香港特別行政區政府

創新及科技局

香港添馬添美道二號
政府總部西翼二十樓

INNOVATION AND
TECHNOLOGY BUREAU

THE GOVERNMENT OF THE HONG KONG
SPECIAL ADMINISTRATIVE REGION

20/F, West Wing, Central Government Offices,
2 Tim Mei Avenue, Tamar, Hong Kong

By Email

24 September 2020

Mr Desmond LAM
Clerk to Panel on Commerce and Industry
Legislative Council Complex
1 Legislative Council Road
Central, Hong Kong

Dear Mr LAM,

Panel on Commerce and Industry
Meeting on 21 April 2020

Progress report of the funding schemes under the Innovation and Technology Fund

At the meeting on 21 April 2020, the Panel requested the Government to provide supplementary information. The relevant information is enclosed herewith for Members' reference.

Yours sincerely,

(Sandy CHEUNG)
for Secretary for Innovation and Technology

C.c.: Commissioner for Innovation and Technology (Attn.: Miss Kathy CHAN)

Panel on Commerce and Industry
Meeting on 21 April 2020

Progress report of the funding schemes under the Innovation and Technology Fund
Supplementary Information

Innovation and Technology Fund supports the realisation and commercialisation of local research and development outcomes

We have all along been supporting the realisation and commercialisation of local research and development ("R&D") outcomes. In this regard, the Public Sector Trial Scheme ("PSTS") under the Innovation and Technology Fund ("ITF") funds eligible local enterprises or organisations to produce prototypes and samples of their R&D outcomes and conduct trials in local public sector organisations with a view to increasing the chances of realisation and commercialisation of R&D outcomes.

PSTS

2. Since 30 March 2020, the funding scope of the PSTS has been extended to all technology companies conducting R&D activities in Hong Kong. The PSTS fosters public sector organisations to try out more local innovation and technology ("I&T") products, and allows more R&D organisations to improve their products with reference to the suggestions and experience obtained during the trial, thereby increasing the chance of a successful market launch. As at end July 2020, the PSTS has funded 261 projects with funding of about $490.3 million, benefitting over 150 different organisations to undertake more than 355 trials. Examples of funded projects include the Water Supplies Department's trial of a novel inline hydropower and energy storage system developed by a local university, and the Hong Kong Research Institute of Textiles and Apparel ("HKRITA")'s provision of compression socks for the elderly.

3. To tackle the coronavirus disease-2019 ("COVID-19") epidemic, we launched a special call for projects under the PSTS in March 2020 to support product development and application of technologies for the prevention and control of the epidemic, promote the realisation and commercialisation of relevant R&D outcomes, as well as encourage the

public sector to use technologies for tackling the epidemic. The maximum funding amount for each project is $2 million. The application period of the special call ended on 10 April this year with 332 applications received, 54 of which have been approved involving funding amount of about $89.4 million. 199 applications were rejected and 12 have been withdrawn. We are processing the remaining applications. The funded trial projects involve various anti-epidemic technologies, including anti- viral coating, automated temperature checking robot, anti-viral clothing, genetic extraction system for COVID-19 virus, automated face mask and body temperature detection system, 3D-printed face shield, as well as COVID-19 diagnostic/detection devices, etc.

Funding support for local R&D Centres and Technology Transfer Offices ("TTOs") of universities

4. In addition, the ITF funds the operation of local R&D Centres and TTOs of universities, etc., including their work on realisation and commercialisation of R&D outcomes. The four local R&D Centres funded by the ITF [1] actively collaborate with the industries of their respective technology areas to promote the commercialisation of their R&D outcomes, and have successfully launched a number of related technology products and services, such as the eLock - Internet of Things Cross-Boundary Fast Clearance Security System developed by the LSCM; the NASK - Nanofiber Smart Bacteria Killing Mask developed by the NAMI; the old clothing recycling system developed by the HKRITA, and the multi-standard mobile smart charger for electric vehicles developed by the APAS, etc.

5. The commercialisation income (including contract service income, licensing fees and royalties) of the four aforementioned R&D Centres has also increased significantly in recent years. Between 2015- 16 and 2018-19, the total commercialisation income received by the four R&D Centres was around $88.17 million, averaging about $22.04 million per year, approximately four times the average annual commercialisation income of $5.625 million between 2011-12 and 2014- 15. Even to assess a single year, in 2018-19, the total amount of commercialisation income was $40.05 million, representing an increase of about 93%, from $20.75 million in 2017-18.

[1] They are the Logistics and Supply Chain MultiTech R&D Centre ("LSCM"), the Nano and Advanced Materials Institute ("NAMI"), the HKRITA and the Automotive Platforms and Application Systems R&D Centre ("APAS").

6. On the other hand, the seven TTOs of universities receiving funding support under the ITF[2] have been actively promoting their R&D outcomes to the industry and the general public through channels including seminars, symposiums and exhibitions. They also participate in various publicity, promotional and business development activities, and have established spin-off companies to develop their R&D outcomes into technology products and services. During the four-year period from 2015-16 to 2018-19, the six TTOs of universities[3] had been granted a total of over 1 900 patents, and organised/attended more than 3 600 activities to promote technology transfer and commercialisation of R&D outcomes.

Technology Start-up Support Scheme for Universities ("TSSSU")

7. Through the TSSSU, the ITF provides funding support for technology start-ups set up by teams of the six universities[4] so that they can commercialise their R&D outcomes. As at 2019-20, the TSSSU has funded 250 start-ups with a total funding amount of around $162 million. A number of TSSSU-funded start-ups have managed to commercialise their R&D results. Examples include a start-up associated with the PolyU which has introduced, with industry collaboration, soft contact lens and spectacle lens that can retard myopia progression in children; and a start- up associated with the HKBU which has developed technology to identify the unique, major bioactive components of valuable Chinese medicines and has already entered into contracts with its clients to provide professional quality and quantity authentication services.

Economic Benefits of the ITF

Enhancing Hong Kong's competitiveness, productivity and Gross Domestic Product ("GDP")

8. We believe that R&D can enhance the competitiveness and productivity of individual enterprises as well as Hong Kong as a whole, thereby benefiting the Hong Kong economy. As at end July 2020, the

[2] The seven universities are the University of Hong Kong ("HKU"), the Chinese University of Hong Kong ("CUHK"), City University of Hong Kong ("CityU"), the Hong Kong University of Science and Technology ("HKUST"), Hong Kong Baptist University ("HKBU"), the Hong Kong Polytechnic University ("PolyU"), and the Education University of Hong Kong ("EdUHK").

[3] The ITC started to provide funding support to the TTO of the EdUHK from 2019-20 onwards. Hence, the statistics for 2018-19 and before cover only six universities.

[4] The six universities are the HKU, CUHK, CityU, HKUST, HKBU and PolyU.

ITF has funded over 4 330 R&D projects with total funding of about $12.6 billion, accounting for over 60% of the total funding amount of the ITF (about $21.2 billion). Amongst the various funding schemes of the ITF, the Innovation and Technology Support Programme ("ITSP") funds local R&D Centres[5], universities and other designated public research institutes to conduct applied R&D projects and many of these R&D outcomes have already been commercialised successfully. For example, the ITSP has supported the HKRITA to conduct an R&D project on textiles recycling to recycle old clothes into fibres for producing yarn and fabric, etc. A local company has adopted this new technology and set up an environmental-friendly yarn production line in the Tai Po Industrial Estate in September 2018, which is the first local spinning mill to have opened in Hong Kong in half a century. This project has not only enhanced the competitiveness of the local textile industry but also benefitted the society as a whole.

9. Apart from R&D, the ITF also encourages technology adoption. The Technology Voucher Programme ("TVP") subsidises local enterprises and organisations to use technological services and solutions to improve productivity, or upgrade or transform their business processes. The TVP helps businesses enhance their productivity and competitiveness, thereby adding impetus to the overall development of Hong Kong economy. To measure the effectiveness of the TVP, applicants are required to submit post-project evaluation reports to the Innovation and Technology Commission ("ITC") six months after project completion on the extent the projects have enhanced their competitiveness through achieving the objectives to improve productivity or upgrade or transform business processes. As at end of June 2020, 398 beneficiary enterprises have submitted evaluation reports to the ITC, 97% of which considered that the projects were conducive to enhancing their competitiveness.

10. To diversify economic development and bring new impetus to the economy of Hong Kong, the ITF has been actively driving the development of "re-industrialisation" in Hong Kong. The ITC launched the $2 billion Re-industrialisation Funding Scheme ("RFS") under the ITF in July to subsidise manufacturers on a 1(Government):2(enterprise) matching basis to set up new smart production lines in Hong Kong. All companies incorporated in Hong Kong under the Companies Ordinance (Cap. 622) are eligible to apply for funding. The maximum funding amount for each project would be one-third of the total approved project cost or $15 million, whichever is lower.

[5] They are the Hong Kong Applied Science and Technology Research Institute, the LSCM, the NAMI, the HKRITA and the APAS.

11. The RFS provides support for local manufacturers to move towards high value-added production and upgrade to "Industry 4.0". The setting up of smart production lines in Hong Kong can provide direct employment opportunities, especially quality I&T jobs for young people. It can also encourage the relevant enterprises to set up supporting business operations in Hong Kong and create demand for other service sectors, such as advertising, testing and certification, etc., thereby creating more employment opportunities and bringing wider economic benefits to different sectors in Hong Kong. The RFS can also help retain in Hong Kong the value chain from R&D to finished goods, thereby creating a clustering effect in attracting start-ups as well as local, Mainland and overseas enterprises, universities, and R&D institutions to conduct R&D work and production in Hong Kong. This would add new impetus to the development of advanced manufacturing industries in Hong Kong.

12. Furthermore, to support the development of "re-industrialisation", the ITC launched the Reindustrialisation and Technology Training Programme under the ITF in 2018 to fund staff of local enterprises on a 2(Government):1(enterprise) matching basis to receive training in advanced technologies, especially those related to "Industry 4.0". As at end of July 2020, the programme has approved funding of about $17.5 million for about 2 400 trainees to receive training in advanced technologies, thereby increasing the overall competitiveness of Hong Kong in terms of labour quality.

Creating employment

13. The ITF funds the operation of organisations such as local R&D Centres, which has created quite a number of employment and training opportunities. For example, in 2018-19, the four local R&D Centres funded by the ITF engaged a total of about 1 500 R&D personnel[6] in their R&D projects, providing a large number of training and employment opportunities for university graduates and technical staff.

14. As for funding schemes, funding for ITF-funded R&D projects can generally be used to pay the emoluments of the relevant project staff, thereby stimulating local employment. Furthermore, the TSSSU under the ITF provides funding support to teaching staff and students of six universities to start technology businesses. As at 2018-19, the 188 start- ups funded under

[6] Including researchers of the four R&D Centres and those from the universities, research institutes and other parties participating in the relevant ITF-funded R&D projects.

the TSSSU had created over 1 000 jobs/training opportunities in total, around 66% of which were technical positions.

Researcher Programme ("RP") and Postdoctoral Hub ("PH")

15. In addition, the RP and PH under the ITF provide funding support for eligible enterprise and organisations to engage local university graduates and postdoctoral talent respectively to conduct R&D work. The funding period has been extended from a maximum of two years to a maximum of three years since February 2019. Since March 2020, the funding scope of the two programmes has been extended from ITF-funded R&D projects and incubatees and I&T tenants of the HKSTPC and the Cyberport to all technology companies conducting R&D activities in Hong Kong to benefit more enterprises and talents.

16. From its launch in 2004 to end June 2020, the RP has approved over 4 980 researcher applications with total funding of about $1.36 billion. For the PH, from its launch in August 2018 to end June 2020, over 1 000 applications have also been approved with total funding of about $580 million. In order to provide more flexibility, the ITC has merged the two programmes to become the Research Talent Hub on 1 July this year, under which each eligible enterprise or organisation can engage up to four I&T talents at bachelor, master or doctoral degree level to encourage and assist local technology talent employment.

Current Status of ITF-Funded Researchers and Start-ups

17. Researchers are required to submit an evaluation report to the ITC after the end of their engagement period under the RP so as to facilitate the ITC's understanding of the researchers' employment situation. For the questionnaires collected in 2019, 53% of the respondents indicated that they had secured an R&D related job, while another 15% indicated that they were still searching for jobs but were interested in scientific and research work. As researchers funded by the RP are free to look for different jobs or continue studies after completion of the engagement, and given the difficulties involved in conducting such surveys, the ITC has not conducted tracking surveys. Therefore, there is no statistical data kept on the number of researchers who are still working in the I&T field.

18. Regarding start-ups funded by the ITF, as at end 2019, 241 TSSSU-funded start-ups were still in operation, whilst the remaining nine had ceased operation. As for other (including incubatees of the

HKSTPC and the Cyberport) funding schemes, the ITC does not have information on whether the funded enterprises continued to operate after completing the relevant projects.

Innovation and Technology Bureau
Innovation and Technology Commission
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