

For information

Legislative Council
Panel on Information Technology and Broadcasting
Update on Data Centre Development in Hong Kong

Purpose

This paper briefs Members on the progress of the government's facilitation measures to promote data centre development in Hong Kong.

Background

2. Data centres are an essential information and communications technology (ICT) infrastructure for any digital economy, covering both technology and non-technology sectors such as financial services, communications, trading, logistics, transportation, retail and wholesale. Availability of high-performance and secure data centre services is also a key consideration for multi-national corporations (including those from the Mainland) to set up regional offices and headquarters in Hong Kong.

3. Hong Kong is well positioned to capitalise on the growing demand for data-related services and serve as a regional data centre hub. Over the years, we have built up a sophisticated external telecommunications infrastructure comprising 11 submarine optical fibre cable systems (providing about 90 terabits per second in capacity), 20 overland optical fibre cable systems and 11 satellite systems. Hong Kong is also among the best in the world in terms of Internet connectivity and bandwidth e.g. our mobile subscriber penetration rate exceeds 280% and our average Internet downloading speed has been among the top three fastest cities in the past few years. In the 2016 Data Centre Risk Index Report, Hong Kong was named one of the safest cities for data centres in Asia. In addition, Hong Kong's status as an international financial and commercial centre with about 4 000 regional headquarters and offices of leading multi-national corporations attracts significant international data flow.

Concessionary Measures for Data Centre Development

4. Having regard to the growing demand for data centres and our strengths as a business and communications hub, the Government introduced a number of time-limited concessionary measures in 2012 to facilitate the development of data centres in Hong Kong. Following a review in 2016, these concessionary measures were extended until further notice-

- (a) to exempt the waiver fees for issuing waivers for applications made to the Lands Department (LandsD) for change of use in parts of industrial buildings aged 15 years or above in “Industrial”, or “Other Specified Uses” annotated “Business” or “Commercial” zones to data centres of all tiers for the life-time of the existing building or until expiry or determination of the current lease, whichever is the earlier;
- (b) to accept lease modification (including land exchange) tailor-made for development of high-tier data centres, wholly or in conjunction with other uses, on existing industrial lots for the part of the development proposed for data centre use, instead of requiring modification up to the optimal uses and intensity that could possibly be allowed for the site where accordingly the premium chargeable for that part of the land to be used as data centre would also be based on the specific high-tier data centre use instead of an optimal development; and
- (c) to continue the arrangement that the Conditions of Sale for new sites be tailor-made for high-tier data centre use with specified gross floor area (GFA), including the disposal of dedicated sites in Tseung Kwan O (TKO).

5. To attract overseas and local enterprises to establish data centres in Hong Kong, the Office of the Government Chief Information Officer (OGCIO) has set up the Data Centre Facilitation Unit (DCFU) to provide one-stop support to interested enterprises. The DCFU liaises and works with the local data centre industry and relevant government departments on matters and measures to address the unique operational requirements of data centres. A thematic portal (www.datacentre.gov.hk) is available to provide useful information for the industry. The DCFU has so far handled over 700 enquiries from overseas and local corporations on setting up data centres in Hong Kong.

Change of Use in Existing Industrial Buildings

6. As at end-March 2020, the Government received a total of 40 applications for converting parts of existing industrial buildings for data centre use under the concessionary measure in paragraph 4(a) above. Out of these 40 applications, 31 have been approved (28 executed and three pending execution), five being processed and four withdrawn. The approved and executed applications involve a total internal floor area of some 139,000 m². Since April 2016, the LandsD in collaboration OGCIO have streamlined the procedures for processing applications for exemption with an aim to issue waivers in around two weeks from the date of receipt of valid applications¹.

7. Market response has been positive and the number of applications received has been stable over the past eight years. The number of applications has dropped slightly in 2018 and 2019, partly due to the unavailability of suitable existing industrial buildings for converting into data centre use (e.g. the more stringent requirements in power supply and building structure for data centre operation).

Redevelopment of Existing Industrial Lots

8. As at end-March 2020, the Government received six applications for lease modification for redevelopment of industrial lots under the concessionary measure in paragraph 4(b) above. Two applications were approved with the premium paid, which are expected to provide a total GFA of some 42 600 m² for high-tier data centre use. For the remaining cases, one application has been approved pending premium payment and another one under processing. Two applications were withdrawn after submission.

9. Given that redevelopment of an industrial lot is a long term and strategic commercial decision involving considerable upfront investment, the relatively smaller number of applications under this measure is anticipated. This notwithstanding, we consider that it would still be important to encourage owners of existing industrial buildings and investors to consider the redevelopment route which has the advantage of providing larger scale high-tier data centre facilities to meet the demands of the business community.

¹ In addition, starting from October 2018, the Government broadened the permissible uses of buffer floors in partial-converted industrial buildings to cover “computer / data processing centres” to incentivise owners to pursue partial conversion of lower floors of industrial buildings into non-industrial uses.

Disposal of sites for high-tier data centres

10. In 2012, the Government earmarked three sites in TKO for development as high-tier data centres. The first site of about one hectare (i.e. TKO Town Lot 122) was sold through open tender in October 2013 at \$428 million. The centre commenced operation in October 2017, with a GFA of about 44 000 m². The other two dedicated sites of about 2.7 hectares in size were sold as one site in December 2018 through open tender at \$5.456 billion, which could provide some 112 600 m² of GFA. This new data centre is expected to commence operation by phases starting from 2022.

Data Centre Development in Industrial Estates

11. Apart from disposal of industrial sites by government, including the decision in 2012 to earmark industrial sites in TKO for high-tier data centre development, the Hong Kong Science and Technology Parks Corporation (HKSTPC) also contributes to the provision of data centre facilities in Hong Kong in the past two decades by making use of its space in industrial estates (IEs). At present, there are 12 data centres in the Tai Po and TKO IEs (details of the operators at **Annex**), occupying a total floor space of about 356 000 m². The TKO IE now accommodates the largest data centre cluster in Hong Kong with 11 high-tier data centres established by a number of multinational and local enterprises.

12. HKSTPC is also developing the Data Technology Hub (DT Hub) in the TKO IE, which is expected to be completed later this year with a GFA of about 27 000 m². The DT Hub will provide a purpose-designed infrastructure for the data technology and telecommunications services industry, as well as general supporting facilities including a business centre, showcase arena and offices, etc., to facilitate industry collaboration on data centre development and data-related services, e.g. big data analytics and related technology.

Review of Government's Concessionary Measures

13. Currently, it is estimated that about 743 000 m² of data centre floor space is available in Hong Kong, and the supply will increase further through the concessionary measures as elaborated above. On the other hand, the demand for data centre services will undoubtedly continue to grow significantly due to the increasing use of cloud computing, big data analytics and artificial intelligence. According to a market forecast by Gartner in 2019, the worldwide public cloud revenue will grow 17% to US266.4 billion in 2020 and 56% to

US\$354.6 billion by 2022. In Hong Kong, the data centre market was worth US\$883 million in 2018 and is projected to grow at a five-year compound annual growth rate of 14%² to reach US\$1.7 billion by 2023.

14. Against the above, OGCIO engaged an external consultant in early 2020 to conduct a review on data centre development in Hong Kong, including the concessionary measures introduced by the Government and feedback from the industry. The review is expected to be completed in June/July 2020. The initial findings are highlighted below -

- (a) the accelerated growth of global and local data creation, smart city development and the advent of cloud computing, artificial intelligence, big data analytics, Internet of Things (IoT) and upcoming 5G network will continue to drive the demand for data centre facilities and services in Hong Kong;
- (b) there are nine new external submarine optical fibre cabling systems being planned, constructed, and put into service progressively from 2020 to 2023 which will further enhance Hong Kong's external telecommunications capacity to more than double the current capacity, thereby reinforcing Hong Kong's role as a regional telecommunications hub leading to the increasing demand for connectivity and data centres;
- (c) in recent years, international technology giants, Internet and cloud service providers are expanding their presence in cloud computing platforms and the data centre market in Hong Kong while local data centre and telecommunications operators are also looking for expansion in the market;
- (d) strategically located in the heart of Asia and connected to the Mainland, Hong Kong is well positioned as a global hub for trade, logistics and finance. Our robust network and reliable power infrastructure, plus our business friendly environment continue to provide a suitable ground for the development of data centre market in Hong Kong;
- (e) industry players considered that the current concessionary measures of the Government are effective in facilitating the development of data centres at all tiers and has demonstrated the Government's commitment in promoting the data centre industry in Hong Kong; and

² Source: Hong Kong Data Centre Report (Jan 2019), Structure Research

- (f) the three concessionary measures have given rise to roughly 26% of the existing supply of data centre floor space.

15. Overall, the local ICT sector is positive about the growing demand for data centres in Hong Kong. They also welcome the continual implementation of the concessionary measures to facilitate data centre development, particularly high-tier data centres.

Way Forward

16. Whilst the review has not yet been completed, we consider that the long-term demand for data centre services from local and overseas enterprises will continue to grow and it would be advisable for the Government to make available more industrial land for high-tier data centre development as well as encouraging redevelopment of existing industrial lots. We will update Members of the final consultancy report after the review is completed.

Advice Sought

17. Members are invited to note the content of this paper.

**Office of the Government Chief Information Officer
Innovation and Technology Bureau
May 2020**

Annex

Data Centres in Tai Po and Tseung Kwan O Industrial Estates

| | | Company |
|----|---------------------------------|--|
| 1 | Tai Po Industrial Estate | NTT Communications Corporation |
| 2 | Tseung Kwan O Industrial Estate | China Mobile International Limited |
| 3 | | China Unicom (Hong Kong) Operations Ltd |
| 4 | | Digital Savvis Investment Management HK Limited |
| 5 | | Global Switch Hong Kong Limited |
| 6 | | HKCOLO.NET Limited |
| 7 | | HKEx Property Limited |
| 8 | | HSBC Global Services (Hong Kong) Limited |
| 9 | | NTT Communications Corporation |
| 10 | | Telstra Global (HK) Limited (Site A) |
| 11 | | Telstra Global (HK) Limited (Site B) |
| 12 | | Towngas Telecommunications Fixed Network Limited |