

**For information
on 15 May 2012**

**Legislative Council
Panel on Commerce and Industry**

Promotion of Innovation and Technology in Hong Kong

Purpose

This paper sets out our policy and strategy to promote innovation and technology (I&T) development in Hong Kong.

Policy Statement

2. Hong Kong has excellent market institutions and rules to encourage the adoption and adaptation of ideas and technology around the world for economic benefits.

3. In 2009, the Government identified I&T as one of the six new industries which Hong Kong enjoys clear advantages and should be further promoted. The National 12th Five-Year Plan, which was promulgated in March 2011, further affirms the Central Government's support for development of I&T in Hong Kong.

4. Taking into account the latest development, we have formulated the following policy statement to guide our future work –

“The Government firmly believes that innovation and technology is a key driver for economic development. We are committed to developing Hong Kong into a knowledge-based economy that thrives as an innovation hub in the region. In meeting such commitment, we will enhance collaboration among Government, the industry, academia and the research sector to promote research and development as well as technology transfer. A multi-pronged approach will be adopted, comprising the provision of infrastructural and financial support, human resource development, collaboration with economies outside Hong Kong and fostering an innovation culture in the community.”

Strategy and Measures to Support Innovation and Technology

5. Government's approach in promoting I&T development is underpinned by five core strategies. The objective is to create a vibrant ecosystem for all key players (including the Government, the industry, academia and the research sector) to interact under a favourable environment characterised with excellent hardware and software support. The five core strategies are –

- (A) providing world-class technological infrastructure;
- (B) offering financial support to research and development (R&D) and technology transfer;
- (C) nurturing human resource development;
- (D) strengthening Mainland and international collaboration in science and technology; and
- (E) fostering a vibrant innovation culture in the community.

(A) Providing World-Class Technological Infrastructure

6. The Hong Kong Science Park provides facilities, services, and a dynamic environment that enable companies to nurture ideas, innovate and develop. Phases 1 and 2 of the site currently provides 20 state-of-the-art laboratory-fitted buildings offering 220 000 m² of R&D office space. The Science Park is now home to more than 380 companies engaging in five technology clusters, namely integrated circuits and electronics; precision engineering; information and communications technology; biotechnology; and green technology. These companies range from start-ups, small and medium sized enterprises (SMEs) to multi-national conglomerates both from local and overseas.

7. With the success of the first two phases, we have commenced the \$4.9 billion Phase 3 development which will increase the existing floor area by about 50% to 330 000 m² accommodating another 150 high-tech companies. Phase 3 will be completed in stages from early 2014 to 2016.

8. The three Industrial Estates (IEs) in Tai Po, Yuen Long and Tseung Kwan O provide land for industries which would upgrade our manufacturing bases but could not be operated in traditional multi-storey industrial buildings.

About 95% of the total 217 hectares of greenfield sites have been granted. To capture opportunities in high-tech industries in the longer run, we will explore the feasibility of expanding the Yuen Long IE.

(B) Offering Financial Support to R&D and Technology Transfer

Innovation and Technology Fund

9. The Innovation and Technology Fund (ITF) is set up to provide financial support to a spectrum of activities that boost our I&T capability, ranging from applied R&D, technology transfer and commercialisation related activities to promotional activities that foster an innovation culture within the community. As at end-March 2012, ITF has supported over 2 700 projects at a total commitment of about \$6.4 billion. The uncommitted funding balance (i.e. available for funding new projects) was about \$2.1 billion.

10. At present, there are four major funding programmes under the ITF –

- (a) Innovation and Technology Support Programme (ITSP) which requires –
 - (i) for platform projects, industry contribution of at least 10% of the project cost from two or more companies. The industry sponsors will not be entitled to own the project IP; and
 - (ii) for collaborative projects, industry contribution of at least 30% (for R&D Centres' projects) or 50% (for non-R&D Centres' projects) of the project cost. The industry partner will be entitled to exclusive right to utilize the project IP for a defined period or own the project IP.
- (b) University-Industry Collaboration Programme (UICP) under which the company is required to contribute no less than 50% of the project cost;
- (c) Small Entrepreneur Research Assistance Programme (SERAP) which operates as a matching grant i.e. company contributing 50% of the project cost and the remaining 50% funded by ITF.

While large scale corporations are important, we must support our SMEs in pursuing R&D. SERAP is a specific programme under the ITF that supports company in-house R&D activities. It provides capital funding to local technology-based companies (with less than 100 employees) to undertake projects that have innovative and technological content, and have a reasonable chance of commercialisation. As at end-March 2012, over 350 projects have been approved with a total funding of about \$400 million.

To better support the R&D activities of SMEs, we have recently introduced the following enhancements to SERAP –

- (i) increasing the funding ceiling for each project from \$4 million to \$6 million; and
 - (ii) extending the Programme to cover companies with venture capital investment; and
 - (iii) expanding the scope of funding to facilitate commercialisation, including industrial design, testing and certification of prototype and clinical trial, etc.
- (d) General Support Programme (GSP) which is the only programme that supports non-R&D projects like conferences, surveys, events, etc. to help upgrade industry, promote the culture of I&T in the community, etc.

R&D Cash Rebate Scheme

11. In April 2010, we launched the \$200 million-R&D Cash Rebate Scheme to reinforce the research culture among private companies and encourage them to establish stronger partnership with local public research institutions. Under the Scheme, a company receives a cash rebate on its expenditure in two types of applied R&D projects –

- (a) projects under the Innovation and Technology Fund (ITF); and
- (b) those commissioned by companies and conducted by designated local public research institutions.

The designated institutions include: local universities, R&D Centres set up under the ITF, Hong Kong Productivity Council and the Vocational Training Council.

12. To enhance the attractiveness of the R&D Cash Rebate Scheme, we have increased the level of rebate from 10% to 30% since February 2012. By end-March 2012, the Scheme has approved 386 applications and \$17.3 million of rebate, benefitting 303 companies.

(C) Nurturing Human Resource Development

13. The success of a knowledge-intensive I&T sector hinges on the availability of talents. As such, we have placed increasing emphasis on human resource development. Our approach is to provide exposure and incentives to our young generation at different stages of their academic and intellectual development via various channels. It helps to attract them to consider pursuing I&T as a life-long career. The activities organised for our hopefuls include –

(a) For primary and secondary school students

- Science project competitions;
- Organising various student activities including interactive educational games, workshops, seminars and exchange activities through the Tech Universe and the Hong Kong Federation of Youth Groups' Centre for Creative Science and Technology in Hong Kong Science Park; and
- Providing funding to organisations such as the Innovation and Technology Student Club for organising various student activities on science knowledge and practice;

(b) For university students

- Scholarship schemes, e.g. Innovation and Technology Scholarship Award Scheme;
- Technopreneurship competitions, e.g. E-Challenge; and
- Internship programmes; and

(c) For young entrepreneurs

- The incubation programme in Science Park provides low-cost accommodation, shared-use laboratories and equipment as well as management, marketing, financial and technical assistance to technology start-ups; and

- SERAP provides another channel of support to fund R&D conducted by SMEs.

(D) Strengthening Mainland and International Collaboration in Science and Technology

14. Providing means and motivation for researchers to collaborate effectively with other economies would create synergies needed to advance science and technology.

15. The Government is committed to strengthening co-operation between the Mainland and Hong Kong in I&T. Hong Kong has the necessary infrastructure to support the development of high technology industries, including internationally-renowned universities; a robust intellectual property protection regime and sound legal system; state-of-art science and the necessary technology assets such as the Hong Kong Science Park and R&D Centres, etc. The Mainland is a vast potential market, has extensive manufacturing bases, rich human resources and strong research capabilities. Through combining the strengths of both the Mainland and Hong Kong, the technological developments in both places can be further enhanced.

16. In the Mainland, we have established collaboration mechanisms at all levels, from the State Ministry of Science and Technology (MOST) in Beijing, the Guangdong Provincial Government to the Shenzhen Municipal Government. With the Central Government's emphasis on science and technology development in the 12th Five-Year Plan, we have been working closely with MOST through the Mainland/Hong Kong Science and Technology Co-operation Committee to identify and implement initiatives to dovetail the Plan. These include –

- (a) encouraging more local R&D institutions and research personnel to take part in national science and technology programmes;
- (b) nominating Hong Kong experts for the National Science and Technology Programmes Expert Database. 56 Hong Kong experts recommended by ITC were approved by MOST;
- (c) providing financial support to the 12 laboratories in Hong Kong which have gained the status of Partner State Key Laboratories (SKLs) by pairing up with SKLs in Mainland. We will also start a new round of application exercise for Partner SKLs this year; and

- (d) establishing other fora for fostering technology cooperation with the Mainland. For instance, we are following up with MOST on a new initiative of setting up of a Hong Kong branch of the Chinese National Engineering Research Centre (CNERC). We are also working with MOST on another initiative of setting up of High-Tech Industrialization Bases in Hong Kong and accordingly Hong Kong Science Park was designated by MOST in November 2011 as the National High-tech (Partner) Industrialisation Base for Green Technology.

17. Internationally, we have been actively promoting technology collaboration with other economies and research institutes. We have been working with the Consulate Generals in Hong Kong to promote technology collaboration between the research community and technology companies in the two places. For instance, a business delegation led by the Federation of Hong Kong Industries visited Israel last year to explore opportunities for collaboration. We have also stepped up our promotion of the strengths of Hong Kong to overseas universities and companies with a view to fostering research collaboration and the use of Hong Kong as a landing pad for access to the Mainland market. Through the General Support Programme, we have funded a project between the Hong Kong University of Science and Technology and the Massachusetts Institute of Technology to enhance research collaboration among universities and industries in the United States and Hong Kong.

(E) Fostering a Vibrant Innovation Culture in the Community

18. Increasing public awareness and understanding of how science and technology bring socio-economic benefits is crucial for seeking wider public support and participation in strengthening the I&T sector. To instil a stronger innovation culture in the community, we organise various publicity programmes on a regular basis to sustain public interest in science and technology. The scale and number of visits of our flagship event, InnoCarnival, increased steadily in the past two years, reaching a record high attendance of some 180 000 in 2011. Other joint publicity programmes include the launching of promotional video, advertorials and interviews that feature the latest development relating to I&T.

Gross Expenditure on R&D (GERD)

19. The GERD for 2010 stood at \$13.3 billion, 4% higher than 2009. However, when expressed as a ratio to Gross Domestic Product (GDP), the

GERD in 2010 stood at 0.76%, slightly lower than that of 0.79% in 2009. The 4% increase in GERD is dwarfed by the strong growth of GDP (7%) which was fuelled by other economic sectors such as the tourism (47%), financial services (11%), trading and logistics (16%) during the same period.

20. We recognise that our GERD as a ratio to GDP remains low by international standard. This is mainly due to the lack of defence and manufacturing industries – Hong Kong is a service-driven economy, the service sector contributed to 93% of GDP while the manufacturing sector only stood at about 2% in 2010.

21. With the efforts made by various sectors over the years, Hong Kong has made considerable achievements in the development of I&T -

- (a) In the past decade or so, Hong Kong's R&D expenditure has been increasing at an average annual growth rate of 7%, from 0.55% in 2001 to 0.76% in 2010 when expressed as a ratio to GDP;
- (b) The R&D expenditure by the public sector (including Government and higher education sectors) has continued to increase at an average annual growth rate of 4.8%, from \$5 billion in 2001 to \$7.5 billion in 2010, accounting for 57% of the 2010 GERD; and
- (c) The number of companies operating in the Science Park has also been on the rise over the years from about 160 in 2007 to over 380 at the moment, employing over 6 300 R&D personnel.

22. Looking into the future, we will make use of our strengths (namely rule of law, robust intellectual property protection, free flow of information, international financial services, well established infrastructure, etc.) as well as our strategic location (doorstep to Mainland; heart of Asia) to further promote Hong Kong as a vibrant innovation hub in the region.

Advice Sought

23. Members are invited to note the policy statement and our strategy and measures on the promotion of I&T in Hong Kong