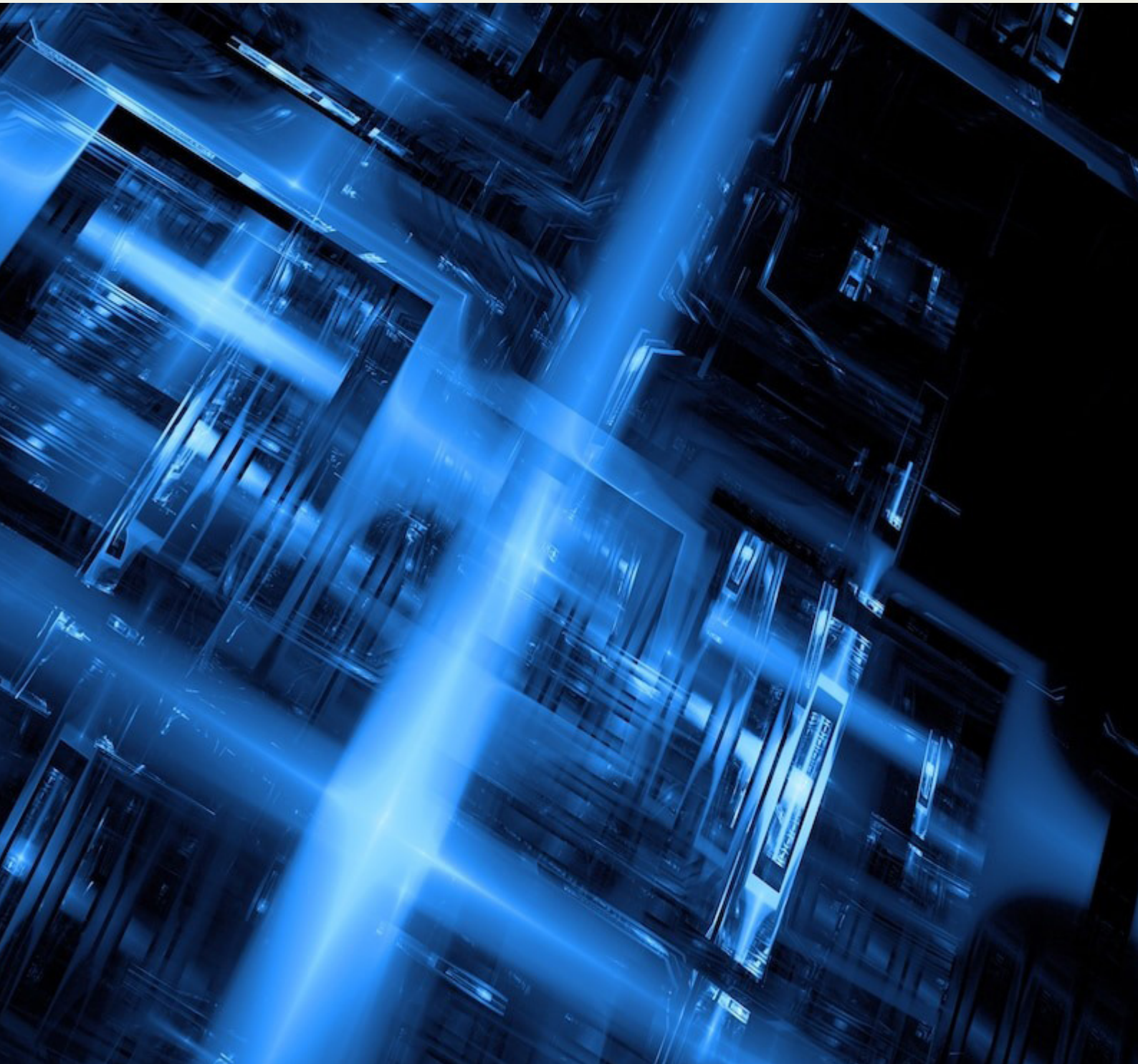


Data Centres The Cambodia Report

December
2024

Navigating the Data Centre landscape in
Cambodia

knightfrank.com/research



Cambodia

▶ **16.7m**
Population

▶ **60%**
Internet Users

▶ **10%**
Interest Rate

▶ **0.158**
Electricity Price,
USD per kWh

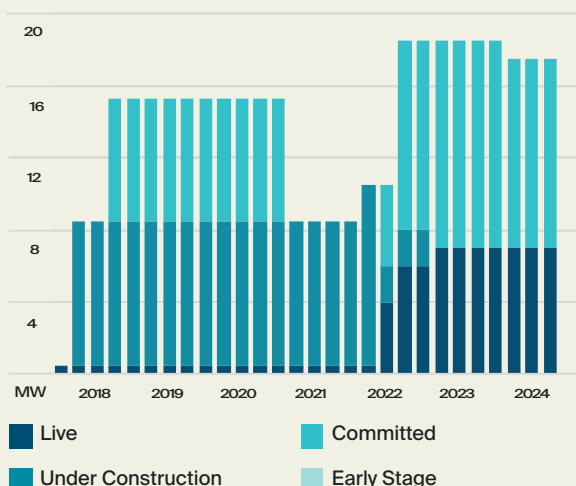
SUPPLY

Cambodia, with an impressive GDP growth rate of 7% per annum between 1995 and 2019, has undergone significant modernisation over the past two decades. This progress is now driven by private sector advancements in e-commerce and e-banking, complemented by government e-platform initiatives. These efforts have spurred the emergence of key players in data centre development, such as Chaktomuk (CDC), ByteDC, and Daun Penh (DPDC) in Phnom Penh, who are shaping and pioneering commercial data centre developments. While there was initial market hesitation to transition from traditional in-house data centres to external colocation facilities, the financial and banking sectors have embraced this shift, prioritising data security and customer protection.

The current operational data centre capacity in Cambodia is estimated at around 7MW, supplying the market. By 2025, additional capacity is anticipated following the recent announcement of a \$30 million data centre project by the Ministry of Posts and Telecommunications (MPTC).

With the expectation that the Royal Government of Cambodia will introduce legislation requiring companies operating in Cambodia to store their data onshore, numerous projects are at the feasibility stage and the sector is expected to expand exponentially over medium and long-term.

Supply

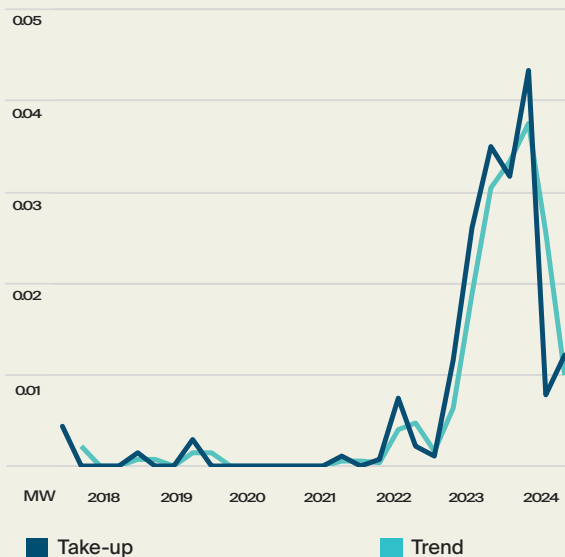


Source: Knight Frank Cambodia

TAKE-UP

Between 2018 and 2021, take-up remained relatively low, showing only minor variations and a generally flat trend until 2021, when growth began to accelerate. A sharp rise occurred in 2022, culminating in a peak in 2023, highlighting rapid growth in data centre services. This surge reflects the entry of key operators such as CDC, ByteDC and DPDC into the market. These developments and trends suggest that the Cambodian data centre sector may now be entering a phase of expansion.

Take-up



Source: Knight Frank Cambodia

MAIN OPERATORS

Cambodia's data centre market is led by several key operators, including ByteDC, Chaktomuk (CDC), Daun Penh (DPDC), Telecotech, Ezecom, Seatel, MekongNet and NeocomISP (NTC). Moreover, the MPTC is expected to complete its new data centre in 2025, which is set to add significant capacity into the pipeline, though the specific megawatt (MW) capacity has yet to be announced.

TERMINOLOGY

A data centre is a physical location that houses computer systems and its associated components, such as servers, data storage drives and network equipment. It is a purpose-built facility that provides the secure and reliable environment needed for storing and processing digital information or data. Data centres are essential to modern businesses, as they provide the infrastructure needed to support a wide range of IT systems and applications. Data centre operators lease their facilities to companies, organizations and private institutions to store their client data, a practice commonly known as “colocation.”

Data centres are classified into Tiers from I to IV. According to The Uptime Institute’s Tier I-IV classification, there are three categories: Design (remote review of project plans), Construction (on-site verification of build quality) and Operation (on-site assessment of management and maintenance). Generally, Tier I, designed for small businesses with less critical needs, offer an uptime of 99.671%, with potential downtime of under 28.8 hours annually, no redundancy (any failure causes downtime until fixed) and minimal costs. Tier II caters to small and medium-sized businesses, providing partial redundancy in power and cooling (some backups exist but not for all systems), an uptime of 99.741% and downtime capped at under 22 hours, balancing reliability with moderate costs. For larger businesses and government entities, Tier III offers a significant leap in resilience with N+1 fault tolerance redundancy (critical systems have one backup to prevent downtime), 99.982% uptime and downtime limited to under 1.6 hours per year. Lastly, Tier IV delivers maximum reliability with fully fault-tolerant 2N or 2N+1 redundancy (all systems are duplicated for maximum reliability), ensuring 99.995% uptime and downtime of less than 26.3 minutes annually, ideal for government entities to enterprises with global reach. As tiers advance, so do the costs, reflecting the sophisticated infrastructure and redundancy required to minimise downtime and ensure seamless performance.

Imagine a data centre as a high-tech IT building with various spaces for rent, it is quite similar to a condominium and hotel room types. Instead of categorising as studios, one-bedrooms, two-bedrooms or penthouses, they categorise as rack space, in shared, half or full rack, cage space and private suite space. “Rack Space” is like renting a hotel or condominium room for your servers and equipment. “Cage Space” provides a private space, locked area within the data centre, like a secure room in your condo for valuables. For maximum control and customisation, “Private Suite” space type is like a penthouse suite tailored to specific preferences.

Within a typical data centre, its services go beyond providing space. It offers a wide range of services. These include cloud hosting (renting virtual servers), managed hosting (outsourcing IT management), data storage, backup and recovery, network security and disaster recovery planning.

To understand the dynamics of the data centre market, it is important to consider the different stages of supply or capacity. “Live Capacity” refers to data centre IT power that is currently operational, regardless of whether it is being used or not. “Under Construction Capacity” represents the IT power that is actively being developed, with mechanical and electrical systems being installed. “Committed Capacity” is the IT load that is highly likely to be added to the market, with secured resources like land, power and government approvals, often backed by a reliable operator. Also, it could refer to unused shell space within an existing data centre. Finally, “Early Stage Capacity” refers to an announced or speculated IT load that has not yet secured all the necessary elements, such as land, power and government permits for development and may require significant commitment before proceeding. These supply or capacity stages help provide a classification and comprehensive view of the market’s current state and its potential for future growth.

METHODOLOGY

Knight Frank Cambodia, for the research methodology, employs a meticulous, bottom-up approach to analysing the data centre market. This involves gathering available detailed information on each visited data centre facility, including its IT power capacity, occupancy rates and stage of development, to provide a comprehensive and reliable assessment of the data centre market landscape.

With a snapshot showing a population of 16.7 million, 60% internet users, a 10% interest rate and an electricity price of 0.158 USD per kilowatt-hour (kWh), we have gathered these data as explained:

Population: Based on the 2019 General Population Census, Cambodia’s population was 15.6 million with an annual growth rate of 1.4%, provided by National Institute of Statistics of Cambodia (NIS). Projecting this forward with the annual growth rate, the current population is estimated to be approximately 16.7 million.

Internet Users: According to the Telecommunication Regulator of Cambodia (TRC), there are currently 20 million internet subscribers. Assuming an average of two internet devices per person, we estimate around 10 million internet users in Cambodia. This equates to approximately 60% of the total population using the internet.

Interest Rate: For the interest rate, we have used the average annual commercial loan interest rate in 2024, which is currently about 10%, provided by the National Bank of Cambodia (NBC).

Electricity Price: The electricity price, 0.158 USD per kWh, is based on the current pricing list from the Electricity Authority of Cambodia (EAC).

PROFILES OF PROMINENT DATA CENTRE OPERATORS

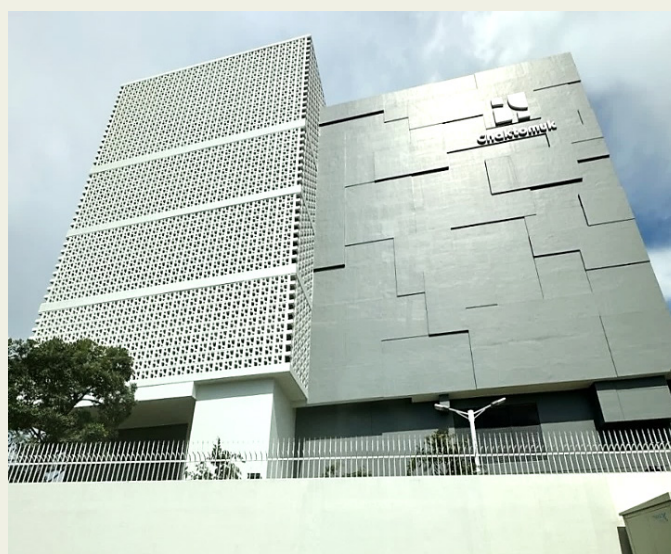
ByteDC

ByteDC, part of a mixed-use development, Global Tech Exchange, in Daun Penh District is a Tier III Uptime Design-compliant data centre officially inaugurated in 2023. ByteDC was established through a joint investment between Cambodia and Singapore. This data centre facility, recognised for its innovative design and exceptional development, was awarded two prestigious Property Guru Asia Property Awards in 2019: Best Data Centre Architectural Design and Best Data Centre Development. ByteDC's 7,529 sq m 3MW facility offers 2,787 sq m of premium data hall space, capable of accommodating up to 1,000 IT racks. Backed by redundant power systems, advanced cooling technologies and robust fire protection measures, ByteDC ensures the highest levels of reliability and security for your critical data. With a 2N FORM 4 power distribution system and three 2,500 KVA power units in an N+1 configuration, this data centre guarantees an uninterrupted power supply. The facility's efficient system and ample fuel storage further enhance its resilience. As a carrier-neutral facility, ByteDC offers unparalleled flexibility and connectivity options. Its dedicated team of experts provides 24/7 support, ensuring optimal performance and security.



Chaktomuk Data Center (CDC)

Chaktomuk Data Center (CDC), situated in Russey Keo District near Camko City, is a Tier III Plus Design-compliant data centre. It comes with a seven-storey facility spanning 11,500 sq m of floor area with 3,480 sq m of dedicated rack space, accommodating up to 900 IT racks. Designed for concurrent maintainability and redundancy, it ensures seamless operations and constant availability of clients' mission-critical equipment and data. Its infrastructure boasts 2N utility power supplies, N+1 transformers, backup generators, and UPS systems, supported by 68,000-litre fuel tanks for uninterrupted power. The fire protection includes VESDA smoke detection and Novec 1230 gas fire suppression, safeguarding equipment without the risk of water damage. A robust water leak detection system and an advanced Building Management System (BMS) further enhance safety, monitoring and operational efficiency. Security is paramount, with 24/7 surveillance, stringent access controls, and three-metre concrete wall fencing for maximum protection. Its co-location solutions range from shared rack spaces to dedicated rooms, tailored to businesses of all sizes. Chaktomuk Data Center (CDC) provides fault-resistant, secure and high-performance data infrastructure, designed to meet Cambodia's growing digital needs while ensuring operational excellence.



Daun Penh Data Center (DPDC)

Daun Penh Data Center (DPDC), was established in 2023, operating under Daun Penh Cloud (DPC). DPDC is one of the leading providers of secure and reliable data solutions in Cambodia. Located off Hun Sen Boulevard in the innovative ING City of Phnom Penh, Meanchey District, this data centre facility boasts a capacity of over 750 server units, equipped with modern technology and a skilled IT team. Committed to protecting valuable data, it offers robust security measures, redundant systems and a superior uptime guarantee, precision air-conditioning systems and NOVEC gas fire suppression, ensuring unparalleled reliability and security for your critical data. With 24/7 support from its highly skilled engineers and advanced network operations centre, DPDC offers a comprehensive suite of services tailored for businesses of all sizes. Driven by a vision to be the preferred data centre partner for both local enterprises and foreign businesses entering Cambodia, it prioritises performance, sustainability and innovation. It specializes in cloud services such as Infrastructure as a Service (IaaS), Platform as a Service (PaaS), Software as a Service (SaaS), and cloud migration. Main products are virtual and cloud servers, cloud storage, virtualisation system and web hosting, empowering businesses to leverage the power of cloud computing. Currently, Daun Penh Cloud's domestic-focused services are challenging global giants like Amazon AWS, Microsoft Azure, Google Cloud and Alibaba Cloud.



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