Figure 10: Onsite renewable generation and storage provides direct clean energy supply



Onsite generation and storage powers the data centre first

Any remaining electricity can be shared into the grid

Solution strengths	Challenges for consideration
Quick to build and connect: Addresses current delays in availability of power supply and/or grid connection capacity.	Round-the-clock reliability: For failsafe energy supply in all seasons and weather conditions and to support contingency requirements, data centres may still need backup connectivity to main power grids.
Scalable with data centre growth: Data centre operators can build and pay only for what they need and progressively add more capacity over time.	Land capacity: Requires availability of suitable owned or long-term leased land within the data centre campus footprint.
Full control, transparency and traceability: Easy to demonstrate to customers, community and markets how sustainability outcomes are being achieved for corporate reporting.	Energy storage costs: Battery costs are still on a downwards curve relative to the cost of renewable generation, and are expected to fall further in future years.

Onsite generation will not be a viable option for all data centre projects – particularly large facilities with significant electricity needs, and those required to be deployed in land-constrained areas. In these instances, contracting directly or indirectly to purchase renewable electricity is an alternative which can deliver benefits for data centres and the grid alike.

Grid utility green power offerings

'Green tariff' offerings via established utility providers have been favoured by data centre operators to meet early sustainability commitments, because of their convenience and simplicity.

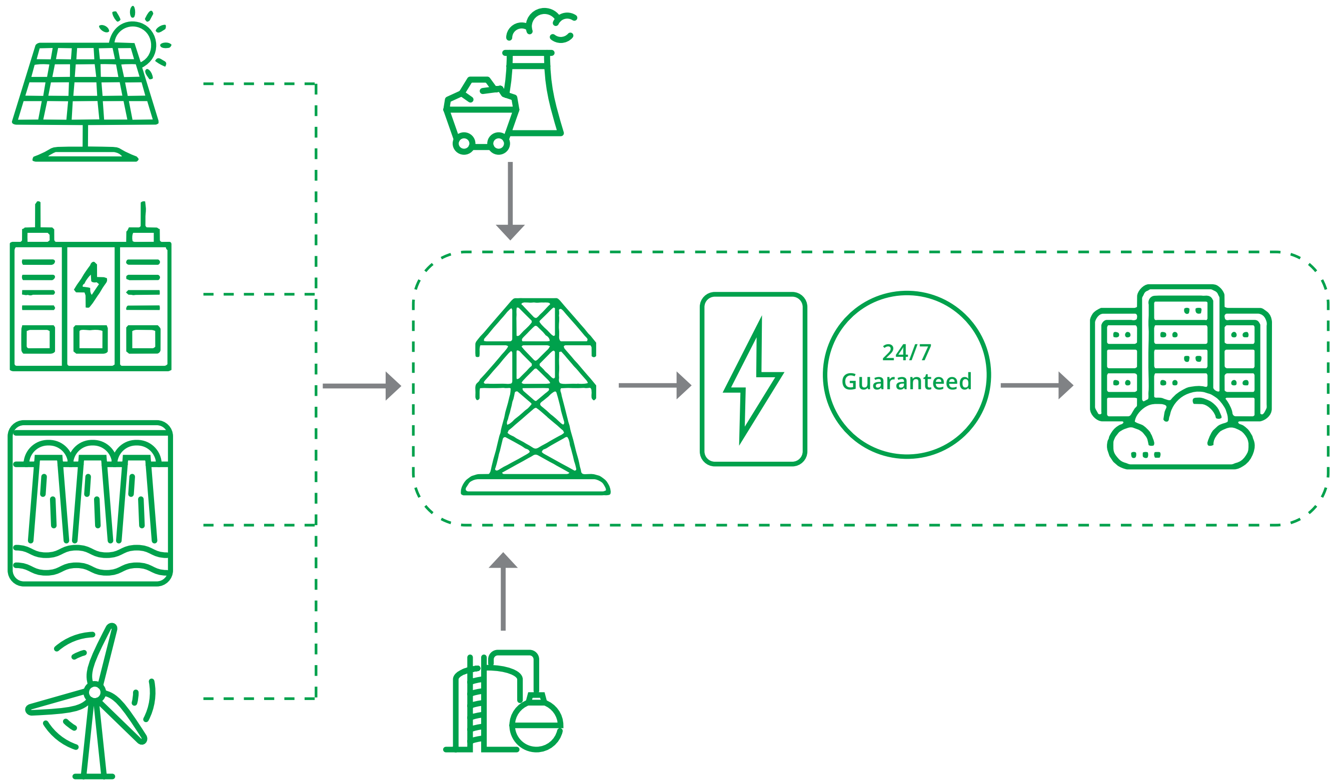
In this model, data centres contract with local utilities or electricity retailers to purchase electricity from the grid – often at a small premium to conventional energy prices.

The utility provider issues certificates created from clean energy projects in its overall capacity mix, certifying the data centre's contracted volumes have been offset from clean sources.

These offerings are generally underpinned by government mechanisms, such as Australia's Large-Scale Generation Certificates and Japan's Feed-In Tariff scheme.

By sourcing electricity through utility green power offerings, data centre operators avoid the need to directly manage sourcing and supply risks, and are guaranteed round-the-clock supply via the grid. But sector specialists interviewed for this report highlighted that challenges are rising with this approach, as power systems struggle to keep up with rapid growth in data centre demand in most countries across the region. Going forward, data centre operators considering grid utility green power options need to closely examine whether and how these arrangements support additionality in energy supply.

Figure 11: Green power can be purchased as a packaged utility solution



Grid utilities provide a packaged green power product, offsetting data centre energy volumes through clean generation certificates produced within their overall capacity mix

Solution in action: Yotta utility partnership

Yotta Data Services is a prominent Indian data centre provider, operating the country's single largest facility – the 820,000 square foot NM1 data centre near Mumbai. As of 2025, this facility operates on 80% clean energy, while the company's other major data centre complex – D1 in Noida – is fully powered by zero-emissions sources.[62]

A key element of Yotta's energy approach is green tariff arrangements through TUCO, a power utility wholly owned by Yotta's parent company, Hiranandani Group.[63] TUCO sources clean energy generation from diverse sources including hydro and biogas, and provides Yotta with a packaged energy product which supports the company's sustainability goals.

Solution strengths	Challenges for consideration
Simple and convenient: Data centre operators can sign a single electricity contract with well-established commercial terms and parameters.	Limited grid capacity: Data centres will be competing with other energy users for access to utility supply, potentially limiting availability and/or increasing cost.
Rapidly scalable: In the recent past, data centre operators have been able to rapidly scale up contracted supply volumes from large utility providers. However, this is expected to change due to emerging grid capacity constraints.	Reduced traceability and verification: Compared with direct sourcing of renewables, certificate- or offset-based energy sourcing is increasingly considered less robust in the context of corporate ESG reporting.
Low risk: The utility provider is responsible for ensuring adequate energy supply around the clock.	Requires enabling certification frameworks: Renewable energy certificate schemes give confidence that green tariff offerings are genuinely backed by clean generation; the availability and robustness of these schemes vary across Asia Pacific markets.

Clean energy power purchase agreements

A power purchase agreement (PPA) is a contract to purchase electricity at a fixed price, for a set duration between two parties, usually bypassing a utility or retailer.

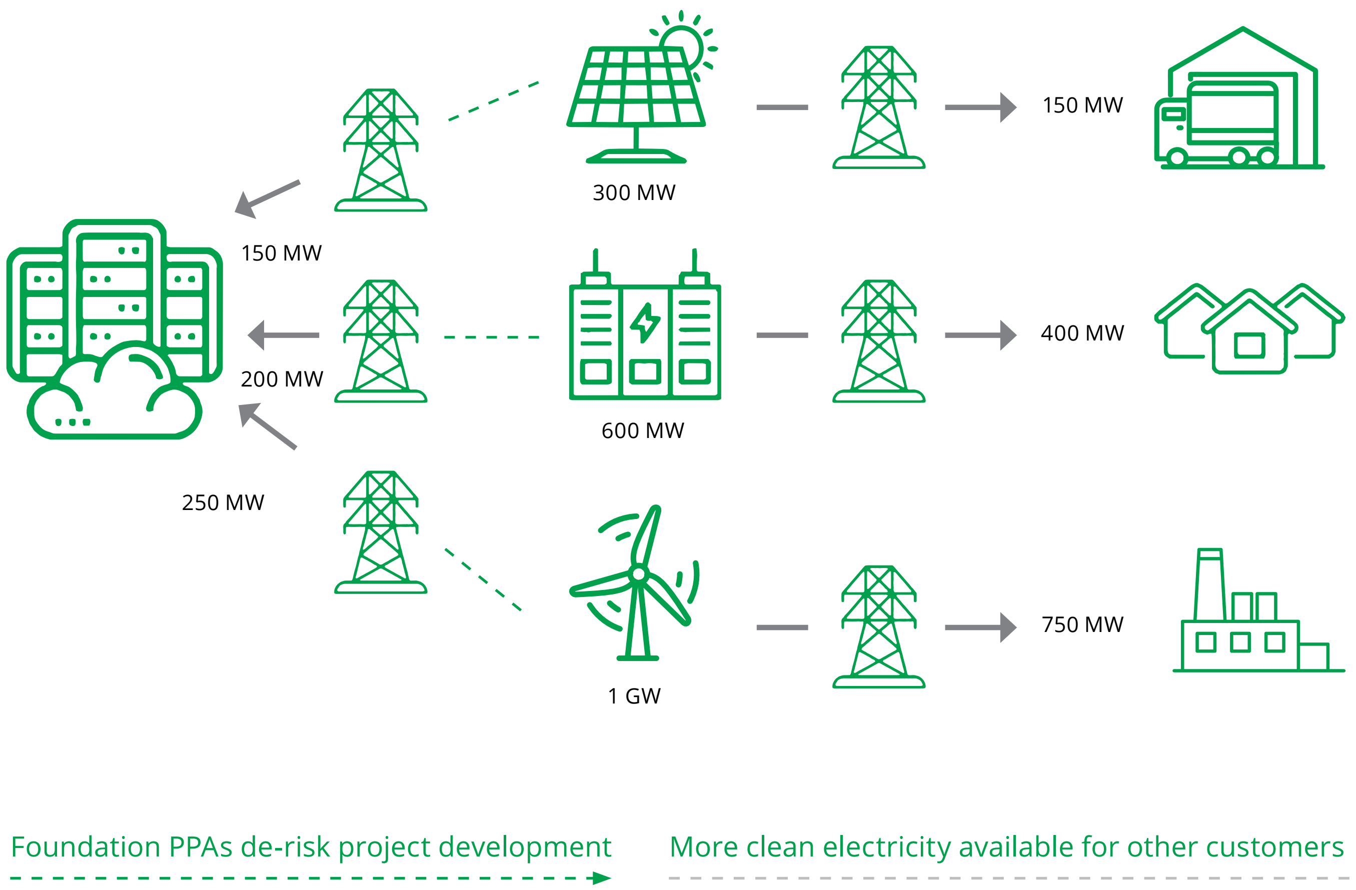
PPAs between clean energy and storage providers and data centre operators are becoming increasingly common across Asia Pacific, particularly in markets such as Australia and India where deployment of solar and wind generation is growing rapidly.

Clean energy PPAs can be highly beneficial for data centre operators, providing contracted supply at an agreed contract price or mechanism for periods as long as 20-25 years. This facilitates clear financial forecasting and business planning, and manages price risks in increasingly volatile energy markets.

By entering into PPAs, data centres can provide a revenue anchor supporting the bankability of new generation and storage projects, helping accelerate deployment of additional electricity supply. This benefits other energy users by increasing total grid capacity.

PPAs represent the primary mechanism at present for data centres to meet their energy needs quickly and cleanly, while making a positive contribution to electricity grids and decarbonisation priorities. Vertically integrated ownership of large-scale generation or storage assets is a parallel and emerging solution which can achieve the same outcome, but requires larger capital outlays and specialist operational expertise.

Figure 12: Power purchase agreements can be the anchor for additional renewable capacity



Solution in action: Amazon direct-sourcing Japanese solar projects

Amazon has enabled 25 solar projects in Japan to date through a mix of onsite deployment and corporate PPAs totaling 211MW.[64] These projects are delivered with partners such as Itochu and ENEOS, at locations including Fukushima, Tohoku and Chugoku. Reflecting the challenges of deploying renewables in densely-populated Japan, individual generation projects are relatively small – ranging from 9MW up to 38MW, with a mix of wind and solar. Together, these facilities are helping power Amazon's Japanese operations and contributing to the company's commitment to cover 100% of its energy demand from clean sources – which it has met since 2023.[65]

Solution in action: Equinix helping anchor grid-scale renewables

In 2024 the US data centre giant Equinix signed a major offtake agreement for 151MW of clean energy from the Gold Plains Wind Farm in Australia – approximately 20% of the energy from the wind farm's first stage. The PPA, which was reported to be Equinix's first in Asia Pacific, forms part of the company's strategy to power its 17 facilities around Australia on 100% clean energy by 2030. Tag Energy, the renewables developer behind the wind farm, described this PPA as "material to the project"[66] – demonstrating the role data centres can play in unlocking new electricity supply.

Solution strengths	Challenges for consideration
Augments total capacity: Data centres can confidently meet their own energy needs; boosts broader availability of clean electricity if data centre demand derisks new project development.	Commercial expertise: PPAs are bespoke contracts, requiring commercial acumen to negotiate to ensure positive outcomes for all parties and effectively manage risk.
Predictable energy pricing: Long-term supply contracts reduce exposure to electricity market volatility.	Potential need for a portfolio approach: Depending on the volume of electricity needed, data centre operators may need to source PPAs with multiple providers and/or projects.
More flexible deployment: Siting of projects can optimise for renewable generation output, land costs and infrastructure availability because data centre co-location is not required.	Grid infrastructure availability: In most Asia Pacific markets, grid infrastructure needs to be augmented to facilitate efficient and reliable distribution of new renewable generation outputs at scale. Because supply is delivered via electricity networks, this is also vulnerable to grid-level disruptions.

Clean energy data zones

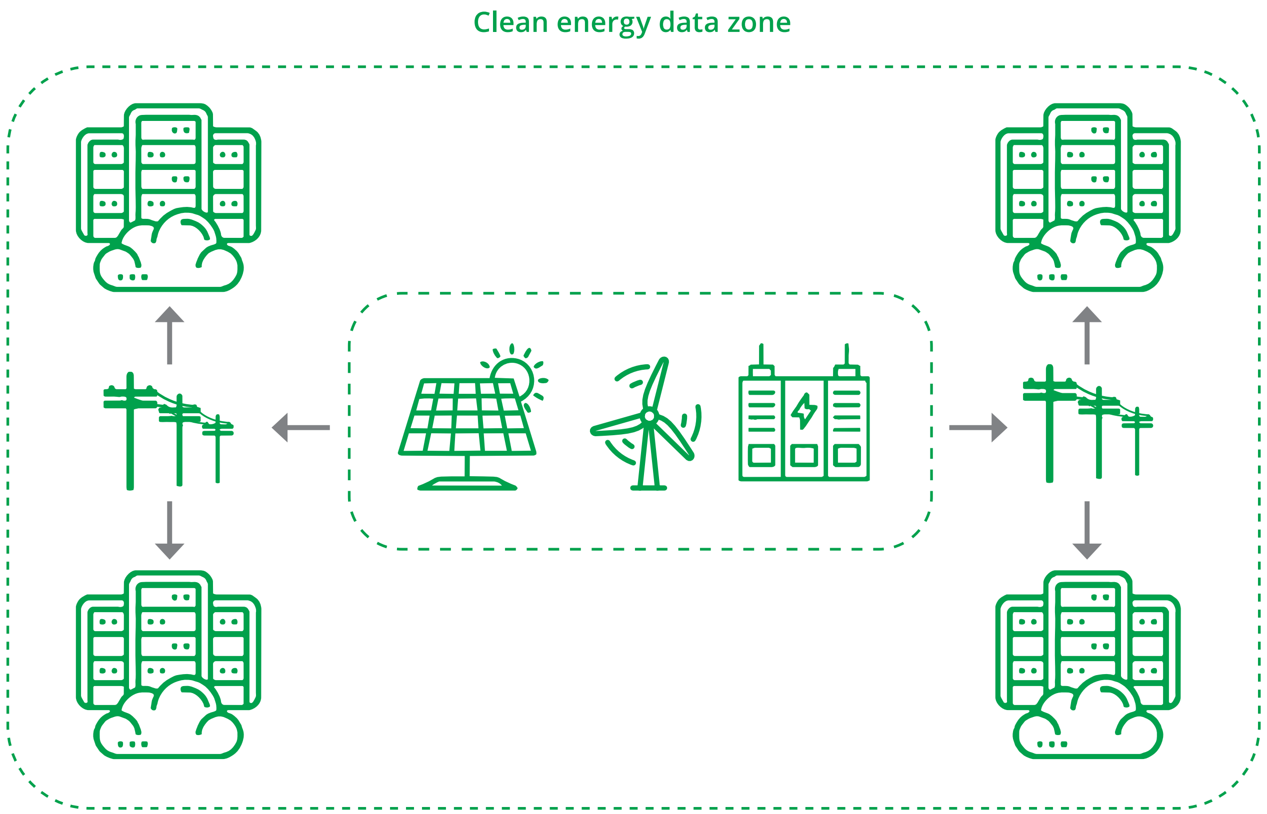
The development of clean energy data zones which co-locate major new solar and/or wind generation capacity with a concentration of data centres is an integrated model which recognises both clean energy and efficient compute as essential infrastructure for the 21st-century. This approach is particularly emerging as a response to the hyperscale data and energy needs of AI. It reflects the fact that in some instances, it is cheaper and more efficient to move data to users through fibre optic cables, than to move electricity to data centres through new copper cabling and grid infrastructure.

Clean energy data zones can be strategically located in areas with significant solar and wind energy resources, and ideally where excess grid capacity is already available to plug in new power.

Collaboration between government authorities, grid operators, data centres and energy providers maximises the efficiency of investments in common user infrastructure like regional microgrids and high-speed cables to connect the zones to data users.

Sector leaders highlighted the importance of selecting locations which meet data centre needs for low latency communication as well as addressing energy and land-use priorities. Some proposed initiatives in markets such as Singapore and Australia have not attracted significant data centre interest because of a misalignment of these factors. Clean energy data zones are also a promising opportunity in India.

Figure 13: Clean energy data zones strategically co-locate data centres and renewable generation



Zones co-locate clean energy generation and data centre campuses, reducing pressure on the grid and minimising the need for new infrastructure such as transmission lines

Solution strengths	Challenges for consideration
Aligns delivery scale with long-term sector needs: Able to support gigawatt scale data centres and aggregate demand for large-scale clean energy sources which have longer delivery timeframes, such as nuclear.	Location suitability: Scale means zones need to be located in less developed areas, which may impact latency, access to workforce and broader data centre operations. Reliable, sufficient high speed data cable connectivity is essential to enable this approach.
Improved efficiency: Can be located in areas with excess capacity to make the most of existing grid infrastructure or optimise investment in new grid and data transmission infrastructure.	Delivery lead times: Development of major new energy and grid infrastructure takes longer than smaller, standalone projects. Clean energy data zones can be developed in stages to address this.
Provides confidence on adequacy of energy supply and minimises impact on other energy users: Data centre energy and infrastructure needs are guaranteed to be met through standalone new capacity and network facilities.	Increased need for collaboration: Delivery of clean energy data zones requires partnership between governments, grid operators, data centres and energy providers, who may have different priorities and delivery capacities.

Virtual Power Purchase Agreement (VPPA) for clean energy

Virtual Power Purchase Agreements (VPPAs) are increasingly being considered by data centre operators as a practical way to scale up clean energy procurement, especially where demand is concentrated in a few locations and renewable resources are located elsewhere.

Structurally, a VPPA is a financial contract-for-difference (CfD), where the buyer and the renewable project settle the difference between a fixed strike price and the market price of electricity, and the physical power is sold into the grid.

This makes VPPAs particularly useful in markets with grid constraints or limited open-access options.

Firms such as Google, Microsoft, Amazon, and Meta are increasingly considering VPPAs to contract renewable capacity, helping them meet their clean energy and net-zero commitments while supporting new project development.

Solution in action: CERC's framework for VPPAs

In India, the CERC has issued a framework to enable VPPAs and clarify how such contracts can be structured and settled.[67] This has provided much-needed regulatory clarity and a framework for corporate buyers like data centre operators to contract renewable power at scale.

Intelligently shifting compute load

Data centre compute loads are traditionally assumed to be consistent around the clock, inpart because of customer uptime and reliability commitments built into data centre provider contracts.

But given the wide range of tasks supported by data centres today, a more nuanced perspective recognises compute loads have different characteristics (see Box below).

Distinguishing between delay-sensitive and delay-tolerant workloads creates the potential for shifting some data centre processing activities to different times of day, and even to different locations, to align this with the availability of clean and affordable electricity.

For example, AI model training runs and complex simulations can be scheduled for the middle of the day when solar generation is highest and prices are low – or even negative in markets like Australia – as a result. This benefits data centre operators directly by minimising costs and emissions, while also helping to balance electricity grids by soaking up excess generation as the penetration of renewables rises.

Similarly, ramping down delay-tolerant workloads at times of peak demand can help keep electricity available and affordable for other energy users.

In addition to load shifting by time, data centre operators with multiple sites can also shift load by location, directing compute to facilities powered by the cleanest and cheapest energy throughout the day. This requires effective networking of facilities and smart platforms to efficiently allocate compute loads according to energy availability – an emerging opportunity to leverage artificial intelligence.

Going forward, supporting electricity system reliability and stability through demand response activities can be another source of additional revenue for data centre operators. Energy networks are increasingly exploring ways to reward large energy users who can ramp their loads up or down in response to system conditions. For example, through Australia's Wholesale Demand Response Mechanism, participants are paid for reducing their power use during times of peak demand.[68] Doing so helps stabilise the grid to prevent blackouts and avoids very high peak pricing.

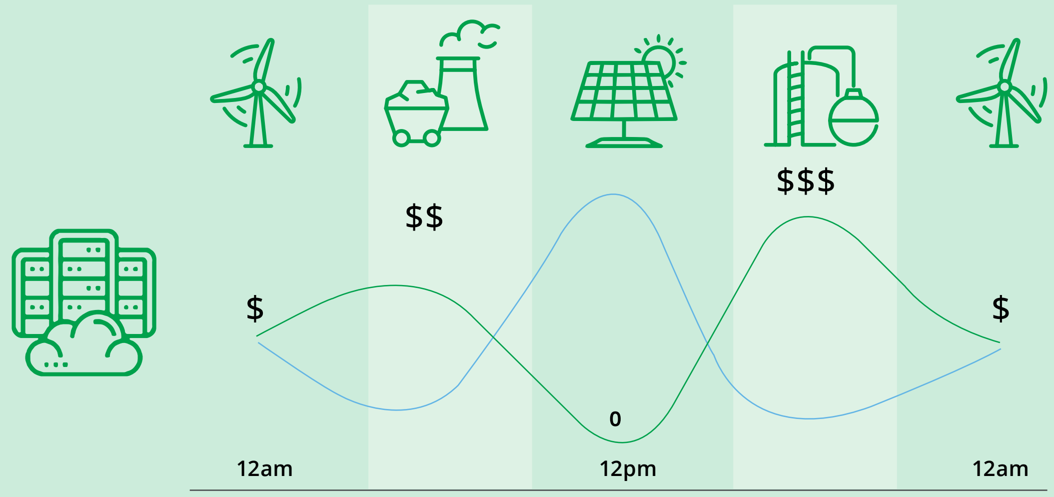
Some data centre loads are more flexible than others

Data centres process a wide variety of information, transactions and tasks – only some require instantaneous response. Operators and customers are increasingly recognising compute needs fall into two broad categories: [69]

Delay-sensitive workloads – for applications including AI inferencing, web search, mapping, video conferencing, gaming and streaming, vehicles, remote sensing through IoT, digital twins and digital transactions. These require real-time processing with minimal latency.

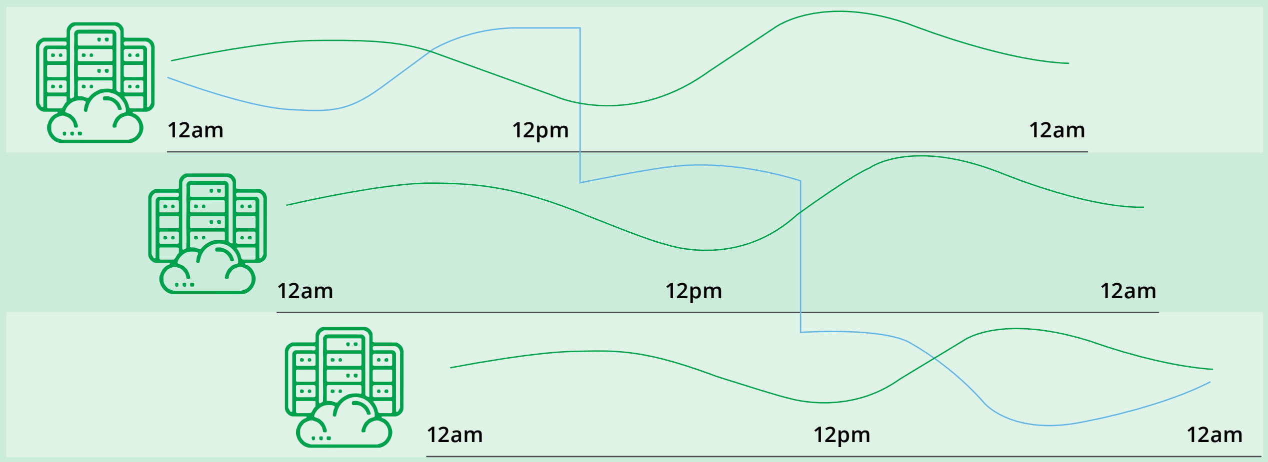
Delay-tolerant workloads – for applications including model training and fine-tuning, machine learning, software updates, big data analytics, scientific simulations and scenario rendering. These can be scheduled for processing because there is a real-world lag between compute and the use of outputs.

Figure 14: Data centre load shifting optimises use of clean and affordable electricity



Data centre operators can shift some compute loads to times of day when energy is cleanest and cheapest.

Energy prices
Data centre flexible compute load



Data centre operators can shift some compute loads to locations when energy is cleanest and cheapest.

Energy prices
Data centre flexible compute load

Solution in action: Google carbon intelligent computing platform

As one of the world's largest technology firms and data centre users, Google is leveraging innovation to optimise energy use and reduce emissions. The company has developed a 'carbon intelligent computing platform' which allows compute load to be shifted by time or location depending on the availability of zero-emissions energy.

The platform makes day-ahead predictions of where the cleanest energy will be, to flexibly adjust compute loads and locations in response to supply and demand conditions.[70] Deploying this platform is part of Google's effort to fully power its operations with zero-emissions electricity for each hour of every day by 2030.[71]

Solution strengths	Challenges for consideration
Maximises affordability and emissions reduction while creating opportunities for new revenue: Leverages the cheapest and cleanest energy available at all times, and creates the potential to monetise participation in demand response.	Represents emerging practice: Full capability and benefits of intelligent load shifting still to be demonstrated in diverse company and market contexts.
Contributes to grid stability: Supports electricity systems by soaking up excess generation at times of peak supply and reducing load at times of peak demand.	Requires investment in platform build and operation: Tailored intelligent platforms for load shifting have build and operating costs, and may require internal capacity building to optimise use.
Leverages innovation: Makes the most of emerging digital tools, including AI, to optimise energy sourcing.	Dependent on customer needs and site availability: Load shifting by time only feasible for data centre operators with significant delay-tolerant workloads; load shifting by location requires access to multiple locations with different electricity supply profiles.

These diverse strategies demonstrate the range of ways data centre operators can leverage clean energy and storage to meet their own electricity needs and contribute to less polluting, more resilient energy systems. Sector leaders highlighted that these are not yet the industry norm, but could become so with the right incentives, guardrails and enablers. Putting these in place is now a high priority as data centre deployment gathers pace across Asia Pacific.

Clean Energy Route to Market: Energy advisory that leverages decades of electricity market expertise

Deloitte's specialist energy advisory team is adept at navigating rapidly-evolving markets to scope, design and deliver energy supply portfolios for large commercial and industrial buyers.

Our Clean Energy Route to Market offering combines energy market expertise, asset modelling, risk management, deal and procurement advisory to provide commercial strategies that secure firmed, low emissions supply while addressing technology, pricing and delivery challenges.

Deloitte is a trusted guide through the energy transition for major industrials, listed firms and technology sector leaders seeking to optimise commercial and sustainability outcomes together.

06
Emerging efficiency technologies

Getty Image:
Industrial landscape with different energy resources. Sustainable development.

Energy efficiency and new supply can work together to manage demand

Exactly how much energy Asia Pacific's data centres will require in coming years is not certain. Forecasts are dependent both on the uptake of different technologies – particularly AI – and the ongoing development of data centre technologies.

Sector leaders interviewed for this report highlighted a range of promising technology solutions which have the potential to reduce data centre energy demand in the medium- or long-term. Key solutions are captured here to illustrate the evolving nature of data centre energy demand. The IEA has projected that increased energy efficiency in data centre software, hardware and infrastructure could reduce energy consumption by more than 15% compared with a business-as-usual approach.[72]

Liquid cooling technologies

Traditional data centres are cooled by the circulation of air through fans or evaporative cooling equipment, which contributes to their energy load alongside core compute activities. Liquid-cooling technologies are an important alternative approach. They take various forms, from 'closed loop' systems which continuously circulate water around data centre server racks, to direct immersion of IT components in non-conductive liquid chemicals. The potential energy savings are significant, with immersion cooling reportedly reducing the cooling component of energy demand by as much as 90%.[73] Closed loop systems and those using chemical coolants also reduce data centre water demand – another important aspect of efficiency.

Deploying liquid cooling technologies generally requires significant updates to data centre design, making them most suitable for deployment in new-build facilities or those undergoing refurbishment. Market feedback indicates new hyperscale data centres built in the coming decade will see strong uptake of these technologies.

AI-optimised operations

Artificial intelligence tools are another strong near-term opportunity, optimising how data centres are run to reduce their overall energy use. AI management systems can continuously analyse thousands of sensor readings in real time to fine-tune cooling set-points, fan speeds and pump operations. They can also assist in shifting compute workloads to the most efficient servers or times of day (see p.50-51), and analyse redundant or duplicative data to free up storage space.

The extent of energy savings will vary depending on how AI is deployed and whether it is used in combination with other efficiency technologies. But sector leaders are bullish on the potential for AI tools to help optimise their operations, and these are expected to become increasingly commonplace across the sector as tools and products improve.

Step-change computing technologies

Looking towards horizon technologies, sector leaders are monitoring the development of quantum computing for its potential to drive a step-change in energy efficiency.

Quantum processors use quantum bits to represent and manipulate information in ways that allow some complex optimisation, simulation, and cryptographic tasks to be solved using fewer computational steps. In principle, this means that workloads which currently require large server fleets and significant power supply could be executed on far smaller systems.

However, quantum computing hardware requires extremely low temperatures – equivalent to those in outer space. At present, cryogenic cooling systems used to achieve these sub-zero temperatures are also energy intensive. In a traditional data centre, electricity for compute makes up the majority of energy demand compared with cooling; this ratio would be reversed for quantum data centres.[74]

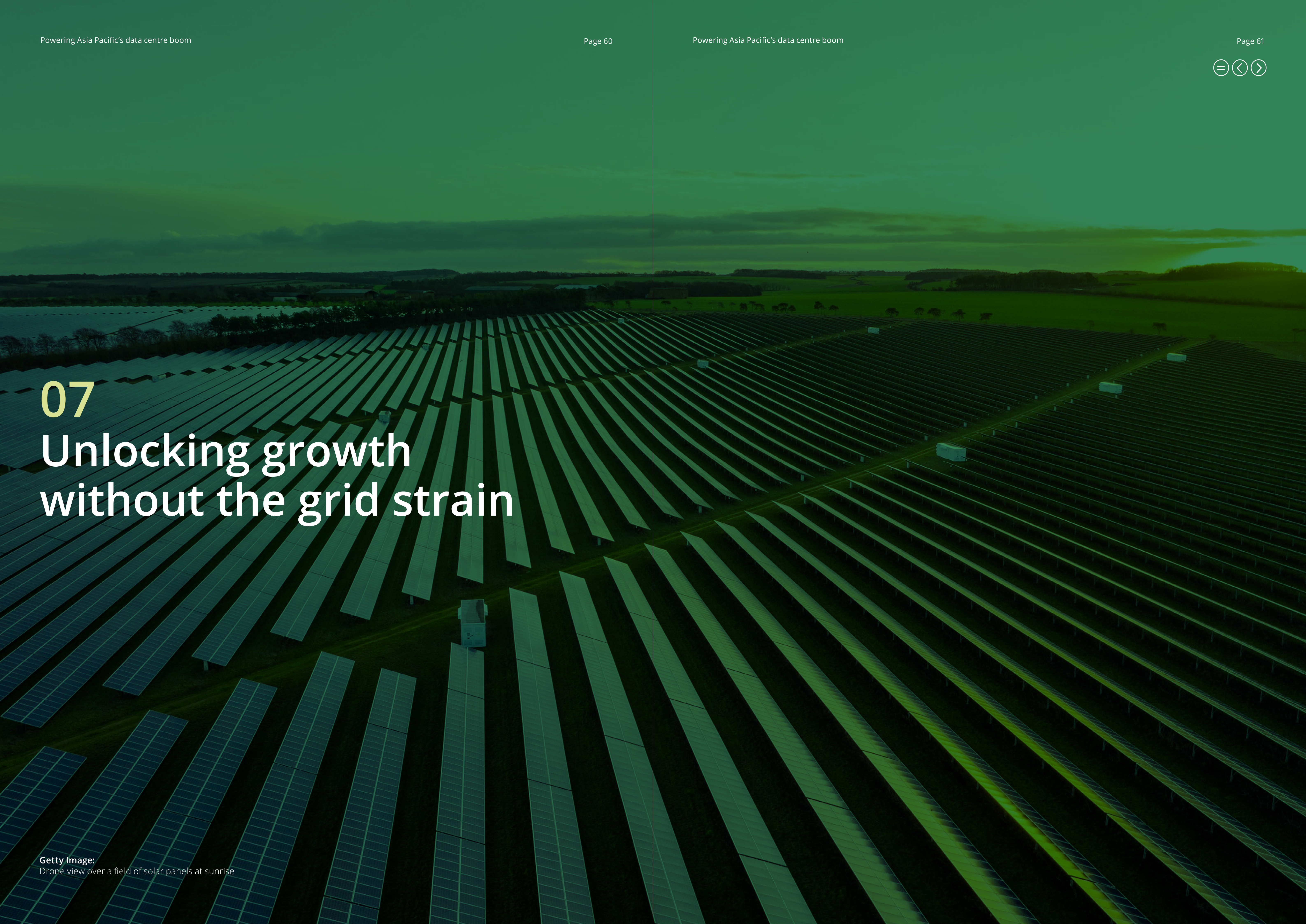
Any net benefit for energy systems from commercialisation of quantum computing therefore depends on achieving major parallel efficiencies in cooling.

Orbital data centres

The land, energy and cooling challenges faced by terrestrial data centres have prompted researchers to propose an out-of-this-world solution: carbon neutral data centres in space.[75] Orbital data centres would theoretically be powered by solar radiation and cooled by the sub-zero conditions of space, resulting in zero emission, highly energy-efficient operations. In November 2025 the start-up Starcloud launched its first data centre satellite into space, testing the deployment of NVIDIA GPU equipment.[76]

The significant costs and emissions impacts of launching data centres into space mean this is unlikely to become a mainstream solution in the foreseeable future and complex engineering challenges remain to be solved. But as an example of the innovative thinking being applied to solving the data centre energy challenge, it highlights that new solutions may still emerge from unlikely places.

Even with these opportunities in mind, there was clear consensus among sector leaders that data centre energy needs will be significant and challenging to meet if the sector follows its currently-projected growth pathway. This underlines the importance of pursuing the broader clean energy opportunities explored in this report, while embracing more energy-efficient technologies as these become available.



07
Unlocking growth without the grid strain

Getty Image:
Drone view over a field of solar panels at sunrise

Priority actions for smart energy sourcing strategies that scale

Asia Pacific's data centre sector can grow rapidly while making a positive contribution to energy systems and decarbonisation if all parts of the ecosystem now adopt a power-first approach to data centre delivery.

This means designing grid-boosting clean energy into new projects and precincts as a core pillar of success, leveraging models piloted by sector leaders and explored in this report.

Deloitte has identified the top three actions key actors in the data centre ecosystem can take now to build power in project delivery, shaped by the insights and priorities of those leading the data centre charge.

Data centre operators and developers

1. Leverage cost effective clean energy sourcing strategies that add to total generation capacity

Data centres can include energy sourcing as a central consideration at the earliest stages of project design, shaping decisions like location, site selection and capacity in the context of clean energy opportunities – alongside other commercial drivers.

Priority strategic questions to explore upfront include:

- What is the facility's clean power pathway for the first 5, 10 and 20 years of operation?
- How can the facility fully account for its expected demand load through new clean generation capacity?
- What mix of clean energy technologies and services can meet the facility's specific load profile and reliability requirements most cost efficiently?
- Which elements of energy infrastructure are best co-designed, co-located or contractually integrated with the data centre facility?
- Are there opportunities for aggregation or coordination in clean energy sourcing with other ecosystem actors?

Data centres seeking to strengthen social licence or ease regional and local energy constraints could also explore underwriting new generation capacity over and above their own needs, making a net additive contribution to clean energy supply.

2. Boost the overall revenue stack by building in storage

Co-located or contractually integrated batteries can provide firming capacity to manage variable clean energy, smooth on-site demand and support resilience during times of energy system peak demand or stress. Beyond these direct uses, battery assets can participate in growing wholesale firming markets and Frequency Control Ancillary Services (FCAS), capturing value from fast-response services that support the broader grid.

Designing storage into the core data centre architecture allows projects to optimise battery size, dispatch profiles, and connection arrangements to maximise both operational benefits and market participation. While revenues from firming and FCAS will vary by market conditions and regulatory settings, integrating storage can improve overall project bankability by diversifying income sources, reducing exposure to energy price volatility and aligning data centre growth with broader system needs.

3. Strengthen operational and system resilience together by optimising flexibility

The next wave of data centres can be more flexible in energy use and compute capacity than prior generations. Having the capacity to participate in demand response can be a further component of total facility revenue, while strengthening resilience against electricity system disruptions and helping keep grids stable for all other users.

To achieve this, data centres can be designed for flexibility across multiple dimensions including:

- Service contracts – refine contract offerings and pricing structures to better distinguish between delay-tolerant and - intolerant compute loads, creating more capacity to load shift by time while continuing to meet customer needs.
- Intelligent control software – leverage innovation and artificial intelligence to gain more granular visibility and control over data centre operations and compute loads.
- Networked interconnection – build the networking infrastructure that enables load shifting by location across a provider's entire fleet, where feasible in context of data sovereignty, latency tolerance and other customer requirements.

Embedding this approach will require new kinds of collaboration with major data centre customers (see actions for investors and customers).

Governments

1. Provide priority accelerated approvals and permitting to data centres that contribute to stronger, cleaner grids

Governments can use planning and project approval frameworks to incentivise data centre development that aligns growth with energy system needs. National, regional and local governments can offer priority and accelerated permitting pathways to projects that contribute to grid strength and decarbonisation by bringing forward new renewable generation, integrating firming and storage capacity, and/or contributing to demand response.

Agencies can establish clear eligibility criteria upfront, providing developers with certainty while limiting assessment requirements for regulators. By linking faster approvals to a range of measurable system benefits, governments can shift market behaviour without mandating specific technologies or imposing additional regulatory costs.

2. Align policy signals in the right direction to shape market choices

Clear and enduring policy settings are a critical enabler of sustainable data centre growth. Government policy shapes the sector's development by:

- Setting market incentives which drive cleaner energy choices – particularly through carbon pricing frameworks and national grid decarbonisation goals.
- Establishing minimum standards operators must meet – such as PUE requirements and clean energy standards.

3. Strengthen transmission planning and evacuation infrastructure for clean power transmission to data centre hubs

The Government should prioritise forward-looking transmission planning to enable large-scale evacuation of renewable energy from resource-rich regions to emerging data centre clusters. This includes accelerating investments in high-capacity transmission corridors, substations, and network reinforcement around major demand hubs. Coordinated planning between central and provincial agencies, coupled with streamlined approvals and right-of-way processes, can further de-risk project timelines and make clean energy sourcing both scalable and cost-competitive.

4. Co-invest in shared user infrastructure

Governments can enable the deployment of additive clean energy by data centres through investment in grid and other infrastructure that unlocks this new capacity. Most renewable energy generation for data centres will not be co-located onsite – this means grid capacity to transport energy from where it is generated to where it can be used is essential. Public investment in high voltage transmission infrastructure and lower voltage distribution networks can increase system capacity to make best use of new electricity supply. Governments across Asia Pacific are already planning and undertaking grid upgrades to meet rising electricity demand economy-wide. The increased system load associated with moving electrons between new generation facilities and the data centres that have commissioned them is now an important factor to consider in right-sizing these grid-strengthening efforts.

Public co-investment can also encourage data centre aggregation in locations with abundant renewable energy or potential for its generation. Strategic public co-investment in shared user infrastructure such as high-capacity data cables, grid connection assets and designated clean energy data zones can reduce upfront costs and coordination risks for individual projects while maximising system-level benefits. This public investment will be a critical incentive for directing new data centre loads towards strategic locations in existing energy systems. By enabling multiple facilities to co-locate around common energy and digital infrastructure, governments can avoid fragmented, bespoke connections that strain networks and grid augmentation efforts.

5. Provide regulatory clarity for innovative clean energy sourcing mechanisms

The Government should establish a clear and stable regulatory framework for emerging procurement instruments such as VPPAs and RECs, and other market-based mechanisms. Clear rules on contract structures, settlement, accounting, and claims of renewable usage will reduce uncertainty for developers, investors, and corporate buyers, and encourage wider adoption of these instruments.

Energy providers and asset owners

1. Tailor renewable offerings to capitalise on the growing data centre market

Data centre energy needs are different from other commercial customers in their energy density, relatively consistent round-the-clock loads, and very high reliability requirements. Meeting these requirements from fully renewable sources can require entering into complex contracting and risk management arrangements – sometimes with multiple energy partners.

There is a strong opportunity for energy providers and investors to scale offerings which respond to data centre needs with tailored and streamlined energy solutions. Examples include integrated solar PV and battery solutions for edge data centres and smaller facilities; bundled PPAs which aggregate energy from different sources to provide matched hour-for-hour clean supply; and intelligent computing platforms for load shifting as a service. The common benefit across these – and other – solutions is removing points of friction which can currently make sourcing clean energy more challenging than conventional alternatives.

2. Make smart use of existing grid assets through a 'coal-to-compute' strategy

Energy asset owners are uniquely positioned to unlock faster data centre development by repurposing existing generation sites and surrounding land as assets retire in coming years. Former coal and other industrial sites often retain high-capacity grid connections, substations, transmission access and proximity to skilled workforces. These sites are well suited to hosting a new generation of integrated renewable energy, storage and data centre infrastructure.

By proactively redesigning these sites as power-and-compute precincts, asset owners can create new long-term revenue streams while maximising the value of sunk infrastructure investment. A coal-to-compute approach illustrates how Asia Pacific economies can create new types of value in response to climate and digital access drivers.

3. Collaborate, coordinate and pursue joined-up planning

Energy providers and asset owners can work early and closely with grid operators, system planners, governments and data centre proponents to align new sources of demand with clean energy availability. Rather than responding to individual supply requests in isolation, coordinated planning can identify locations where generation, firming network capacity and large digital loads can be developed together in precincts or clean energy data zones. Proactive collaboration can improve the bankability of new renewable and storage assets by anchoring them to long-term, concentrated demand. It also reduces congestion risks and avoids duplicative infrastructure.

Close engagement with governments, grid operators and data centre proponents is also critical to right-sizing overall electricity supply and the underlying grid infrastructure that delivers it. At the moment, all parts of the electricity system are grappling with how to accurately forecast future data centre electricity loads, given wide variation in estimates of how much new capacity will ultimately be deployed in each Asia Pacific country. Underdelivering new supply and grid infrastructure risks electricity shortfalls; overbuilding in anticipation of demand that never eventuates risks wasting investment, supply chain and delivery capacity. Close collaboration and coordination on the supply and demand sides of the electricity market is essential now to get the balance right.

Investors and major customers

1. Strengthen market signals by prioritising projects and partners which demonstrate additive clean energy credentials

Data centre investors and major customers play a critical role in shaping how the market scales in response to digital infrastructure demand. Setting a clear preference for projects with a power-first approach sends a strong signal to developers, energy providers and planners about what constitutes bankable, future-proof infrastructure.

As more capital and long-term partnership agreements flow toward projects that bring forward new renewable generation, firming or grid-supporting capacity, this will progressively reinforce additive clean energy as the default model for the data centre sector.

2. Leverage synergies in integrated portfolios of new energy and data centre capacity

Investors and hyperscale customers can reduce risk and enhance returns by viewing clean energy assets and data centre capacity as complementary components of a single, integrated portfolio. Coordinating investment across generation, firming and compute infrastructure allows demand growth to be matched directly with new supply, which can improve asset utilisation for energy investments and long-term cost certainty for chosen data centre projects.

Integrated portfolios can capture operational and commercial synergies, including shared siting decisions, aligned development timelines and more efficient capital deployment across power and digital assets. In some Asia Pacific markets, hyperscale customers are increasingly demonstrating a focus on pairing compute growth with dedicated clean energy capacity to reduce exposure to grid constraints and strengthen sustainability credentials. This acknowledges that energy procurement has moved from a downstream consideration to a core component of the data centre delivery model.

3. Adjust workloads to new energy system realities

Major customers can reduce cost and energy system impact by working closely with data centre partners to align compute workloads with the evolving profile of clean energy supply. This means taking advantage of periods of high energy availability and low marginal cost in the middle of the day, and limiting workloads during overnight and peak periods which are increasingly constrained. Coordinated customer load management can augment and enable demand response strategies by data centres operators (see actions for data centre operators).

As noted in Chapter five, eligible workloads may include AI model training and retraining, batch data processing, analytics and simulations, software testing and build pipelines, non-urgent rendering and content processing, and other latency-tolerant or interruptible tasks. This collaborative approach can lower energy costs and improve overall system efficiency, while preserving performance for time-critical data processing tasks.

Conclusion
Driving impact together

Getty Image:
Engineers wearing personal protective equipment working on top of wind turbine farm

Coordinated action across the data centre ecosystem can deliver shared wins

Asia Pacific needs data centres to power ongoing economic growth. The data centres sector needs affordable, reliable and clean energy to scale to its full potential. This makes data centre energy demand a top business and policy priority to address now.

Dealing with this challenge will require active focus and close collaboration by the diverse range of stakeholders involved in shaping the sector's development: data centre developers and operators; governments; energy providers and asset owners; investors and hyperscale customers.

With a global race underway to attract investment in this essential digital infrastructure, this report has identified clear actions for each part of the ecosystem to help make Asia Pacific a data centre powerhouse. Prioritising these actions now will ensure the region seizes the benefits of data sector growth while effectively managing the energy equation. This is smart business and economic strategy and a timely social contribution in one, building strong foundations for long-term sector success.

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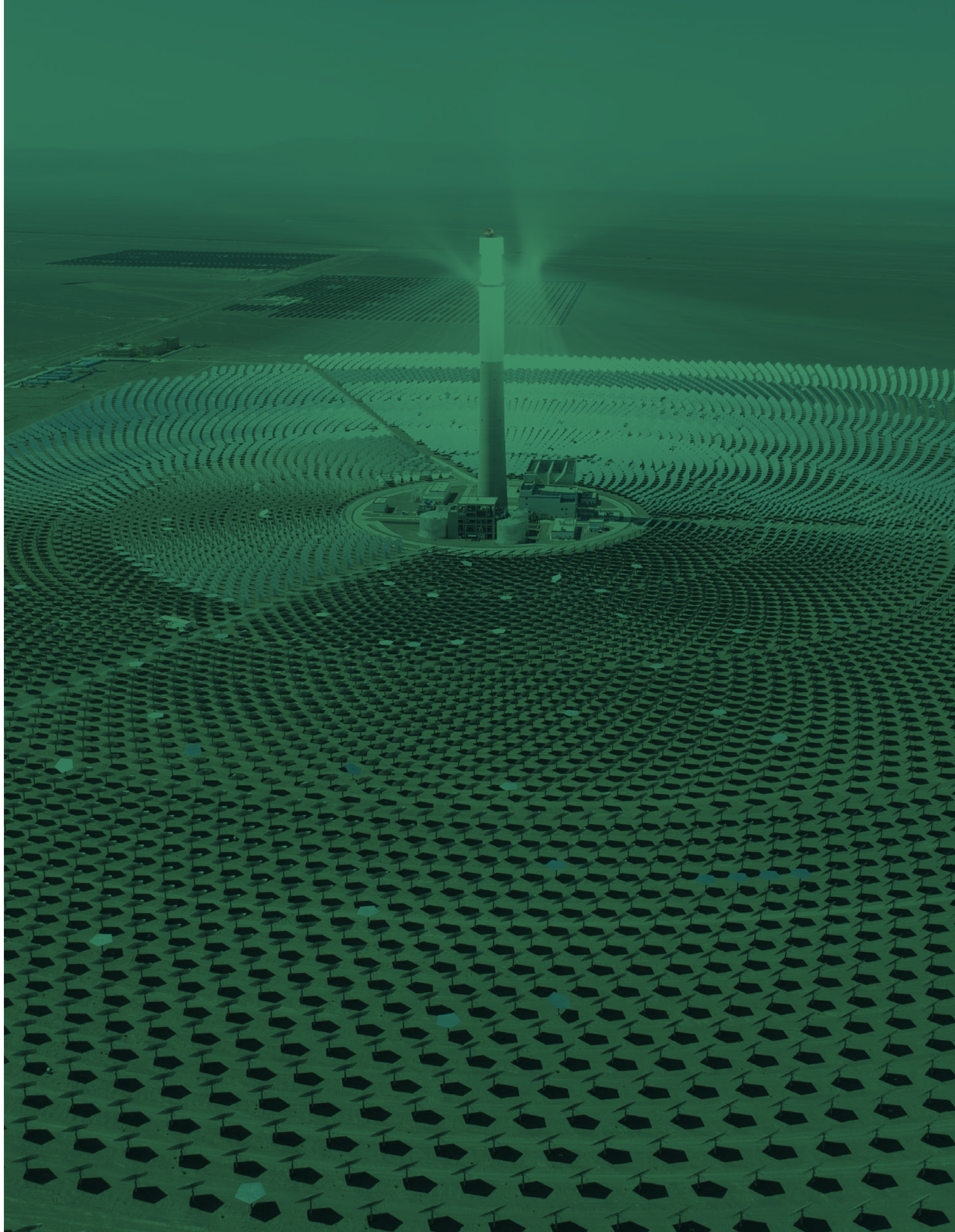

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