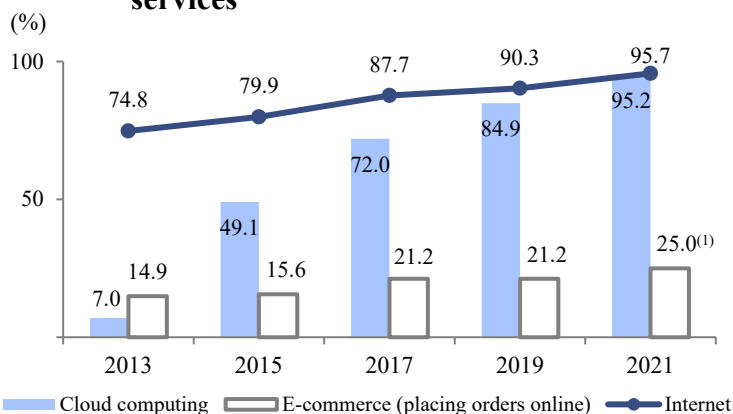




**Development of data centres**

**Figure 1 – Proportion of Hong Kong business establishments using Internet and related services**



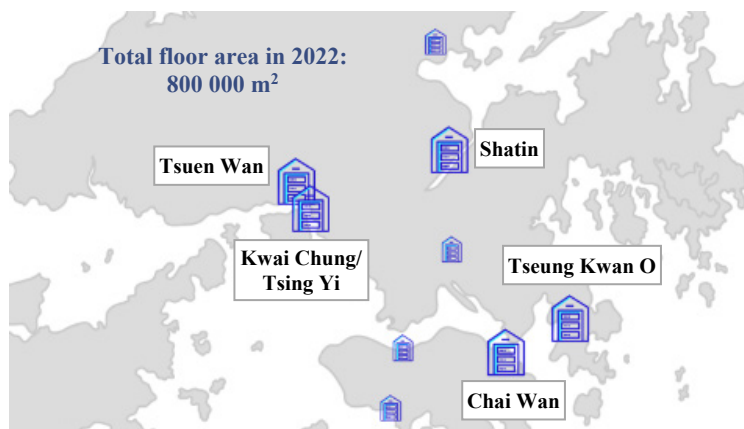
Note: (1) Survey conducted in 2020.

**Figure 2 – Global and Asia-Pacific rankings of data centre markets<sup>(1)</sup>, 2023**

Global ranking		Asia-Pacific ranking	
1	Northern Virginia <sup>(2)</sup>	1	Singapore
1	Portland <sup>(2)</sup>	2	<b>Hong Kong</b>
3	Singapore	3	Sydney <sup>(2)</sup>
4	<b>Hong Kong</b>	3	Seoul <sup>(2)</sup>
5	Atlanta <sup>(2)</sup>	5	Tokyo
5	Chicago <sup>(2)</sup>	6	Beijing
5	Silicon Valley <sup>(2)</sup>	7	Mumbai
8	Dallas	8	Shanghai

Notes: (1) The rankings were compiled based on factors such as market size, fibre connectivity, cloud availability, taxes, power and land price.  
(2) It indicated a tie in ranking.

**Figure 3 – Major locations of data centres<sup>(1)</sup>**



Note: (1) A breakdown of floor area by location is not available.

**Highlights**

- With the advent of data-intensive technologies such as big data analytics, artificial intelligence and cloud computing (i.e. using remote Internet servers to deliver computing resources and services), coupled with the launch of 5G network services and the rise of e-commerce during the pandemic, data centre is becoming one of the vital infrastructures to support Hong Kong’s digital economy and the wider economic development. Nowadays, the vast majority of businesses in Hong Kong are already Internet users. In 2021, 95.2% of the business establishments used cloud computing services to support their operations, significantly up from just 7.0% in 2013. Besides, about one in four reported using e-commerce to place orders online (**Figure 1**).
- Hong Kong is a hub for data centres from both global or regional perspectives. According to a 2023 global survey report on data centre markets, Hong Kong ranked fourth out of 63 surveyed markets globally, trailing behind two cities in the United States and Singapore, and it also came in second place in the Asia-Pacific region (**Figure 2**). While Hong Kong rated highly in terms of telecommunications infrastructure (e.g. fibre connectivity and cloud services) and its business-friendly taxation policies, the report cited a lack of available land as a key challenge for the development of data centres in Hong Kong.
- Currently, Hong Kong is home to about 60 data centres, involving a total floor space of about 800 000 square metres (“m<sup>2</sup>”) as at 2022. These data centres, mostly high-tier centres (i.e. with higher reliability and security level), tend to concentrate in places like Tseung Kwan O, Tsuen Wan, Kwai Chung/Tsing Yi, Shatin, and Chai Wan (**Figure 3**). According to the Hong Kong Innovation and Technology Development Blueprint, which was released by the Government in December 2022, an additional 700 000 m<sup>2</sup> would be available in the coming few years, bringing the total usable floor area to 1.5 million m<sup>2</sup> in 2026. It is projected that by that time the data centre market in Hong Kong will be worth US\$2.46 billion (HK\$19 billion), 76% higher than the estimated value in 2021.

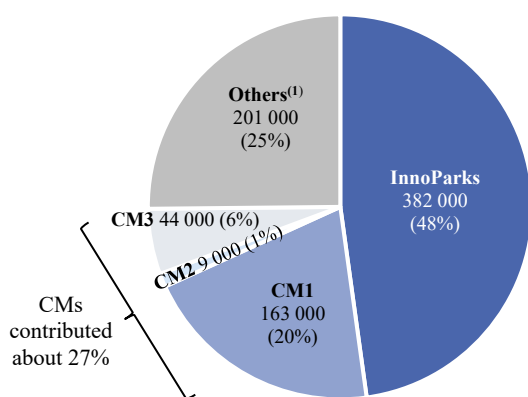
## Development of data centres (cont'd)

**Figure 4 – Cumulative number of applications for data centre CMs, since 2012**

	As at March 2017		As at December 2022	
	Received	Approved/ rejected <sup>(1)</sup>	Received	Approved/ rejected <sup>(1)</sup>
<b>CM1:</b> Waiver fee	30	18/0	50	37/1
<b>CM2:</b> Lease modification	3	1/0	7	5/0
<b>CM3:</b> Dedicated data centre sites	<ul style="list-style-type: none"> <li>Open tender sale of two sites (totalling about 3.7 hectares (37 000 m<sup>2</sup>)) in Tseung Kwan O in 2013 and 2018</li> </ul>			

Note: (1) The remaining applications were either under processing or withdrawn. Separate breakdowns for these two categories are not available.

**Figure 5 – Sources of data centre floor space (in m<sup>2</sup>), 2021**



Note: (1) Examples are commercial buildings, land or premises on the open market.

**Figure 6 – Energy consumption by key commercial sectors (in terajoules)**

Sector	2018	2020	% change
Restaurant	21 347	14 343	-32.8%
Retail	17 789	15 975	-10.2%
Office	16 812	16 235	-3.4%
Accommodation	7 375	5 596	-24.1%
Health	6 436	6 734	+4.6%
Education	4 646	4 472	-3.7%
<b>Data centre</b>	<b>4 063</b>	<b>5 343</b>	<b>+31.5%</b>
Others	43 754	45 814	+4.7%
<b>Total<sup>(1)</sup></b>	<b>122 222</b>	<b>114 513</b>	<b>-6.3%</b>

Note: (1) Figures may not add up to the total due to rounding.

Research Office  
Research and Information Division  
Legislative Council Secretariat  
25 May 2023  
Tel: 3919 3181

## Highlights

- The Government has put in place several concessionary measures (“CMs”) since June 2012 to boost the land supply for data centre development, including (a) waiving fees for converting parts of an eligible industrial building for data centre use (“CM1”); (b) accepting lease modifications for redeveloping industrial lots into high-tier data centres (“CM2”); and (c) selling suitable government sites dedicated to the development of high-tier data centres (“CM3”). Between 2012 and 2022, the Government received a total of 57 applications through CM1 and CM2, or an average of five to six applications per year (Figure 4). A Government-commissioned consultancy report in 2021 suggested that both incentive measures had been positive in promoting data centre development, but it also recognized the existence of certain constraints, such as limited number of industrial buildings suitable for conversion to data centres (e.g. in terms of power supply and building structure), and the considerable capital investment needed to redevelop an entire industrial lot into data centres. As for CM3, it is conceivably less restrictive than its two counterparts, but there were only two dedicated sites sold through open tender between 2012 and 2022, for a total of HK\$5.9 billion.

- Based on the latest available data in 2021, floor space supplied under CMs accounted for approximately 27% of the total floor space of data centres in Hong Kong. Meanwhile, the Hong Kong Science and Technology Parks Corporation, through its InnoParks (previously known as industrial estates), remained a major contributor (48%) to the supply of data centre space (Figure 5). There are currently 11 data centres in the Tseung Kwan O InnoPark and another in the Tai Po InnoPark, and they are operated by a number of local and multinational companies. The 2022 Policy Address further announced exploring the development of cavern data centres. The Government will also consider increasing relevant land supply through reclamation and in the Northern Metropolis over the medium to long term.

- Data centres are energy voracious, estimated to consume over 10 times the energy of a typical commercial office building with the same floor area. Latest available official data showed that energy consumption of data centres rose by 31.5% between 2018 and 2020 even when the energy use declined in the economy as a whole over the same period (Figure 6). The surge could partly be reflecting service demand amidst the pandemic, and has caused some stakeholders’ concerns over the environmental impact of data centres. The Building Environmental Assessment Method (“BEAM”) Society, a non-profit organization, has developed a Green Data Centres Practice Guide for reference and adoption by industry practitioners and Government departments, covering the best practices from design and construction to operation and maintenance. It has also developed the BEAM Plus Data Centres, a green building assessment tool for certifying the environmental sustainability performance of data centres.

Data sources: Latest figures from Census and Statistics Department, Electrical and Mechanical Services Department, Office of the Government Chief Information Officer, and Cushman & Wakefield.

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