

LEGISLATIVE COUNCIL BRIEF

MEASURES TO

FACILITATE THE DEVELOPMENT OF DATA CENTRES

INTRODUCTION

At the meeting of the Executive Council (“ExCo”) on 22 March 2016, the Council **ADVISED** and the Chief Executive **ORDERED** that the existing time-limited concessionary scheme approved by ExCo in 2012 to facilitate the development of data centres¹ through conversion of old existing industry buildings and lease modification of industrial lots², comprising the following measures, should continue until further review –

- (a) to exempt the waiver fees for issuing waivers for applications made to the Lands Department (“LandsD”) for change of use in parts³ of industrial buildings aged 15 years or above in “Industrial”, or “Other Specified Uses” annotated “Business” or “Commercial” zones to data centres of all tiers⁴ for the life-time of the existing building or until

¹ A data centre is a facility for housing computer systems, servers, telecommunications equipment, and associated support components in a secure and controlled environment. The support components, depending on scale, generally include electrical and mechanical facilities such as uninterruptible power supply, power distribution, standby power generation, heat rejection, computer room air-conditioning, fire suppression, environmental control and security control.

² An industrial building refers to a building lawfully erected on a lot which, under the lease conditions, shall not be used for any purpose other than for industrial or godown purposes or both. Such lots are referred to as “industrial lots”. Such industrial buildings do not include special factories such as those located in industrial estates, storage premises in container terminals, flatted factories built by the Hong Kong Housing Authority and special industries such as cargo handling uses, shipbuilding and repairing, oil storage and refining and production of associated chemical by-product, manufacture of polystyrene plastics, manufacture and storage of chlorine, hydrogen and textile chemicals, etc.

³ This does not preclude change in use of an entire industrial building into data centre use for the life-time of the existing building.

⁴ Data centres are classified into four tiers according to serviceability levels and building requirements. According to the Uptime Institute, the four tiers of data centres are classified as follows –

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 centres⁵, 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 (accordingly the premium to be 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 the remaining two dedicated sites in Tseung Kwan O (“TKO”) (i.e. TKO Town Lots 123 and 127).

JUSTIFICATIONS

Growing Demand for Data Centres in Hong Kong

2. The demand for data centre services, driven by the increasing use of cloud computing, will grow significantly in the coming few years. According to a latest market forecast⁶, the global cloud workloads will be more than triple from 2014 to 2019, and the global cloud traffic will increase at a compound annual growth rate of 33% over the same period. As a result, the global workloads for data centres will more than double from 2014 to 2019, and the global traffic will increase at a compound annual growth rate of 25% over the same period.

3. In Hong Kong, local cloud computing has also expanded quickly in recent years. A survey conducted in 2015 on local small and medium-sized

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- Tier 1 data centre has the lowest availability of 99.67% with basic site infrastructure;
 - Tier 2 data centre has availability of 99.75% with redundant site infrastructure;
 - Tier 3 data centre has availability of 99.98% with concurrently maintainable site infrastructure; and
 - Tier 4 data centre has availability of 99.99% with fault-tolerant site infrastructure including electrical power storage and distribution facilities. All operating components have to be duplicated, including power supply, backup generator, cooling equipment, etc.

⁵ High-tier data centres refer to data centres classified as Tier 3 or above.

⁶ Source: Cisco Global Cloud Index: Forecast and Methodology, 2014–2019.

enterprises⁷ showed that 83% of the respondents have been using or have planned to use cloud services in the coming years, compared to 55% in the same survey in the previous year. The 2016 Policy Address has re-affirmed the Government's commitment to smart city development in Hong Kong and the formulation of big data applications policy. We expect this will further increase local demand for data centres in the next few years.

Regional Competition

4. Hong Kong is the prime location for setting up data centres in Asia Pacific region and a number of multi-national corporations have set up their data centres in Hong Kong. The Data Centre Risk Index⁸ ranked Hong Kong as the safest Asian city for data centres three years in a row from 2011 to 2013. Moreover, the International Data Corporation ranked Hong Kong as the most suitable location in Asia Pacific for setting up data centres in 2013.

Short-term Land Supply for Data Centres in Hong Kong

5. The Government is committed to promoting the development of data centres in Hong Kong by providing suitable land for high-tier data centres. Since 2010, the Hong Kong Science and Technology Parks Corporation ("HKSTP") has made available some 19 hectare ("ha") of land in TKO and Tai Po Industrial Estates for developing high-tier data centres. In addition, the Office of the Government Chief Information Officer ("OGCIO") has implemented the time-limited concessionary scheme mentioned in paragraph 1 above to encourage development of data centres by conversion of old existing industrial buildings and redevelopment of industrial lots. With these measures and other data centre developments in the market, the total supply of data centre floor space has increased from about 300 000 m² in 2012 to about 460 000 m² of GFA in 2015⁹.

6. As regards other land supply, the Government in 2012 reserved three sites of about one ha each in TKO for high-tier data centre development, namely: TKO Town Lots 122, 123 and 127. The first site (TKO Town Lot 122)

⁷ Source: Hong Kong Small and Medium-sized Enterprises (SMEs) Cloud Adoption, Security & Privacy Readiness Survey, by Internet Society Hong Kong and the Cloud Security Alliance Hong Kong and Macau Chapter, in May 2015.

⁸ Source: Data Centre Risk Index published by Cushman & Wakefield and Hurleypalmerflatt.

⁹ Source: Data Centre in Hong Kong in 2012 and 2015 by Colliers International.

was sold in October 2013. For the second and third sites (TKO Town Lots 123 and 127), ExCo approved the Outline Zoning Plan (“OZP”) for data centre use on 1 December 2015 (**Annex A**). We are actively working with the relevant departments to expedite the disposal of these sites.

7. The conversion of old industrial buildings would be a viable option for data centre operators. Due to some specific requirements for facilitation for data centres, such as high headroom, heavy floor loading, and proximity to power station, not all industrial buildings are suitable. With recent technology advancement on modular data centre, however, more industrial buildings can become suitable for such conversion usage.

Long-term Land Supply for Data Centres in Hong Kong

8. Whilst some operators may be interested in bidding for government sites put up for public sale or acquiring suitable sites in the private property market that permit data centre among other uses to develop data centres, the overall industry response is not enthusiastic. This is because only a few sites are technically suitable for data centre development, and competing uses (such as offices and other commercial uses) are likely to out-bid data centres in financial terms. In the long term, we plan to reserve more sites for data centre development in New Development Areas (“NDAs”)¹⁰.

Facilitation Measure (1): Waiver Fee Exemption for Change in Use of Parts of Existing Industrial Buildings

9. To encourage the industry to make use of old existing industrial buildings for data centre development, we introduced in June 2012 a time-limited facilitation measure under which, for applications for change in use to data centre use for parts¹¹ of existing industrial buildings aged 15 years or above in “Industrial”, or “Other Specified Uses” annotated “Business” or “Commercial” zones, the Government would exempt the waiver fees for issuing waivers chargeable according to standard rates for using existing industrial buildings for information technology and telecommunications industries (“IT&T”) (which include data centres). The waiver may be valid for the lifetime of the existing building or until the expiry

¹⁰ These NDAs include Kwu Tung North, Fanling North and Hung Shui Kiu.

¹¹ This does not preclude change in use of an entire industrial building into data centre use for the life-time of the existing building.

or determination of the current lease, whichever is earlier. This concession would apply to data centres of all tiers.

10. As at end-February 2016, we have received 20 applications for converting parts of existing industrial buildings under this concessionary scheme, out of which 14 applications have been approved (13 executed and one pending execution), five under processing and one withdrawn. The 13 executed waivers producing a total internal floor area (“IFA”) of about 67 640 m² for data centre use. Compared with eight waivers for converting industrial buildings for IT&T uses before the introduction of the measure in 2012, the response demonstrates that the industry welcomes the scheme. Having regard to the positive market response, we will continue with this measure after 31 March 2016.

11. OGCIO will continue to support LandsD in verifying applications under the scheme and render necessary professional advice.

Facilitation Measure (2): Tailor-made Lease Modifications of Industrial Lots for Data Centre Use

12. Apart from the above, we also introduced a facilitation measure for development of high-tier data centres, wholly or in conjunction with other uses and irrespective of zoning, involving lease modification (including land exchange) of industrial lots (including redevelopment of existing buildings, development of new buildings and change of use of new buildings). Under this measure, the Government would accept lease modification (including land exchange) tailor-made for development of high-tier data centres on existing industrial lots and allowing a lower development intensity under the lease for the part of the development proposed for data centre use, instead of requiring modification up to the optimal uses (e.g. asking for modification to permit the wide user of “non-industrial” accommodating a full range of operations) and intensity that could possibly be allowed for the site. Accordingly, the premium to be 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 one would reasonably envisage and one attracting higher premium had the lease specified a user like “non-industrial”. That is, the premium payable for such lease modification, if approved, will reflect the amount of GFA to be specified in the modified lease for high-tier data centre

use (for the avoidance of doubt, the premium assessment for the data centre portion would assume the development of a high-tier data centre in order to encourage the development of such, even if a low-tier data centre is eventually operated on site). The data centre part of the proposed development has to reach at least 40% of the maximum development intensity allowed for the site or a plot ratio of 2.5, whichever is the higher, which will be specified as the minimum GFA in the modified lease. The premium on the non-data centre part, if any, of the proposed development will be assessed according to what is specified or permitted in the modified lease as the optimal use of that part, according to the usual practice.

13. As at end-February 2016, we have received and completed one application for lease modification for redevelopment of an industrial lot for providing a total GFA of 9 126 m² for high-tier data centre use.

14. Notwithstanding that the effectiveness of this measure has yet to be fully tested as shown by the small number of applications received so far, we consider it necessary to continue with this facilitation measure for the time being given the uncertain timeframe for disposal of the two remaining data centres sites in TKO (see paragraph 6 above). Given the land supply situation in Hong Kong, we consider that the facilitation measure is useful in encouraging companies and investors, e.g. those from industries such as telecommunications, e-commerce and social media, to build data centres in Hong Kong for their own use or leasing to other businesses. We will step up effort in promoting this facilitation measure to the industry.

Facilitation Measure (3): Condition of Sales for Dedicated Sites for Data Centre Use

15. In 2012, ExCo approved to dispose of suitable government sites including three dedicated sites at TKO Town Lots 122, 123 and 127 for high-tier data centres. The first site (i.e. TKO Town Lot 122) was sold in October 2013 at a price of \$428 million, which would provide about 44 000m² (GFA) for data centre use in 2017. As mentioned in paragraph 6 above, the Government is aiming to put the two remaining sites (i.e. TKO Town Lots 123 and 127) to sale within the coming few years.

16. Following the same policy and land sale approach to dispose the first site, we will continue with the arrangement that the conditions of sale be tailor-made for high-tier data centre with GFA specified for high-tier data centre use for disposing the remaining two sites at TKO Town Lots 123 and 127.

IMPLICATIONS

17. The proposals have economic, financial, civil service, environmental and sustainability implications as set out at **Annex B**. The proposals are in conformity with the Basic Law, including the provisions concerning human rights. They carry no productivity, family or gender implications.

PUBLIC CONSULTATION

18. The provision of land for high-tier data centres has been a topical issue in the information and communications technology (“ICT”) industry. Members of the Legislative Council (“LegCo”) have expressed concerns about Hong Kong’s competitiveness if we are unable to find lands for data centre business in the long term.

19. The industry has expressed concern that if land is not provided in Hong Kong at viable prices, data centres would go to other places in the region. The scarcity of land for data centre development may thus drive away business opportunities and undermine Hong Kong’s position as an ICT hub.

PUBLICITY

20. We will issue a press release. A spokesperson will be made available to answer media enquiries.

BACKGROUND

21. At the ExCo meeting held on 10 January 2012, it was agreed that a time-limited scheme be introduced to promote the development of data centres. The scheme comprised the following measures –

- (a) For change in use to data centre use for parts of industrial buildings aged 15 years or above in “Industrial”, or “Other Specified Uses” annotated “Business” or “Commercial” zones, the Government would waive the fees for issuing waivers chargeable according to standard rates for using existing industrial buildings for IT&T industries (which include data centres). This concession would apply to data centres of all tiers;
- (b) For development of high-tier data centres – wholly or in conjunction with other uses, and irrespective of zoning, involving lease modification (including land exchange) on existing industrial lots (including redevelopment of existing buildings, development of new buildings and change of use of new buildings), the Government would assess the premium for the lease modification on the basis of “high-tier data centre use only” for the part of the proposed development for data centre use; and
- (c) For the disposal of suitable government sites for data centre use, including the sites in TKO announced in the 2011-12 Policy Address, the Conditions of Sale would be tailor-made for high-tier data centre use and the tender reserve price would be assessed on the basis of the GFA for high-tier data centre use (irrespective of whether the actual development includes exclusively high-tier data centres or a mix of high- and low- tier data centres) and the GFA for other non-data centre permitted uses, if any.

22. The OGCIO has set up a Data Centre Facilitation Unit and launched a dedicated portal (datacentre.gov.hk) since July 2011 to provide one-stop support services and information on relevant policy and technical issues to overseas and local enterprises which are interested in setting up data centres in Hong Kong. We will provide liaison support with government departments

on matters such as statutory processes and compliance requirements, and disseminate useful information through the portal.

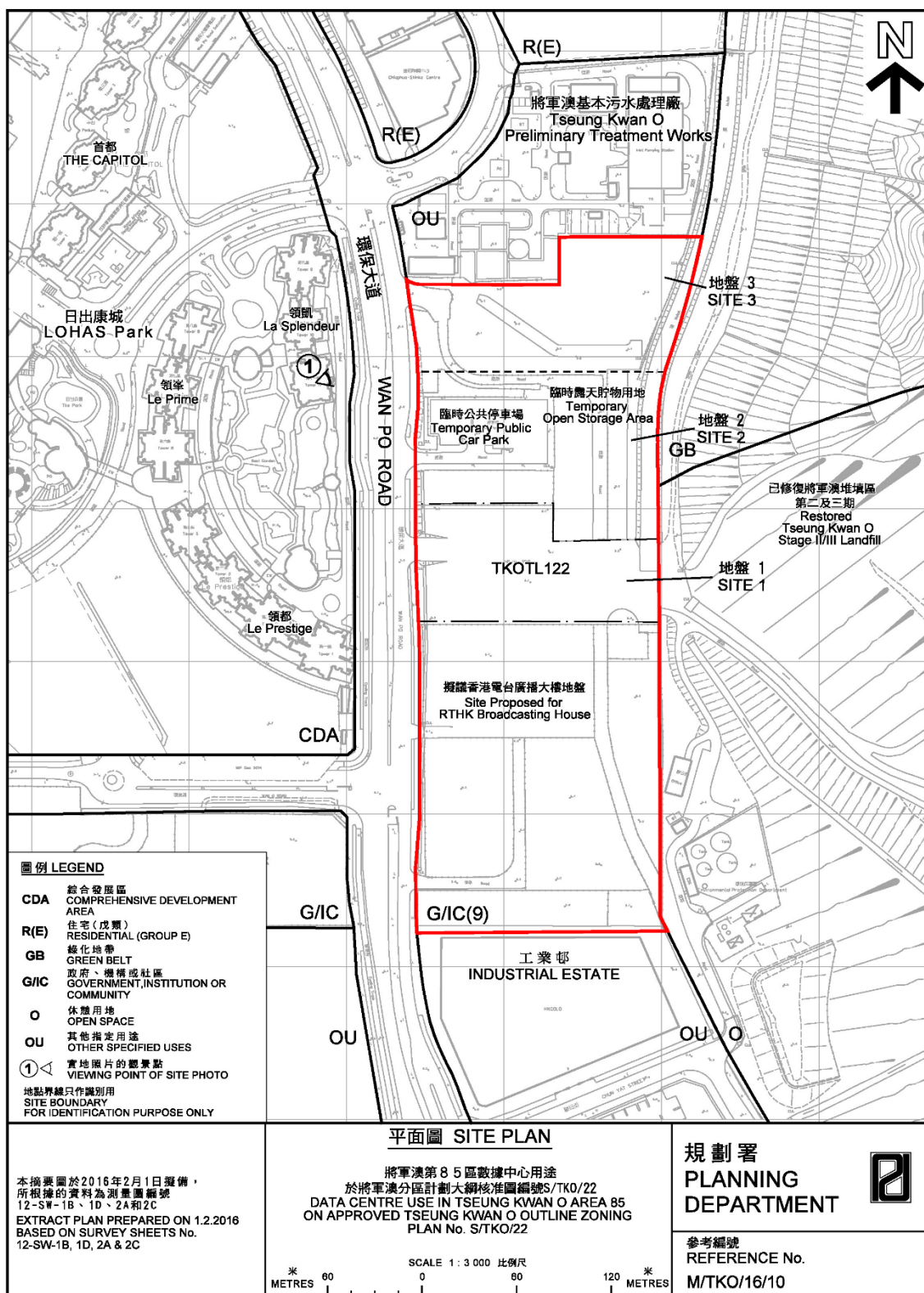
23. Hong Kong has a robust Internet infrastructure that supports the development of data centres. According to figures released in the third quarter of 2015, Hong Kong's average peak Internet connection speed at 101.1 Mbps and average Internet connection speed at 15.8 Mbps were among the fastest in the world. Hong Kong's household broadband penetration rate, reaching 83.4 per cent in October 2015, is among the highest in Asia. Furthermore, the Hong Kong Internet Exchange ("HKIX"), a public high-speed Internet exchange point in Hong Kong that facilitates easy interconnection among Internet Service Providers without the need to route internet traffic through the United States, is a key infrastructure to maintain Hong Kong as an Asian Internet hub by keeping intra-Asia Internet traffic within Asia. At present, HKIX helps more than 98% of intra-HK Internet traffic stay within Hong Kong. Mainland China, Taiwan, Korea, Japan, Singapore and other Asian countries have also joined the Internet exchange service with direct connection with Hong Kong. With funding support of OGCIO, HKIX enhanced its capacity and capability in 2014 to cater for the increasing Internet traffic.

ENQUIRY

24. Enquiries relating to this brief may be addressed to Mr Ricky Chong, Principal Assistant Secretary for Innovation and Technology, at 2810 2489 or Ms Jenny Woo, Chief System Manager (Industry Facilitation)2/OGCIO, at 2810 3295.

Innovation and Technology Bureau
Office of the Government Chief Information Officer
30 March 2016

Annex A



IMPLICATIONS OF THE MEASURES

Economic Implications

Data centre is an important technology infrastructure in a knowledge-based economy. It supports the operation of a wide range of economic sectors in Hong Kong, including finance, trade, logistics, e-commerce, cloud computing services, etc. The measures will facilitate the development of more data centres in Hong Kong, thereby helping to improve our competitiveness as an international business and financial services hub.

Financial Implications

2. The extension of the concessionary scheme will lead to revenue forgone. The potential loss in revenue depends on the market response and cannot be assessed at this stage. Based on past applications for change of use in parts of industrial buildings for data centre use, the amount of revenue forgone should not be too significant. The assessment of lease modification premium on the “actual use” (vs “optimal use”) and allowing a lower development intensity (i.e. at least 40% of the maximum development intensity or a plot ratio of 2.5, whichever is higher, as the minimum specified GFA) differs from the established assessment mechanism and will lead to notional revenue forgone. The revenue implications depend on the development proposal (high-tier or low-tier data centre, the proportion between each and whether a less-than-optimal development intensity is proposed), and the lease conditions of the lot in question.

Civil Service Implications

3. LandsD would redeploy the existing resources within their current establishment to handle future applications. For OGCIO, the workload arising from implementing the data centre-specific scheme will be absorbed by existing staff resources. No additional manpower is required for both departments.

Environmental Implications

4. Data centres have been operating in Hong Kong for a long time and are environmentally clean. Data centre operators are keen to adopt green ICT measures to cut down power consumption as far as possible. Custom-built data centres on redeveloped sites can take full advantage of the latest environmental technology to reduce power consumption. As an administrative measure, we will request applicants seeking to apply for the concessionary scheme to submit an energy saving plan, with reference to the “Green Data Centre Practices” issued by OGCIO, together with their applications.

Sustainability Implications

5. The measures will continue to facilitate the development of the data centre sub-sector, in particular the high-tier data centres which have more stringent requirements on sites. There are no major sustainability implications other than those set out in the preceding paragraphs.