



Under Construction
183+ MW

“Public cloud infrastructure should accelerate more hyperscale developments beyond Tokyo.”

MORE INFORMATION

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Market Overview

Tokyo continues to attract further investment, beginning with the entry of Zoho, ST Telemedia Global Data Centres, and Stack Infrastructure, with their initial local projects bringing the under-construction total in-market capacity to more than 183 MW. We note their target tenant profiles are shifting toward hyperscale tenants, typical cloud service operators promoting their extended platforms to both public and private infrastructure. While hardly a low-cost market for land acquisition, land remains available for major builds, a considerable advantage in comparison to rapidly constrained markets regionally and globally. Elsewhere, NTT, the world's third-largest global data center provider after Equinix and Digital Realty Trust, opens the largest project in Indonesia with the capacity totaling to 45MW as well as a 6MW data center in Vietnam. It also has announced a strategic partnership with Macquarie Asset Management for accelerating further data center developments in Europe and the U.S. Macquarie has acquired a majority share in several of NTT's DC holding companies in the markets for approximately JPY100 billion, while NTT maintains around 25-49% ownership.

Ecosystem Developments

- **The cabinet office** has announced an investment of JPY5.7 trillion (US\$46.8 billion) in fiscal 2022 for accelerating rural-urban digital integration under [the "Digital Garden City State" vision](#). The vision includes constructing more than a dozen regional data centers in approximately five years, completing the nation-wide submarine cable network in three years, and bringing fiber optics into universal service by 2030. The planned digital infrastructure will become the foundation of basic nationwide public services such as Mobility as a Service or MaaS.
- **GLP** has announced it will invest JPY1.5 trillion (US\$12.3 billion) to develop facilities equivalent to 900MW of data center capacity over the next five years. The company has already secured several sites in Greater Tokyo and Greater Osaka to commence the construction of facilities equivalent to 600MW from 2023.
- **Daiwa House Industry** has launched a data center brand, DPDC (D Project Data Center). By 2025 the company aims to build 14 data centers with a total floor area of approximately 330,000 sq.m. (3.55 million sf) at DPDC Inzai Park in Inzai, Chiba Prefecture. The company also plans to invest JPY100 billion (US\$815 million) by 2025 to develop several data centers in other submarkets in the country.
- **Zoho**, headquartered in India, Singapore's **ST Telemedia Global Data Centres (STT GDC)**, and **Stack Infrastructure** from Colorado, USA, have announced their first entries into the Japan data center market. Zoho opened two locations in Tokyo and Osaka in February 2022. STT GDC will open two data centers with totaling 60,000 sq m (645,600 sf) with combined capacity of 60MW in Goodman Business Park in Inzai.. Stack is developing a two-building 36MW campus in Inzai. Planned delivery for the projects will be after 1H 2024.
- Australian micro data center firm **Zella DC** has deployed its first micro data center in Japan at IJ's Shiroi Data Center Campus in Chiba Prefecture. A tiny outdoor unit is complete with essential DC components such as UPS, cooling systems and physical security. It can be installed anywhere, including the rooftops of existing buildings, and function as an emerging Edge computing platform for 5G infrastructure companies.

Sales & Investment: Foreign investors' demand lifting prices for acquisition

In December 2021, **Digital Edge** added five new data centers from ITC data service company Itochu Techno Solutions, for JPY26 billion (US\$2.6 billion) at a unit price of US\$275 per sf¹. Located in Tokyo, Yokohama, and Kobe, the company's new acquisition of 18.5MW will grow the company's total capacity in Japan to 38MW. Elsewhere, **Lendlease** has launched its first hyperscale joint venture with **Princeton Digital Group** for JPY74 billion (US\$600 million) with 80% of the fund capital allocated to external investors.

Market in Focus: Cloud service operators²

The cloud services market grew 42.1% between 2019 and 2021 and is forecasted to further expand at around CAGR 20% over seven years until 2027. According to the latest survey by the Development Bank of Japan, about 65% of companies have adopted cloud services for their data center operations in 2020, increasing the growth prospect for cloud service operators.

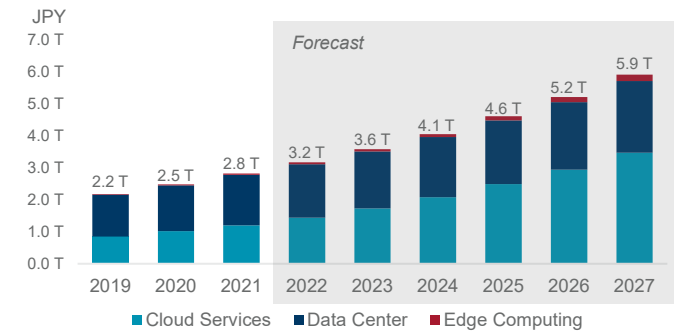
We expect cloud service operators to drive increasing demand growth over the next five years.

- **Amazon Web Services (AWS)** and **Google Cloud Platform (GCP)** jointly won a contract from Japan's Digital Agency for its cloud computing project to accelerate digital transformation of public infrastructure, following their prior mandate to support the Israeli Government. The mandate would expand into eight municipalities such as Kobe and Morioka. AWS and GCP both met the Agency's 350 requirements which include security, data management, and BCP such as Data Center locations and specifications.
- **Google Cloud Japan** has signed a strategic partnership with Mizuho Financial Group, the third-largest megabank in Japan in March 2022. Two companies will build a new digital marketing platform integrated with Google Analytics and digital financial services.

Outlook

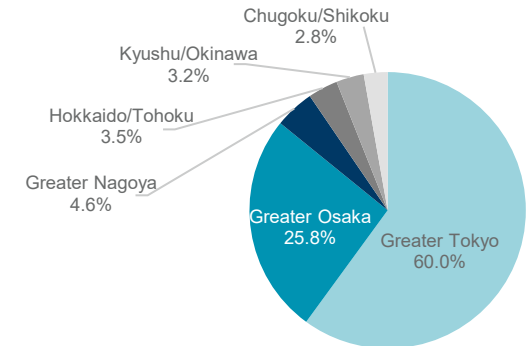
- Expect major cloud service operators to outperform. With the continued upgrades in connectivity and further cloud services options, expect impressive market performance leading to 2023 and beyond.
- About 60% of data centers are located in Greater Tokyo area with limited investments in the disturbed environment. Expect an ongoing geographical distribution beyond Tokyo, along with the government's new initiative to build the nationwide submarine cable infrastructure surrounding the coast of Japan.
- Development risk remains elevated for small players given large investment requirements, high entry barriers to access suitable land for development, and pricing risk of asset obsolescence, disruptive technology and high switching cost of tenants. Expect larger players, both domestic and global, to realize an economies of scale and secure the status of landlords in prime locations, lifting the scale of acquisitions overall at least until 2025.

DC MARKET FORECAST



Source: Nomura Research Institute

DC: GEOGRAPHICAL DISTRIBUTION (%)



Source: Fuji Chimera Research Institute

¹ Source: RCA.

² An industry-wide classification of four operator categories, including cloud service operators, is included in page 4.

KEY LEASE TRANSACTIONS

PROPERTY	SUBMARKET	TENANT	SIZE (SQ.M.)	SIZE (SF)	POWER (MW)	TYPE
Goodman Business Park	Greater Tokyo	ST Telemedia Global data Centre	60,000	645,600	60	Long-term Lease

KEY DELIVERIES: Q4 2021 - Q1 2022

PROPERTY	SUBMARKET	OPERATOR	SIZE (SQ.M.)	SIZE (SF)	POWER (MW)	DELIVERY DATE
OS3 (Phase I)	Greater Osaka	Equinix	3,070	33,045	10	Oct-21
TOK1 (Phase I)*	Greater Tokyo	AirTrunk	56,000	602,778	60	Nov-21
OS2x (Phase I)	Greater Osaka	Equinix	3,200	34,444	10	Nov-21
QC1	Kyushu	AT Tokyo	N/A	N/A	N/A	Dec-21
TY12x (Phase II)*	Greater Tokyo	Equinix	3,200	34,444	10	Dec-21
Tokyo	Greater Tokyo	Zoho	N/A	N/A	N/A	Feb-22
Osaka	Greater Osaka	Zoho	N/A	N/A	N/A	Feb-22

KEY PIPELINE PROJECTS UNTIL 2024

PROPERTY	SUBMARKET	OPERATOR	SIZE (SQ.M.)	SIZE (SF)	POWER (MW)	ESTIMATED DELIVERY
TY11 (Phase III)	Central Tokyo	Equinix	1,853	19,946	3 (est)	2022 Q2
Kaguro Building*	Greater Tokyo	Google	99,600	1,072,084	N/A	2022 Q3
Osaka Data Center 2 Bldg 2	Greater Osaka	Nomura Research Institute	N/A	N/A	N/A	2023 Q1
Shiroi DCC (Phase II)	Greater Tokyo	IJ	N/A	N/A	N/A	2023 Q2
Osaka Keihanna	Greater Osaka	Colt	42,000	452,084	45	Early 2023
CC3	Central Tokyo	AT Tokyo	32,000	344,445	N/A	2023 Q4
TKY01*	Greater Tokyo	Stack Infrastructure	N/A	N/A	18	2023 Q4
KIX13	Greater Osaka	MC Digital Realty	23,432	252,220	17	2023
ESR Cosmosquare (Phase 1)	Central Osaka	ESR	N/A	N/A	39	2023
TY1 (Phase 1)	Greater Tokyo	Princeton Digital Group	29,430	316,782	48.5	2024 Q2
Inzai (Phase I)*	Greater Tokyo	ST Telemedia Global Data Centres	N/A	N/A	N/A	2024 Q2
HND1	Greater Tokyo	Vantage	28,000	301,389	8	2024 Q2
KIX1	Greater Osaka	Vantage	45,000	484,375	5	2024 Q2
Tokyo Inzai 4	Greater Tokyo	Colt	N/A	N/A	N/A	2024

KEY SALES TRANSACTIONS: Q4 2021 - Q1 2022

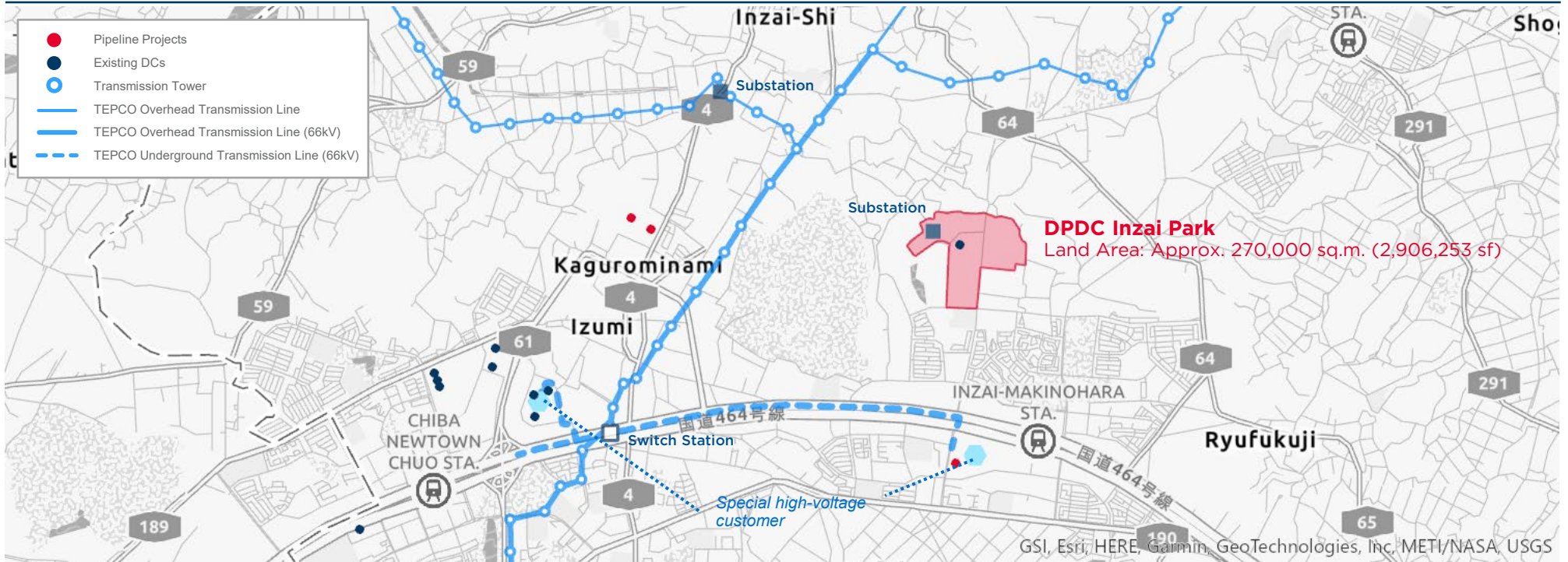
PROPERTY	SUBMARKET	SELLER / BUYER	SIZE (SQ.M.)	SIZE (SF)	SALE DATE
1-1 Ninomaru (Tsuzuki ward, Yokohama)	Greater Tokyo	Itochu Techno Solutions / Digital Edge	53,508	575,955	Dec-21

*Properties plotted on the map on page 4.

Data Center: Operator Classification

Business Category	Main Services	Overview	Data Center Ownership	Players
Sier (Systems Integrator)	<ul style="list-style-type: none"> Hosting Managed services 	The company's main business is IT services, including system development, operation and management services. It operates a DC business in conjunction with the manufacture and sale of servers and other equipment.	DCs are usually owned by the company for providing flexible services to its customers, but in recent years, an increasing number of DCs are rented from other companies.	NEC, Fujitsu, Nomura Research Institute, Itochu Techno-Solutions, TIS
Communication Carrier	<ul style="list-style-type: none"> Hosting Managed services Housing services 	The company provides DC services as an ancillary value to its own telecommunication line services, using former telecommunication station buildings and other facilities.	The former communications station building is being converted to a DC.	NTT Communications, KDDI, Colt, NTT East, NTT West
Cloud	<ul style="list-style-type: none"> Hosting 	The company provides computer resources such as servers via the Internet (i.e., cloud computing). The service is on-demand based on time and the amount needed, and it is currently experiencing rapid growth.	In Japan, renting DCs from other companies to provide services is more common than owning ones by themselves.	AWS (Amazon Web Services), Microsoft, Salesforce, Google, Oracle, IIJ
DC Specialized (Japanese)	<ul style="list-style-type: none"> Housing 	The company develops, owns, and leases DCs to tenants like a real estate leasing business.	The company develops, owns and operates its own large-scale DCs.	AT Tokyo, SAKURA Internet, IDC Frontier
DC Specialized (Foreign Capital)				Equinix, MC Digital Realty, AirTrunk

INZAI MARKET CLUSTER UPDATED



Note: properties in red are summarized in the table on page 3.

Source: TEPCO, Daiwa House Industry, Real Capital Analytics, Cushman & Wakefield