

For discussion
on 20 January 2015

**Legislative Council
Panel on Commerce and Industry**

Injection into the Innovation and Technology Fund

PURPOSE

This paper seeks Member's support to inject \$5 billion into the Innovation and Technology Fund (ITF) and subsume the Research and Development (R&D) Cash Rebate Scheme (CRS) under the ITF.

PROPOSAL

2. We propose to –
 - (a) inject an additional \$5 billion into the ITF; and
 - (b) subsume the CRS under the ITF,

to provide sustained and comprehensive support for innovation and technology (I&T) development.

BACKGROUND

Establishment of the ITF and Authority

3. The ITF was established by Resolution passed by the Legislative Council (LegCo) on 30 June 1999 as a statutory fund under section 29 of the Public Finance Ordinance (Cap. 2) to finance projects that contribute to I&T upgrading and development in manufacturing and services industries in Hong Kong with a view to enhancing Hong Kong's economic development.

4. The Finance Committee (FC) of the LegCo approved, on 9 July 1999, vide FCR(1999-2000)36, an appropriation of \$5 billion to the ITF. Members also approved the delegation of authority to the Financial

Secretary to approve individual projects not exceeding the prevailing funding ceiling of a Category D project in the Public Works Programme. Projects exceeding such funding ceiling will require FC's separate approval. The power of administration of the ITF was subsequently delegated to the Commissioner for Innovation and Technology upon the establishment of the Innovation and Technology Commission (ITC) in 2000 (Note: The current funding ceiling for a Category D project in the Public Works Programme is \$30 million).

R&D Cash Rebate Scheme

5. Apart from the ITF, the Government launched the CRS in April 2010 with a funding commitment of \$200 million approved by FC in January 2010 (FCR(2009-10)48) and created under the Expenditure Head of ITC to provide cash rebate to private companies on their investment in R&D projects funded by ITF or conducted in partnership with designated local public research institutions. Initially, the level of cash rebate was 10%. This was subsequently increased to 30% in February 2012 to increase the attraction of the Scheme.

JUSTIFICATION

Latest Position

6. As at end-November 2014, the ITF has supported over 4 250 projects, involving a total funding of about \$8.9 billion. The total revenue earned was about \$4.1 billion, mainly representing the investment income from the Exchange Fund to which the unspent ITF funding has been parked as well as the project incomes ploughed back to the ITF over the years.

7. As at end-November 2014, the uncommitted balance of the ITF was \$0.2 billion and the cash balance was about \$1.3 billion. According to our latest cash flow forecast, the uncommitted balance of the ITF would be fully committed in mid-2015 and the cash balance will be exhausted in early 2016.

8. To provide sustained and comprehensive support for I&T development, the Chief Executive has announced in the 2015 Policy Address the proposal to inject \$5 billion into the ITF and subsume the CRS under the ITF.

Key Funding Programmes of the ITF

9. The ITF is the flagship tool of the Government in promoting I&T. At present, there are three funding programmes under the ITF that support R&D activities –

- (a) the **Innovation and Technology Support Programme (ITSP)** which supports mid-stream/downstream applied R&D projects mainly undertaken by the five R&D Centres¹ set up by the Government, local universities and other designated local public research institutions;
- (b) the **University-Industry Collaboration Programme (UICP)** which supports collaborative projects undertaken by private companies in collaboration with local universities in the form of matching grant; and
- (c) the **Small Entrepreneur Research Assistance Programme (SERAP)** which provides dollar-for-dollar matching fund for small technology based enterprises to undertake in-house R&D projects.

10. Apart from the above three programmes, there is also the **General Support Programme (GSP)** which supports non-R&D projects for the upgrading and development of the local industries as well as the promotion of an I&T culture in Hong Kong. Under the GSP, there are two sub-programmes, namely –

- (i) the **Patent Application Grant (PAG)** that provides funding support for patent applications; and
- (ii) the **Internship Programme** that supports organisations undertaking ITF projects to recruit graduates from local universities as interns.

¹ The Government set up five R&D Centres in June 2006, namely –

- (a) Hong Kong Automotive Parts and Accessory Systems R&D Centre;
- (b) R&D Centre for Information and Communications Technologies under the Hong Kong Applied Science and Technology Research Institute;
- (c) Hong Kong Research Institute of Textiles and Apparel;
- (d) Hong Kong R&D Centre for Logistics and Supply Chain Management Enabling Technologies; and
- (e) Nano and Advanced Materials Institute.

11. In addition, the **Public Sector Trial Scheme (PSTS)** provides additional funding of up to 100% of the original R&D cost to completed R&D projects funded by the ITF under the ITSP, UICP and SERAP for the production of tools/prototypes/samples and the conducting of trials in the public sector.

Evolution of the ITF Over the Years

12. Over the years, the ITF has evolved continuously to suit prevailing circumstances. In the early years of its set up to 2006, the focus of the ITF was more on supporting projects conducted by universities, the Hong Kong Applied Science and Technology Research Institute and the Hong Kong Productivity Council (HKPC). After a large scale consultation exercise, the Government set up five R&D Centres in 2006 to drive and co-ordinate applied R&D in selected areas which had potentials for further development in Hong Kong. After the financial tsunami in 2008, the Government further upheld the importance of I&T by designating it as one of the six new industries that enjoyed clear advantages. Since then, much effort has been made to drive realisation and commercialisation of R&D outcomes. For instance, we introduced a new assessment framework in 2011, which aims to identify projects with better prospects of realisation/commercialisation apart from scientific/technology contents, and launched the PSTS to promote the application of R&D outcomes in the public sector.

13. With the financial support provided by the Government through the UGC/RGC and the ITF as well as the private sector investment, etc., we are gradually building up an eco-system on I&T in recent years. For example, Hong Kong's Gross Domestic Expenditure on R&D (GERD) has risen from \$7.1 billion in 2001 to \$15.6 billion in 2013, representing an average annual growth of around 7%. The number of R&D personnel has also more than doubled during the same period, from around 11 000 to 26 000. While we appreciate that the increase in R&D personnel and GERD is not solely attributed by the ITF, the ITF is certainly a key player in fostering the I&T ecology.

Comprehensive Review of the ITF

14. In order to evaluate the operation of the ITF after some 15 years of operation and identify areas of improvement, the Government conducted a comprehensive review on the ITF (the Review) in mid-2013. In the course of the Review, we briefed the Panel on the interim progress and consulted Members on the recommendations arising from the Review at the meetings held on 18 February 2014 (LC Paper No. CB(1)885/13-14(03)) and 18 March 2014 (LC Paper No. CB(1)1072/13-14(07)). With the support of the Panel, we have implemented some of the recommendations in stages while continuing with the Review.

15. The Review was completed in November 2014 and we submitted the Final Report of the Review to the Panel at its meeting on 18 November 2014 (Note: The full Report was attached to LC Paper No. CB(1)211/14-15(03). If Members wish to acquire a hard copy, please inform the ITC via the LegCo Secretariat).

16. The Review analysed the operation of the ITF since its establishment, its developments and improvements over the years, as well as the proposed way forward, including –

(a) Analysis of the funding programmes

We have reviewed the performance of the funding programmes and sub-programmes under the ITF. In general, we consider that they have been operating smoothly and satisfactorily, and have helped built up the capabilities of local research talents and gained increasing recognition from the industry, especially with the liberalisation to the funding mechanism and improvement measures introduced in the past few years, e.g. extending the funding scope to more downstream R&D activities, improving the requirements on industry sponsorship and application of R&D outcomes in the public sector. However, to further promote I&T investment in the private sector and address some existing limitations of the SERAP, we have proposed to replace the SERAP by a new Enterprise Support Scheme (ESS);

(b) Analysis of the R&D Centres

We are delighted that after some eight years of operation, the R&D Centres have gradually become more mature and have played a significant role in acting as the focal point for technology collaboration among the Government, industry, academia and research sectors. Recently, they have stepped up efforts in realisation and commercialisation of R&D outcomes and have obtained increasing support from the industry as reflected by the increase in the level of industry contribution over the years. As at 2013-14, all the R&D Centres have met their latest target level of industry contribution of 20%. We have undertaken to conduct another full review of the R&D Centres in 2015 to assess more comprehensively their performance and put forward recommendations regarding their future operation and longer term financial arrangements;

(c) Realisation and commercialisation of R&D outcomes

With the various efforts and initiatives introduced since 2011, we have witnessed significant increase in the number of cases in realising R&D outcomes in the public sector and commercialisation of R&D outcomes. With the various improvement measures to facilitate support of larger scale trial projects in Government bureaux/departments and statutory bodies and more efforts to facilitate cross-institutional collaboration, we expect to bring greater impact to the community by application of the R&D outcomes to a wider section of the community such as the elderly. As at end-November 2014, we have approved a total of 70 projects under the PSTS which span many different sectors including logistics, construction, and community care sectors, and involved different public sector organisations, such as the Construction Industry Council and the Tung Wah Group of Hospitals;

(d) Creation of an I&T ecological environment and fostering collaboration

Over the years, through the financial support of the ITF as well as our active liaison and collaboration with key stakeholders,

we have gradually built up an eco-system on both software and hardware fronts conducive to the development of I&T in Hong Kong to widen the network/exposure of our researchers and create synergy. For example, locally we have been supporting technology transfer and technopreneurial activities of universities through funding their Technology Transfer Offices and setting up a new Technology Start-up Support Scheme for Universities. At the Mainland level, we have been supporting the establishment of Partner State Key Laboratories and Hong Kong Branch of Chinese National Engineering Research Centres in Hong Kong. At the international level, we have been supporting collaboration in R&D with renowned overseas institutions; and

(e) Subsuming the CRS under the ITF

Apart from the funding programmes under the ITF, we have also covered the CRS in the Review. The CRS has been operating smoothly and the industry's response has been increasingly positive, especially after the increase of cash rebate level to 30% in 2012. For example, the amount of cash rebate approved has continued to increase from \$11.4 million in 2011-12 to \$30.0 million in 2013-14, representing a growth of over 160%. As at end-November 2014, the CRS has approved a total of 990 applications involving cash rebate of \$104.4 million. We are glad to notice that there is an increasing momentum for companies to make use of the Scheme. We have therefore proposed to subsume the CRS under the ITF to provide a more stable and longer term financial support to promote private sector investment in R&D and to simplify administration.

In addition, having regard to the outcome of the Review, we have recommended a number of improvement measures to the ITF, including relaxing the sponsorship requirements for ITSP; increasing the timeframe for UICP projects from 2 to 3 years; increasing the funding ceiling of the PAG from \$150,000 to \$250,000 (and corresponding the patent application budget in all ITF-funded projects), etc. With the Panel's support, these measures are being implemented in stages starting from December 2014.

Discussion at the Previous Panel Meetings

17. As mentioned in paragraphs 14 and 15 above, we briefed the Panel on the interim progress of the Review at its meetings on 18 February 2014 and 18 March 2014, and the Final Report of the Review at its meeting on 18 November 2014. Members generally supported our findings and recommendations. Key comments raised by Members at these meetings are summarised below –

- (a) the Panel affirmed the role of the ITF in promoting the development of I&T in Hong Kong. Members welcomed the Government's new initiatives and improvement measures to enhance the application and commercialisation of R&D results, such as extending the funding scope of the ITF, and looked forward to these initiatives further promoting the development of I&T in Hong Kong;
- (b) some Members commented that Hong Kong's GERD as a percentage to Gross Domestic Product at below 0.8% was low compared to other knowledge-based economies and urged the Government to increase resources to vigorously promote the development of I&T in Hong Kong;
- (c) some Members suggested that the Government should step up its efforts in promoting I&T and attracting overseas technology companies to set up their R&D bases in Hong Kong, or Hong Kong would lose out to neighbouring economies in I&T development. They also suggested the Government to attract overseas talents and nurture local I&T talents;
- (d) some Members pointed out that given the promotion of I&T required long-term efforts, it was inappropriate to appraise the performance of ITF-funded projects from just the value-for-money perspective, expecting revenue return within a relatively short period of time. Instead, projects should also be assessed on the basis of their social and economic contributions to the broader community;
- (e) the ITF should also identify specific technology areas with development potentials, such as biotechnology, and focus on funding projects that were commercially viable and suitable for manufacturing in Hong Kong;

- (f) some Members advised the Government to adopt new thinking in keeping the ITF funding mechanism as simple as possible to minimise the constraints imposed on projects; and
- (g) noting that the uncommitted balance of the ITF would be expected to be fully committed by mid-2015, the Panel looked forward to the Government's updates on the future financial arrangements of the ITF, including bidding for additional resources as fit.

18. Furthermore, at the Panel meeting on 16 December 2014, in the course of discussing the details of the proposed ESS, Members raised concerns as follows –

- (a) small technology companies might be less competitive than larger ones when applying for the ESS. The Government was requested to introduce measures to particularly protect the interests of small and medium enterprises (SMEs) taking into account their needs and special circumstances;
- (b) some companies were facing a difficult choice in the interim between submitting funding applications under SERAP or to wait for the new ESS. The Government was requested to look into measures to facilitate conversion of recently approved SERAP projects as well as SERAP applications being processed on to the “ESS stream”; and
- (c) apart from financial support, the Government should consider providing sustained professional support, such as arranging industry veterans to provide technical and management advice as appropriate for SMEs and technology start-ups receiving ESS funding.

19. We have subsequently written to the Panel, providing our response as follows –

- (a) the ESS will place equal emphasis on SMEs as well as large corporations. Each application, be it from a large, medium or small company, will be assessed on its own merit. In assessing applications, projects meeting the relevant funding criteria will be supported and there will not be a quota on the

number of projects to be funded as long as the uncommitted balance of the ITF remains positive. As such, the giving of funding support to larger corporations would not reduce the chance for SMEs to obtain funding support under the ESS. In assessing the applications, there is also the principle of proportionality taking into account the project size, capacity of the applicant, etc. In addition, we will introduce a designated track for applicant companies which have less than 100 employees and are seeking funding support of no more than \$2.8 million per project (which tallies with the current funding ceiling for seed projects carried out by R&D Centres). This will enable SME applications to be handled more speedily and in a focused manner.

Overall, the Scheme aims to support all enterprises and promote more private sector investment in I&T, thus creating more job opportunities of a diversified nature (e.g. working in an SME is different from working in an international firm) for I&T personnel in Hong Kong especially for our young people;

- (b) when the ESS is launched, we will inform SERAP applicants that they are free to choose to withdraw their SERAP applications and submit fresh ones under the ESS. Similarly, SERAP companies whose projects have been approved but who have yet to sign the Fund Agreements will also be given such an option. We will keep the procedures simple and will provide all necessary assistance. While we will cease receiving new applications for SERAP upon the launch of the ESS, SERAP projects which have already commenced will continue under the established mechanism; and
- (c) we will also strengthen our efforts in helping technology companies and start-ups by working closely with the Hong Kong Science and Technology Parks Corporation (HKSTPC) and HKPC – requesting them to provide technical and management advice and mentorship, organise sharing sessions, and provide other support to companies receiving ESS funding. Besides, we will widely publicise the ESS by organising briefings, producing brochures on application procedures, and disseminating information to SMEs and incubatees through SME One and TecOne (operated by HKPC and HKSTPC).

20. As the ESS will bring new impetus to promote private sector investment and the further development of Hong Kong's I&T sector, we hope to launch the Scheme as early as possible, say, around March 2015. We will submit a review report to the Panel around one year after implementation to see what improvements should be made.

NEED FOR ADDITIONAL FUNDING AND EXPECTED BENEFITS

21. As mentioned in paragraph 7 above, according to our latest cash flow forecast, the uncommitted balance of the ITF would be fully committed in around mid-2015 and the cash balance will be exhausted in early 2016. We therefore propose to inject \$5 billion into the ITF.

22. We expect that with the proposed funding injection, we will be able to continue to support the development of I&T which will –

- (a) provide sustained and comprehensive support for applied R&D activities in Hong Kong;
- (b) engender a better ecological development for the development of I&T;
- (c) in the public sector, facilitate the application of R&D outcomes through collaboration with various stakeholders and bring benefits to a wider section of the community, such as improving the quality of life of the elderly and dependent population;
- (d) in the private sector, support the upgrading and development of our industries to meet the changing needs of the prevailing economic environment, encourage more technopreneurial activities, facilitate the commercialisation of R&D outcomes, etc.;
- (e) create more job opportunities in the I&T sector, upgrade the R&D talent pool, and enhance the level of GERD in Hong Kong; and
- (f) foster an I&T culture in Hong Kong.

CONTROL AND REVIEW MECHANISM

23. Given that the ITF is the flagship tool of the Government in promoting I&T, it is imperative to put in place a good control and review mechanism to ensure that the funds are being utilised in an efficient and effective manner.

24. In general, for non-R&D Centre projects, applications are vetted according to the respective assessment frameworks of the relevant funding programmes by an Assessment Panel before submitting to the Commissioner for Innovation and Technology (CIT) for approval. For projects undertaken by R&D Centres, applications are vetted by the respective Technology Committee/Technology Review Committee of the R&D Centres before submission to the CIT for approval. Key information of the approved projects, such as the fund recipients, project period and funding amount, is published on the ITC website for public's perusal.

25. The ITC also promulgates funding guidelines for various funding programmes which set out, among other things, the control and review mechanism of ITF. Over the years, ITC has, from time to time, made changes to these guidelines to reflect the latest policies and enhance the control, monitoring and evaluation of ITF projects. For example, the prevailing version of the "ITSP Funding and Administrative Guidelines for Successful Applicants", promulgated in January 2014, has set out some relevant control mechanism for the R&D projects supported under the ITSP, including –

- (a) signing project agreements between the lead applicant of the project and the Government;
- (b) arrangement of project accounts, books and records;
- (c) auditing requirements, including submission of annual and final audited accounts;
- (d) usage of ITF funding, including expenditure on manpower, equipment, administrative overheads and unallowable cost items;
- (e) project monitoring, including submission of progress and final reports, reporting to the project steering committee for

collaborative projects;

- (f) disbursement of grants and return of residual funds;
- (g) submission of post-project evaluation reports;
- (h) procurement and recruitment arrangements; and
- (i) arrangements of dissemination of R&D results and acknowledgement, etc.

There are similar control mechanisms for other funding programmes under the ITF.

26. To ensure compliance with the funding guidelines, the ITC will also conduct progress meetings/site inspections with the project teams where appropriate to verify the project progress and usage of funds as reported in the progress/final reports or audited accounts. Disbursement of funds will be made in accordance with a prescribed cash flow schedule only if the project is able to meet approved milestones. In case of non-compliance with the funding guidelines or where project progress is unsatisfactory, disbursement of funds may be withheld or the project may be terminated where appropriate.

27. The Director of Audit conducted in 2013 a value-for-money audit on the ITF and made recommendations, among others, to improve the project management and evaluation mechanism of the ITF, principles and policies for commercialisation, and timely submission of project progress reports and audited accounts, etc. ITC agreed with the recommendations in the Audit Report and has taken them into account in conducting the comprehensive review of the ITF. For instance, we promulgated a new guideline which gives greater flexibility for negotiations on intellectual property arrangements, and introduced a more comprehensive/systematic post-project evaluation framework to better assess and monitor the outcome and commercialisation of projects.

28. In the future, ITC will continue to enforce the prevailing control mechanism for ITF projects, conduct periodic reviews and make necessary adjustments/enhancements as fit.

FINANCIAL IMPLICATIONS

29. If the proposed injection of \$5 billion is approved (and the CRS is subsumed under the ITF), based on past expenditure pattern, the indicative breakdown of the financial implications is as follows –

Financial Year	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21 and beyond	Total
\$ million	715	696	769	831	894	1,095	5,000

30. As shown above, with the proposed injection of \$5 billion, we expect that the ITF can continue to operate for around 5 to 6 years until 2020-21. However, the actual cash flow may vary depending on the number and amount of funding applications approved under different funding programmes as well as changes in policy. For example, introduction of a new initiative/scheme may speed up the usage of funds.

WAY FORWARD

31. Subject to Members' support, we will seek approval of the FC to inject \$5 billion into the ITF and subsume the CRS under the ITF.

Innovation and Technology Commission
January 2015