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Panel on Commerce and Industry

Meeting on 19 November 2019

Updated background brief on the Research and Development Centres

Purpose

This paper provides updated background information on the Research and Development ("R&D") Centres set up under the Innovation and Technology Fund¹ ("ITF"). It also summarizes the views and concerns expressed by members of the Panel on Commerce and Industry ("the Panel") during previous discussions on the subject.

Background

2. In June 2005, the Finance Committee ("FC") approved a total commitment of HK\$273.9 million under ITF for establishing the following four R&D Centres and their first five-year operation up to 31 March 2011:

- (a) Automotive Parts and Accessory Systems R&D Centre ("APAS");
- (b) Hong Kong R&D Centre for Logistics and Supply Chain Management Enabling Technologies ("LSCM") (renamed as Logistics and Supply Chain MultiTech R&D Centre in May 2018);
- (c) Hong Kong Research Institute of Textiles and Apparel ("HKRITA");
and

¹ The Innovation and Technology Fund was established by Resolution passed by the Legislative Council on 30 June 1999 as a statutory fund under the Public Finance Ordinance (Cap. 2) to finance projects that contribute to innovation and technology upgrading and development in manufacturing and services industries in Hong Kong with a view to enhancing Hong Kong's economic development.

(d) Nano and Advanced Materials Institute ("NAMI").

3. The four ITF-funded R&D Centres were established in April 2006. At the same time, the R&D Centre for Information and Communications Technologies ("ICT") was also set up under the Hong Kong Applied Science and Technology Research Institute ("ASTRI") with its operating expenditure funded separately by the Government's annual recurrent subvention. Unlike the other four R&D Centres which have been established as independent legal entities, ICT has been established as a limited company wholly owned by the Government.

4. In June 2009, having regard to the performance of the R&D Centres after an interim review, FC approved an increase in the funding commitment by HK\$369 million to extend the operation of four ITF-funded R&D Centres for three years up to 31 March 2014.

Comprehensive reviews on the Research and Development Centres

5. In 2011, the Administration conducted a comprehensive review on the operation and overall performance of the R&D Centres for their first five years. With the support of the Panel and having regard to the outcome of the comprehensive review, FC approved a commitment of HK\$275.3 million in May 2012 to support the continued operation of NAMI and APAS for another three years up to 31 March 2017.² FC further approved an additional grant of HK\$100.8 million under ITF in January 2014 to support the continued operation of HKRITA and LSCM for another two years up to 31 March 2017.³ Their industry contribution target was also raised to 20%.

6. The Administration conducted in 2015 another comprehensive review of the operation of the R&D Centres for the four-year period from 2011-2012 to 2014-2015 to map out the way forward and long-term funding arrangements of the R&D Centres. The performance and operation of ASTRI were also

² For Hong Kong Research Institute of Textiles and Apparel ("HKRITA") and Hong Kong Research and Development ("R&D") Centre for Logistics and Supply Chain Management Enabling Technologies ("LSCM") which had not achieved an industry contribution of 15% in their first five years, their operation period was initially extended to 31 March 2015. The Administration undertook to closely monitor/review the performance of HKRITA and LSCM during a two-year observation period ending March 2013 (i.e. two years after the comprehensive review on the R&D Centres in 2011) with a revised industry contribution target of 18%.

³ At the meetings of the Panel on Commerce and Industry on 18 June and 19 November 2013, members noted that both HKRITA and LSCM had exceeded the industry contribution target of 18% during the two-year observation period ending March 2013 and their performance had shown sustained development and was generally satisfactory.

covered in the review. Despite the different funding arrangements for operating expenditure, ASTRI was subject to the same mechanism of performance monitoring and expected to meet the same industry contribution target. In December 2015, FC approved an additional funding allocation of HK\$677.6 million from ITF to support the operation of the R&D Centres up to 31 March 2021.

7. Since 2005, a total of HK\$1,696.6 million has been approved by FC to fund the operation of the four ITF-funded R&D Centres.

Latest development of the Research and Development Centres

8. According to the Administration, the R&D Centres act as a focal point for technology collaboration among the Government, industry, academia and research sectors and promote the adoption of local technology products and services through active participation in the Public Sector Trial Scheme ("PSTS"). The R&D Centres contribute to the applied research in key areas, and, by undertaking different type of projects which include platform projects,⁴ collaborative projects⁵ and seed projects,⁶ work closely with the industry to encourage investment in R&D in Hong Kong for promoting applied research and driving the commercialization of R&D results.

New performance indicators from 2017-2018 onwards

9. Following the suggestions made by members during the discussion of the additional allocation to the R&D Centres in December 2015, the Administration set new performance indicators to assess the R&D Centres' performance in conducting R&D in collaboration with the industry in order to promote the latter's overall technological level. One of the indicators is the level of income received from the industry.⁷ The Administration raised the

⁴ The industry contribution of platform projects is at least 10% of the project cost, with a cash rebate equivalent to 40% of the expenditure provided under R&D Cash Rebate Scheme ("CRS"). The industry sponsor(s) will not own the project intellectual property ("IP").

⁵ The industry contribution of collaborative projects is at least 30% (for R&D Centre projects only) or 50% (for non-R&D Centre projects) of the project cost, with a cash rebate equivalent to 40% of the expenditure provided under CRS. The industry sponsor(s) will be entitled to utilize the project IP exclusively for a defined period or own the project IP.

⁶ Seed projects are more forward-looking and exploratory projects that aim to provide foundation work for future platform/collaborative projects. No industry contribution is required for seed projects. The funding amount is capped at HK\$2.8 million per project.

⁷ The indicator mainly covers sponsorship from the industry for their R&D projects, income arising from licensing/royalty and contract services, and other income.

target for the indicator to 30% from 2017-2018 onwards and the R&D Centres all reached the target level in 2017-2018. The Administration also set other performance indicators, including the number of R&D projects involving industry participation, the number of companies participating in the R&D projects, the number of organizations benefitting from PSTS, the number of interns engaged, and the number of patents filed, etc.

Relaxing the rule on commercialization income

10. To incentivize commercialization of R&D results of ITF-funded projects and technology transfer activities, from 2017-2018 onwards, the R&D Centres can retain the income generated from those projects (e.g. income generated from the commercialization of project outcomes) for use in strategic activities, such as technology and market analyses, infrastructure building, staff development or experimental projects, etc. The arrangement is on par with that for universities or other public research institutions, and allows flexibility for the R&D Centres to pursue more strategic and non-project-specific initiatives conducive to the development of innovation and technology.⁸

Previous discussions by the Panel on Commerce and Industry

11. The major views and concerns expressed by members at the meetings on 20 June 2017 and 19 June 2018 are summarized in the ensuing paragraphs.

Commercialization of research and development outcomes

12. At the meeting on 19 June 2018, members expressed concern on the progress of commercialization of R&D outcomes and held the view that certain outstanding R&D deliverables (e.g. the nano-modified cementitious waterproof coating developed by NAMI) had not been put to extensive use in the market as they should be. They urged the R&D Centres to put more effort in promoting project technologies to businesses so as to enable wider application of the technologies.

13. The Administration advised that it had attached great importance to the development of R&D Centres and commercialization of R&D results. As such, noting the suggestions made by members at the discussion of the additional allocation to the R&D Centres in December 2015, the Administration had set new performance indicators to assess the R&D Centres' performance in conducting R&D in collaboration with the industry. From 2017-2018 onwards, the target level of industry income was raised from 20% to 30%. The level of

⁸ The governing boards of the R&D Centres may recommend to the Innovation and Technology Commission the usage of the reserve. The R&D Centres are required to submit annual plans and audit reports for the reserve fund.

industry income of all five R&D Centres was able to reach 30% or above in 2017-2018. In order to promote the use of the nano-modified cementitious waterproof coating technology to the industry, the Administration advised that it would collaborate with the Construction Innovation and Technology Application Centre under the Construction Industry Council whereas NAMI would introduce the technology to major local property developers and construction companies.

14. In response to members' enquiry on whether the new production lines brought about by the R&D deliverables were retained in Hong Kong, the Administration advised that it had all along endeavored to retain the production lines in Hong Kong where the industry would be better protected in terms of the intellectual property ("IP") rights, and would continue to encourage the enterprises concerned to set up their production lines in Hong Kong as far as possible. The Administration also advised that the income arising from the IP rights would, regardless of whether the production line was based in Hong Kong, be based on the sales volume.

Outcome of the Public Sector Trial Scheme projects

15. At the meeting on 19 June 2018, in response to members' enquiry about the outcome (e.g. the number and examples of R&D deliverables which were eventually commercialized and launched in the market) of the PSTS projects undertaken by the R&D Centres, the Administration advised that the 130 PSTS projects undertaken by the R&D Centres involved multifarious technologies and products. The Single E-lock Scheme implemented by LSCM in collaboration with the Customs and Excise Department was one of the examples. Another example of successful commercialization was the adoption by a local textile enterprise of HKRITA's textile recycling technology.

Development directions of the Research and Development Centres

16. At the same meeting, members envisaged that there would be an increasing number of collaborative projects between the industry and the R&D Centres after the implementation of the enhanced tax deduction regime for qualifying R&D expenditure. They asked whether the Administration would provide additional manpower and resources for the R&D Centres to cope with the anticipated increase in workload. The Administration advised that it would, together with the Chief Executive Officers of the R&D Centres, assess the future manpower and resource requirements of the R&D Centres and would seek in late 2019 further funding from FC for extending the operation of the R&D Centres beyond 2020-2021.

17. Some members urged the Administration to provide more opportunities for exchanges between the R&D Centres and their counterparts in the Mainland

and overseas countries. Other members suggested that the Administration should consider introducing an award system to recognize the outstanding R&D achievements of project staff or teams and setting up additional R&D Centres focusing on new types of technologies.

18. The Administration advised that the R&D Centres participated actively in international conferences and seminars to learn from and share experience with their Mainland and overseas counterparts. Performance of the R&D teams was reflected in their appraisals and performance-based remuneration.

Performance indicators

19. At the meeting on 20 June 2017, some members asked about the rationale for setting the target for the new performance indicator in respect of the income received from industry at 30% from 2017-2018 onwards. They also requested the Administration to include, in its subsequent annual reports to the Panel, information on the R&D Centres' performance, such as the number of R&D projects involving industry participation, number of companies participating in the R&D projects, number of organizations benefitting from PSTS, number of interns engaged, and number of patents filed, etc.

20. The Administration advised that the performance of R&D Centres was not necessarily reflected solely by the level of industry contribution. The Administration would include a number of new performance indicators in its subsequent annual reports to the Panel to cover their performance in other areas.

Latest position

21. The Administration will brief the Panel on 19 November 2019 on the operation of the R&D Centres and seek the Panel's support to extend the operation of the R&D Centres beyond 2020-2021.

Relevant papers

22. A list of relevant papers is set out in the **Appendix**.

List of relevant papers

Date of meeting	Meeting	Paper
19/6/2018	Panel on Commerce and Industry	<p>Administration's paper on "Progress report on Research & Development Centres for 2017-18" (LC Paper No. CB(1)1097/17-18(04))</p> <p>Updated background brief on the Research and Development Centres prepared by the Legislative Council Secretariat (LC Paper No. CB(1)1097/17-18(05))</p> <p>Summary of the major views and questions expressed by members of the Panel on Commerce and Industry in respect of the operation and performance of the five Research and Development ("R&D") Centres during the discussions on the work of the R&D Centres in the past three years (i.e. from 2015 to 2017) prepared by the Legislative Council Secretariat (LC Paper No. CB(1)972/17-18(01))</p> <p>Administration's response to the major views and questions expressed by members of the Panel on Commerce and Industry on the work of the Research and Development Centres as set out in LC Paper No. CB(1)972/17-18(01) (LC Paper No. CB(1)1097/17-18(06))</p> <p>Administration's follow-up paper (LC Paper No. CB(1)124/18-19(01))</p> <p>Minutes of meeting (LC Paper No. CB(1)1343/17-18)</p>

Date of meeting	Meeting	Paper
20/6/2017	Panel on Commerce and Industry	<p>Administration's paper on "Progress report on Research & Development Centres for 2016-17" (LC Paper No. CB(1)1144/16-17(03))</p> <p>Updated background brief on the Research and Development Centres set up under the Innovation and Technology Fund prepared by the Legislative Council Secretariat (LC Paper No. CB(1)1144/16-17(04))</p> <p>Administration's follow-up paper (LC Paper No. CB(1)1415/16-17(01))</p> <p>Minutes of meeting (LC Paper No. CB(1)1382/16-17)</p>