

For discussion
on 15 December 2015

Legislative Council
Panel on Commerce and Industry

Further Development of Hong Kong Science Park

PURPOSE

This paper reports to Members the plan to develop new research and development (R&D) buildings by optimising the land use of Hong Kong Science Park (HKSP) and seeks Members' support for the proposed financing arrangements for the project.

BACKGROUND

Policy Commitments

2. In the 1997 Policy Address, the then Chief Executive set out a vision to make Hong Kong a regional centre for innovation and technology (I&T). One of the plans was to develop HKSP in three phases over 15 years on a 22-hectare site at Pak Shek Kok. Phase 1 at Tai Po Town Lot (TPTL) No. 171 with an area of 8 hectares was completed in 2004. Phase 2 at TPTL No. 182 with an area of 7.7 hectares was completed in stages from 2008 to 2011. Construction of Phase 3 at TPTL No. 204 with an area of 6.24 hectares commenced in 2011 and is scheduled to be completed in early 2016.

3. In 2014, in conjunction with the Hong Kong Science and Technology Parks Corporation (HKSTPC), the Government reviewed the utilisation and long-term development direction of HKSP and Industrial Estates (IEs) (the Review). HKSTPC reviewed global technology trends and the areas where Hong Kong had a competitive edge; and identified gaps in the local I&T ecosystem by benchmarking against best overseas practices and policies. Relevant stakeholders from the Government, industry, academic and research sectors were engaged in this exercise. With regard to the provision of infrastructure, the Review recommended, among other things, that HKSTPC should: (a) maximise the development potentials of the existing HKSP site by constructing new buildings to

increase the gross floor area (GFA); and (b) use the land in the three IEs more efficiently to support science, I&T based industries which would bring wider benefits to Hong Kong.

4. In the 2015 Policy Agenda, it was announced that we would implement the recommendations of the Review, including: strengthening the role of HKSTPC in developing the I&T ecosystem; suitably raising the development density of HKSP to optimise land use in the park for the development of new R&D facilities; and proceeding with the formulation of a new IE policy to enhance the value chain of the I&T industries in Hong Kong and further revitalise the IEs. We believe that implementation of these measures would further promote the development of I&T, boost the development of new technologies and attract more high-tech companies to establish a presence in Hong Kong.

5. Insofar as the IEs are concerned, we have already revised the admission criteria and business model of the IE Programme in early 2015. This Panel was consulted on 21 April 2015 and noted that in future, HKSTPC would mainly build and manage specialised multi-storey industrial buildings for rental to multi-users belonging to the I&T industries instead of granting the sites to single users for building their own factories. HKSTPC is now carrying out detailed study on the economic case and relevant financial arrangements for two pilot projects in the Tseung Kwan O IE with a total area of 3.25 hectares. Having regard to the global trend of re-establishing local manufacturing industries, in particular high-end manufacturing based on artificial intelligence, data analysis and Internet of Things, it is suggested that the first two projects should target at information and telecommunications technology and advanced manufacturing using robotics technologies. Given that HKSTPC would still need a few more months to complete the relevant studies, we would submit the corresponding funding proposals separately, tentatively in the first half of 2016. This paper will focus on the expansion plan of HKSP, which is elaborated in the following paragraphs.

Current Position of the Science Park

6. HKSTPC is a statutory body established in 2001 with a public mission to facilitate the establishment and the nurturing of a world-class technology community dedicated to applied R&D in Hong Kong. The Government is the sole shareholder of HKSTPC, which is governed by a Board of Directors appointed by the Government. HKSTPC operates

and manages HKSP, three IEs at Tai Po, Yuen Long and Tseung Kwan O, and the InnoCentre at Kowloon Tong.

7. Phase 1 of HKSP, with a GFA of 120 000 m², was constructed under the Public Works Programme at a total cost of \$2,907 million and completed in 2004. Phase 2 with a GFA of 105 000 m² was constructed by HKSTPC at a total cost of \$4,296 million and completed in 2011¹. Phase 3 with a GFA of 105 000 m² is scheduled to be completed in early 2016 at a total estimated cost of \$4,878 million². On completion of all three phases, the total GFA of HKSP will be 330 000 m².

8. As at the end of October 2015, the occupancy rates for Phase 1 and Phase 2 are 94% and 86% respectively. For Phase 3, with about 75% of the GFA recently completed, the occupancy rate stands at 67%. There are some 570 local, Mainland and overseas R&D companies operating in HKSP, employing over 11 500 persons, of which about 8 100 persons (around 70%) are engaged directly in R&D. At the current take-up rate, it is expected that all three phases of HKSP will be fully occupied by 2017/18.

Roles of the Science Park in the local I&T Ecosystem

9. HKSP is now our flagship technology infrastructure which provides facilities, services and a dynamic environment that enable companies to nurture ideas, innovate and develop. HKSP has been offering its facilities and support services through a clustering strategy since its establishment. The five technology clusters are: biomedical technology, electronics, green technology, information and communications technology, and material and precision engineering. There are a number of technology support centres in HKSP, such as the Integrated Circuits Design Centre, Intellectual Property Servicing Centre, Probe and Test Development Centre, Wireless Communications Test Laboratory and Biomedical Technology Support Centre, offering state-of-the-art laboratory facilities to assist the R&D work of technology companies.

¹ The approved development cost of Phase 2 (except Building 20) was \$3,914 million and was financed by a mix of Government equity (62%), Government loan (27%) and HKSTPC's internal resources (11%). Building 20 of Phase 2 was financed by HKSTPC's own resources at \$382 million.

² The development cost of Phase 3 was financed by a mix of Government equity (30%), Government loan (25%), commercial loan guaranteed by the Government (35%) and HKSTPC's internal resources (10%).

10. As reported to this Panel in April 2015, pursuant to the recommendations of the Review, HKSTPC will take a more proactive role in promoting the development of I&T in addition to the provision of infrastructure, facilities and support services. HKSTPC will: strengthen its connection with innovators, government agencies, investors and the industry; foster collaboration with international and local universities and research institutions across different technological disciplines; and continue to promote innovative development by creating an inspiring and vibrant ecology and offering custom services to I&T companies at different R&D stages. To achieve these objectives, HKSTPC has rolled out various new initiatives, for example, the Corporate Venture Fund recently launched in July 2015 to encourage private sector investment in technology start-ups, and the establishment of three over-arching cross-disciplinary platforms - namely healthy ageing, robotics and smart city - to facilitate integration of technologies in innovative products.

11. To nurture technology-based start-ups, HKSTPC provides three incubation programmes, namely Incu-Tech for new technology start-ups, Incu-Bio for biomedical technology start-ups and Incu-App for those involved in web and mobile technology. As at October 2015, 221 firms were enrolled on HKSP's incubation programmes while 375 start-up companies had graduated from them. To help nurture promising start-ups from its incubation programmes, HKSTPC has launched the Leading Enterprises Acceleration Programme to provide dedicated assistance in marketing skills, business and corporate development.

JUSTIFICATIONS

Policy Perspective

12. The Government is committed to developing Hong Kong into a knowledge-based economy and an I&T hub in the region. The objective is to create a vibrant ecosystem for the government, industry, academia and research sector to interact under a favourable environment with excellent software and hardware support for development and application of technology. To this end, provision of world-class technological infrastructure has all along been one of our core strategies in achieving this objective. However, as mentioned in paragraph 8 above, it is estimated that the supply of R&D office space in HKSP can only meet the demand up to 2017/18. With the Government's strong commitment to using I&T to upgrade industries and stimulate economic growth, there is clearly a strong case for Hong Kong to continue to invest in I&T

infrastructure.

13. From the national development perspective, since the reforms and opening-up of the Mainland, the pace of economic integration between the Mainland and Hong Kong has become even faster. Any change in the policies and development focus in the Mainland would have tremendous impact on different economic sectors of Hong Kong, including the I&T sector. It is noted that the Central People's Government will put strong emphasis on innovation according to the proposals on the National 13th Five-Year Plan recently announced in October 2015. Along with specific development plans, such as the "Made in China 2025", the Mainland would upgrade from the old development model, which was characterised by polluting and low-end manufacturing, towards high technology and high value-added advanced manufacturing. The demand and intensity of R&D activities of Mainland companies would be further increased. There is no doubt that this will allow us to benefit from the Mainland's development if we take the necessary steps to put in place the essential infrastructure in time.

14. Furthermore, dynamism is required for a healthy science park ecosystem. If no new space is available, the number of new companies coming in would decrease, and HKSP would end up with the existing companies with little momentum for further development. Over time, the interaction between companies in HKSP would diminish, and the ecosystem would ossify. In order to cope with the aforementioned development trend and ensure continuing development of HKSP, we must continue to expand HKSP. The current proposal is to expand the existing HKSP by optimising the use of the remaining vacant site and increasing the development parameters for the construction of new R&D facilities in three stages³. Members of the I&T community generally share the same view and have expressed strong support for the continued expansion of HKSP.

Economic Case

15. To take forward Stage 1 of the proposed Science Park Expansion Programme (SPX1), HKSTPC has engaged consultants⁴ to

³ The proposed Science Park Expansion Programme is to be conducted in 3 stages. Stage 1 will involve the development of 2 buildings within the Phase 3 site for completion by 2020. Stages 2 and 3 are under planning.

⁴ ICF Consulting Services Hong Kong Ltd was responsible for the EBA while Leigh and Orange Limited is responsible for the TFS.

carry out an Economic Benefits Analysis (EBA) and a Technical Feasibility Study (TFS), which were both completed in September 2015. The results of the EBA show that HKSP has made significant contributions to the I&T industries. The consultants estimated that the companies located at HKSP currently create a value added of some \$10.8 billion per annum (including direct, indirect and induced impacts), accounting for over 0.4% of Hong Kong's overall gross domestic product (GDP) in 2014⁵. More significantly, HKSP has directly supported over 10 000 jobs. In terms of the proportion of R&D personnel (full-time equivalent) to total persons engaged, over 60% of the staff of HKSP's tenants (excluding the R&D Centres, Government agencies and non-profit organisations) are directly engaged in R&D. It represents the largest concentration of business-related R&D personnel (capturing over 50% of the business-related R&D employment) in Hong Kong.

16. There are compelling economic reasons to take forward SPX1, both in terms of tangible economic benefits as well as wider social and economic benefits. The consultants have estimated that the economic contribution of HKSP as a whole to Hong Kong would increase from \$10.8 billion today to \$14.9 billion (when Phases 1 to 3 fully are occupied) and further increase to \$19.0 billion (when achieving full occupancy of Phases 1 to 3 and SPX1). Total employment (comprising direct, indirect and induced employment) brought by HKSP is expected to increase from 17 740 today to 24 310 (when Phases 1 to 3 are fully occupied), and further to 30 650 (when achieving full occupancy of Phases 1 to 3 and SPX1).

17. In addition to the aforementioned tangible economic benefits, HKSP is crucial in performing the important functions of: attracting foreign investment; incubating I&T talents and start-ups; helping I&T companies to scale up; and building up linkages between companies and researchers working in complementary fields. At present, about 37% of the tenants in HKSP are from the Mainland (12%) and the rest of the world (25%), including most of the largest firms in the Park. A significant portion of them were attracted to Hong Kong owing to the facilities and value-added services offered by HKSP. As mentioned above, HKSP is also a key provider of technology incubation programmes with 221 firms currently enrolled on its programmes. In 2014/15, these companies attracted some \$200 million from angels and venture capitalists. Based on a survey conducted by the consultants, 61% of the tenants reported an increase in employment since moving to

⁵ Hong Kong's GDP in 2014 is \$2,256 billion.

HKSP. Nearly half of the tenants considered that HKSP had a vital or very significant impact on the overall performance of their business, particularly in establishing links with business partners and improving image and profile.

DEVELOPMENT PLAN FOR SPX1

Proposed Scope and Programme

18. The site for SPX1 covers about 1.18 hectares on the vacant western corner of the Phase 3 site and the existing transport terminus. The scheme consists of two building blocks (14-storey and 15-storey) over a podium and a single storey basement below, with a total GFA of about 73 760 m² (or a total construction floor area (CFA) of about 103 264 m²). The additional GFA was allowed in the modification of the Phase 3 land lease i.e. TPTL 204 which was approved by the Tai Po District Lands Conference on 20 October 2015 with increases in the maximum GFA from 105 000 m² to 180 000 m², the maximum site coverage from 30% to 50% and the maximum building height restriction from 47 mPD (metres above the Hong Kong Principal Datum) to 75 mPD at the site for SPX1. The master development plan of HKSP including SPX1 is at **Annex A**. The estimated development cost is \$4,428 million at Money-of-the-Day (MOD) prices (or \$3,637 million at March 2015 price level). This is equivalent to \$35,224 per m² of CFA at March 2015 price level (or \$42,880 per m² of CFA at MOD prices). The cost estimate has been checked by Architectural Services Department and is within the acceptable price range for normal R&D/Office Buildings.

19. If we can secure funding approval from the Finance Committee (FC) in the first quarter of 2016, construction will commence in the second half of 2016 for completion by 2020.

Proposed Financing Arrangements

20. The proposed financing structure for the project is as follows —

	%	\$million
Government equity	65	2,878
Commercial loan guaranteed by Government	25	1,107
HKSTPC's internal resources	<u>10</u>	<u>443</u>
Total	<u>100</u>	<u>4,428</u>

21. The Government will provide financial support up to 90% of the development cost, made up of equity injection (65%) and contingent liability in relation to a commercial loan with Government guarantee (25%). It will be necessary for the Government to guarantee repayment of the commercial loan and the interest arising therefrom to enable HKSTPC to secure the loan and obtain reasonably advantageous terms. HKSTPC will also finance 10% of the project cost with its internal resources to demonstrate its commitment to SPX1. This is similar to the funding arrangement for HKSP Phase 3.

22. In determining the above financing structure, we have taken into account HKSTPC's financial position, projected income and expenditure in the coming years, and planned capital works projects and new initiatives in coming years, including the projects under the Revised IE Programme as mentioned in paragraph 5 above. HKSTPC's cashflow projection is at **Annex B**.

23. The project itself entails a maximum financial exposure of \$3,985 million for the Government, comprising Government equity injection of \$2,878 million in 2016/17 and commercial loan with Government guarantee of \$1,107 million. The project has no recurrent financial implications for the Government. Given that the final project cost may be different from the estimated development cost of \$4,428 million due to various factors such as change in economic conditions, fluctuation of labour cost and cost of construction materials during the construction period, HKSTPC will be required to exercise due care to control the overall project cost. With a view to containing the Government's financial exposure to HKSTPC in relation to the project, the amount of equity injection from the Government will be capped at \$2,878 million. Should the project cost eventually exceed the amount, the Government will provide no further funding support and HKSTPC is

expected to resort to its own means to identify project cost savings and seek extra funding means.

ADVICE SOUGHT

24. Members are invited to support the development plan and proposed financing arrangements for SPX1 (as set out in paragraph 20 above). Subject to Members' agreement, we will proceed to seek approval from FC.

Innovation and Technology Commission
Innovation and Technology Bureau
December 2015

Master Development Plan of Science Park



Cash Flow Projection of the Hong Kong Science and Technology Parks Corporation (in \$ million)

	<u>2016/17</u>	<u>2017/18</u>	<u>2018/19</u>	<u>2019/20</u>	<u>2020/21</u>	<u>2021/22</u>	<u>2022/23</u>	<u>2023/24</u>	<u>2024/25</u>	<u>2025/26</u>	<u>2026/27</u>	<u>2027/28</u>	<u>2028/29</u>	<u>2029/30</u>
Opening cash balance	670	2,126	2,506	726	26	32	238	607	1,034	521	571	669	786	284
Net cash flow of HKSTPC before SPX1 financing	1,002	(721)	144	(725)	178	245	411	469	(370)	187	230	247	231	275
Net cash available for funding SPX1 construction	1,672	1,405	2,650	2	204	278	648	1,077	664	708	801	915	1,017	559
Development cost of SPX1* (Note 1)	(352)	(897)	(1,998)	(1,047)	(134)									
Government equity injection	806	1,998	74											
Government loan														
Commercial loan guaranteed by the Government				1,107										
Repayment of commercial loan (principal/interest)				(36)	(38)	(40)	(41)	(43)	(143)	(137)	(132)	(129)	(733)	
Repayment of Government loan														
Ending cash balance	2,126	2,506	726	26	32	238	607	1,034	521	571	669	786	284	559

Note 1:

Total development cost will be \$4,428 million. This will comprise Government Equity of \$2,878 million, Commercial Loan of \$1,107 million as well as HKSTPC's internal resources of \$443 million:

(a) details of Government's financial support in various forms:

<u>2016/17</u>	<u>2017/18</u>	<u>2018/19</u>	<u>2019/20</u>	<u>2020/21</u>	<u>Total</u>
806	1,998	74	1,107	-	3,985

(b) details of HKSTPC's contribution from internal resources:

<u>2016/17</u>	<u>2017/18</u>	<u>2018/19</u>	<u>2019/20</u>	<u>2020/21</u>	<u>Total</u>
-	-	350	-	93	443