

For discussion
on 16 March 2010

Legislative Council
Panel on Commerce and Industry

**Development of Science Park Phase 3
and Proposed Financing Arrangements**

PURPOSE

This paper reports to Members the development plan for Science Park Phase 3 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. One of the initiatives was to develop Science Park in three phases over 15 years on a 22-hectare site at Pak Shek Kok. Phase 1 with a size of 8 hectares was completed in 2004. Phase 2 with a size of 7.7 hectares was largely completed in 2008 with the exception of one building.

3. In June 2009, Government accepted the recommendations from the Task Force on Economic Challenges (TFEC) on the development of six new economic areas in which Hong Kong enjoys clear advantages. Innovation and technology is one of them, and the development of Science Park Phase 3 has been identified as one of the key initiatives to enhance the technological infrastructure of Hong Kong.

4. In his 2010 Budget Speech, the Financial Secretary announced that the Government would implement the development of Science Park Phase 3 to further promote the development of innovation and technology, boost the development of green technology and attract more high-tech companies to establish a presence in Hong Kong.

Current Position of Science Park

5. The Hong Kong Science and Technology Parks Corporation (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 research and development (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 the Science Park, three Industrial Estates at Tai Po, Yuen Long and Tseung Kwan O, and the InnoCentre at Kowloon Tong.

6. Phases 1 and 2 of the Science Park occupy 15.7 hectares of reclaimed land at Pak Shek Kok. Phase 1, with gross floor area of 120,000 square metres, was constructed under the Public Works Programme at a total cost of \$2,907 million; and Phase 2 with gross floor area of 105,000 square metres was constructed by HKSTPC and substantially completed in 2008. The construction cost for Phase 2 is about \$3,846 million, financed by a mix of:

- Government equity (64%);
- Government loan (25%); and
- HKSTPC's internal resources (11%).

HKSTPC is now developing Building 20 within Phase 2, through its own resources. The budget is \$418 million and the building is due for completion by April 2011.

7. As at the end of January 2010, the occupancy rates for Science Park Phase 1 and Phase 2 were 92% and 78% respectively. **With an overall occupancy rate of around 85%, the first two phases of Science Park are expected to be fully occupied by 2014.**

Economic Impact of the Science Park

8. The Science Park is committed to promoting five focused technology clusters including:

- Electronics;
- Information Technology and Telecommunications;
- Precision Engineering;
- Biotechnology; and
- Green Technology.

It has already made a significant contribution to the innovation and technology industry in Hong Kong. According to the Census and Statistics Department, business expenditure on R&D in Hong Kong rose from \$2.5 billion in 2002 to \$5.3 billion in 2008 (an increase of around 110%). This increase is attributed to the opening of the Science Park and other policy initiatives launched to promote innovation and technology.

9. The Science Park has successfully attracted R&D intensive firms. There are currently 310 companies employing over 7,300 persons, of which about 4,800 persons (around 65%) engaged directly in R&D work. Around 57% of the tenants and almost all the companies participating in the incubation programme run by HKSTPC are Hong Kong companies. The remaining 43% of companies come from different economies (including the USA, the Mainland, Japan and Taiwan). During 2002 to 2009, the HKSTPC graduated 139 start-up companies from the incubation programme. Three of these companies subsequently listed in the Hong Kong Exchange.

JUSTIFICATIONS

10. Innovation and the application of technology are the most effective ways to add value to products and services. In the past decade, the Government has been supporting the development of innovation and technology in Hong Kong by providing the necessary hardware and software. Key initiatives include:

- development of the Science Park Phases 1 and 2;
- establishment of the \$5 billion Innovation and Technology Fund (ITF);
- setting up of five R&D Centres under ITF;
- introduction of the “R&D Cash Rebate Scheme” – with an allocation of \$200 million (to be launched in April 2010); and
- organisation of various publicity and promotional activities, such as the “Innovation Festival”, to raise the interest of the public (especially youths) in technology. (Note: “Innovation Festival 09” saw a record-breaking 115,000 people participated in the various activities.)

11. With the success of the first two phases of Science Park and its forecast full occupancy by 2014, there is an urgent need to develop Phase 3 in a timely manner. HKSTPC engaged consultants to consider the economic case as well as commissioned the Hong Kong Centre for Economic Research of the University of Hong Kong to evaluate the role of the Science Park in the overall technology and innovation policy in Hong Kong.

12. The results of the research have clearly demonstrated that there are strong policy and economic reasons for proceeding with Science Park Phase 3.

(A) From Hong Kong's own perspective

13. There is no doubt that Hong Kong stands to benefit from the development of the Science Park Phase 3. The reasons are set out below:

(a) Need to provide a wider base in our economy

Hong Kong's economy has come to rely on four pillar industries (i.e. financial services, trade and logistics, tourism and professional services). As a result of the financial tsunami in 2008, Government recognised that a more diversified economy would be beneficial to Hong Kong's long term development. As recommended by TFEC, Hong Kong needs to improve its innovation and technology capability continuously through investment in R&D, in addition to maintaining and enhancing its traditional competitiveness. The Science Park is one of the most important pieces of technological infrastructure to bring this to realisation;

(b) Need to make good use of Hong Kong's unique advantages in developing/promoting innovation and technology

Our open economy, sound legal system (including in particular excellent intellectual property (IP) protection), and proximity to and growing links with the manufacturing base in the Mainland are conducive to foreign direct investment including those in R&D.

Hong Kong is also able to provide a lifestyle attractive to world-class scientists and researchers to live and work. There

are clear advantages from the angles of language, culture, global exposure/orientation and others; and

(c) A good quality of labour force

With our high quality education institutions, good supply of science and engineering graduates (in 2007/08, around 36% of our local graduates had degrees in science, mathematics, engineering or technology) and a flexible labour force, Hong Kong is not only receptive to the adoption of new technologies, but also in a good position to nourish new ideas.

There is also an abundance of educated manpower supply in the Mainland and a large number of highly educated Chinese overseas. Hong Kong is in a unique position to attract and retain such talented people, and to facilitate a smooth process of “brain circulation” to make Hong Kong a centre of excellence for promoting innovation and technology in the Greater Chinese Diaspora.

(B) From the perspective of Hong Kong being at the door-steps of the Mainland

14. Hong Kong’s unique situation as a Special Administrative Region within China provides an opportunity for the development of a science and technology hub that can support the growth in the Mainland. 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. But there are a number of issues that we need to be taken into account:

(a) Need to dovetail with the rapid development in the Chinese economy

In the past two decades, the Mainland has emerged to be one of the world’s leading economic powers. The Mainland’s R&D intensity increased from 0.57% of GDP in 1995 to 1.52% in 2008. The Central Government will take actions to further enhance R&D in the coming years;

(b) Hong Kong's strategic location in China, in particular vis-a-vis the Pearl River Delta area

Hong Kong is in a unique position to collaborate with the Mainland in innovation and technology due to:

- the proximity and intense links with the manufacturing base in the Mainland;
- the efficient market system including financing for start-ups;
- the vibrant consumer market;
- the rule of law and strong IP protection regime which businessmen consider a strong advantage;
- the open market and the free flow of information, which is essential to any research endeavour; and

(c) Established collaboration with the Mainland

Over the past years, we have developed a very close working relationship on technology collaboration with our Mainland partners at both the Government and non-Government levels. At the national level, we have jointly established with the Ministry of Science and Technology a "Mainland-Hong Kong Science and Technology Co-operation Committee", and engaged the Chinese Academy of Sciences with a view to further strengthening our technical collaboration with the Mainland.

In view of our close proximity with the Pearl River Delta, we have also established technological co-operation frameworks with the Guangdong and Shenzhen governments. In particular, the "Shenzhen-Hong Kong Innovation Circle" was established in 2007 with a view to enhancing and implementing technology collaboration. Hong Kong and Shenzhen are working closely to pursue technology collaboration projects. One major achievement from these initiatives is the successful invitation to DuPont, a US enterprise, to locate its global thin film photovoltaic business headquarters and research centre in the Hong Kong Science Park and its manufacturing facilities in Shenzhen.

In the coming years, we intend to further make use of the good foundation we have developed so far to consolidate closer

co-operation between the innovation and technology communities of both sides.

(C) From the global perspective

15. From the global perspective, Hong Kong must continue to enhance its development of innovation and technology. Failure to do so will not only be a missed opportunity but will mean that Hong Kong's internationally renowned research institutions will fall behind developments elsewhere. It is important to bear in mind the following points:

(a) Global trend for innovation and technology to be the key driver for economic growth

According to the study conducted by Hong Kong Centre for Economic Research of the University of Hong Kong, one of the most important breakthroughs in over 200 years of the study of the drivers of economic growth was made in the past 25 years. This was the development of "ideas" leading to innovation and technology as the central driver of economic growth. Such concept is very different to the traditional theories which concern allocating resources efficiently to maximise utility.

While "resources" are limited in use, "ideas" are not. The Government has an important role to play in the development of "ideas" such as improving education, training and supporting R&D, and providing the appropriate institutional framework to foster and encourage a culture of innovation and technology. How economies respond to this new challenge will determine whether or not they have the strong basis for further economic growth in an information- and technology-led world;

(b) Global trend of developed economies increasingly investing in R&D

In 2008, R&D expenditure in Hong Kong was equivalent to 0.73% of our GDP. This was low when compared to other economies (Mainland 1.52%; Singapore 2.77%; Taiwan 2.77%; and Japan 3.78%).

Higher investment in R&D will raise Hong Kong's innovation and technology capability, thereby further enhancing the

long-term growth prospects of our economy; and

(c) Internationalisation of R&D activities

Effective collaboration across countries, cultures and languages is a critical factor for success. The internationalisation of global R&D is absolutely in line with Hong Kong's traditional global networking strength and Hong Kong must leverage on this development.

16. In gist, Hong Kong should invest more in innovation and technology. With the international trend towards more R&D and the powerful momentum of modernisation in the Mainland, there are clearly good grounds to do so. However, it is also important to recognise that we will be facing stiff competition from other economies. However, if we do not make an effort now, Hong Kong will certainly lag behind. The Government finds it necessary to continue to promote actively a favourable eco-system for innovation and technology. We must adopt a robust innovation and technology policy to ensure that we retain our place among the most advanced knowledge-based cities in the world.

DEVELOPMENT PLAN FOR PHASE 3

Proposed Scope and Programme

17. Phase 3 covers about 6.24 hectares of land with a total gross floor area (GFA)¹ of about 105,000 square metres (or a total construction floor area (CFA)² of about 194,700 square metres). The proposed development includes nine buildings, one energy tower as well as ancillary facilities. The master development plan of Science Park is at Annex A. The estimated development cost is \$4,878 million at Money-of-the-Day prices (or \$4,585 million at February 2010 price level). This is equivalent to \$23,550 per square metre of CFA at February 2010 price level (or \$19,463 per square metre if contingency, consultancy fees

¹ GFA means the area contained within the external perimeters of the buildings erected on the lot measured at each floor level.

² CFA is the total area of GFA plus other areas for carparks, machinery and equipment (e.g. lifts, air-conditioning and heating), refuse disposal system, covered walkways, elevated footbridges, atrium links, canopies, environmental-friendly or innovative features, etc.

and resident staff cost are excluded). The estimate has been checked by Architectural Services Department and is within the acceptable range. Green features such as building-integrated photovoltaic and wind turbines, etc. will be adopted in the design as appropriate. Having regard to its existing five technology clusters, HKSTPC plans to promote the further growth of the renewable energy and environmental technologies in the new phase.

18. Science Park Phase 3 is expected to bring about \$5.35 billion for the period from 2014 to 2019 and \$1.9 billion per year from 2020 onwards of value added to the Hong Kong economy. Around 4,000 R&D-related jobs will be provided upon full occupancy of Phase 3 and around 5,000 construction-related job opportunities will be generated during the construction period.

19. If we can secure funding approval from the Finance Committee of Legislative Council in the second quarter of 2010, construction will commence in mid 2011. The first batch of buildings in Phase 3 will be ready in late 2013 while the whole phase will be completed by 2016.

Proposed Financing Arrangements for Phase 3

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

	%	\$million
Commercial loan guaranteed by the Government	35	1,707
Government loan	25	1,220
Government equity	30	1,463
HKSTPC's internal resources	10	488
Total	<u>100</u>	<u>4,878</u>

21. We propose that the project should be financed by 60% of debt, made up of 35% of commercial loan and 25% of Government loan. In order to involve the private sector as far as practicable, we propose that 35% of the development cost (or \$1,707 million) should be financed by a commercial loan. It will be necessary for the Government to guarantee repayment of the commercial loan to enable HKSTPC to secure the loan and obtain reasonably advantageous terms.

22. The Government will also provide a loan to HKSTPC to finance 25% of the development cost (or \$1,220 million). The loan will be

charged with interest on a “no-gain-no-loss” basis³. The principal and interest will be repaid by six equal annual instalments starting from 31 March 2028, or one year after the full repayment of the commercial loan, whichever is the earlier. In case HKSTPC has unexpected cashflow problem to repay the loan, it may amend the repayment schedule or extend the loan repayment period with the prior approval of the Financial Secretary.

23. The remaining 40% of the development cost (or \$1,951 million) will be financed by Government equity (30% or \$1,463 million) and HKSTPC’s internal resources (10% or \$488 million). In determining the portion to be financed by HKSTPC, we have taken into account the Corporation’s financial position, projected income and expenditure in the coming years, and committed capital projects. HKSTPC’s cashflow projection is at **Annex B**.

24. Under this proposal, Government’s financial support in various forms will be up to 90% of the project cost, made up of direct funding of 55% (i.e. 30% Government equity and 25% Government loan) and guarantee of 35% for commercial loan. This arrangement demonstrates Government’s strong commitment to the Phase 3 project as well as to the innovation and technology sector in general.

ADVICE SOUGHT

25. Members are invited to support the development plan and proposed financing arrangements for Science Park Phase 3 (as set out in paragraph 20 above). Subject to Members’ agreement, we will proceed to seek the approval from the Finance Committee.

Commerce and Economic Development Bureau
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³ The current no-gain-no-loss interest rate is 2.099% per annum.

Master Development Plan of Science Park



* To recognise the outstanding achievement of Nobel Prize laureate in Physics Professor Charles K. Kao, the Science Park Auditorium was named as “Charles K. Kao Auditorium” in March 2010.

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

	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	
Opening cash balance	477	2,000	266	169	93	73	59	145	285	484	402	326	250	296	364	455	573	718	653	611	594	605	646	
Net cash flow of HKSTPC before Phase 3 financing	100	(82)	(46)	(14)	31	81	86	140	199	247	253	253	375	397	420	447	474	503	526	551	579	609	685	
Net cash available for funding Phase 3 construction	577	1,918	220	155	124	154	145	285	484	731	655	579	625	693	784	902	1,047	1,221	1,179	1,162	1,173	1,214	1,331	
Development cost of Phase 3	(40)	(2,092)	(1,280)	(654)	(472)	(340)	[* Total development cost will be \$4,878 million. See Note 1]																	
Government equity injection	1,463																							
Government loan		440	780																					
Commercial loan guaranteed by the Government				449	592	421	245																	
Repayment of commercial loan										(329)	(329)	(329)	(329)	(329)	(329)	(329)	(329)							
Repayment of Government loan																		(568)	(568)	(568)	(568)	(568)	(568)	
Ending cash balance	2,000	266	169	93	73	59	145	285	484	402	326	250	296	364	455	573	718	653	611	594	605	646	763	

Note 1:

Total development cost will be \$4,878 million. This will comprise Government's financial support of \$4,390 million as well as HKSTPC's internal resources of \$488 million:

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

2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	Total
1,463	440	1,229	592	421	245	4,390

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

2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	Total
-	229	51	62	51	95	488