

ITEM FOR FINANCE COMMITTEE

INNOVATION AND TECHNOLOGY FUND

HEAD 111 – INNOVATION AND TECHNOLOGY

**New Subhead “Midstream Research Programme for Universities
(block vote)”**

HEAD 184 – TRANSFERS TO FUNDS

Subhead 992 “Payment to the Innovation and Technology Fund”

Members are invited to approve –

- (a) the creation of a new block vote subhead under the Innovation and Technology Fund, with a commitment of \$2 billion, for financing projects under the Midstream Research Programme for universities funded by the University Grants Committee; and
- (b) to give effect to (a) above, a supplementary provision of \$2 billion under Head 184 Subhead 992 Payment to the Innovation and Technology Fund.

PROBLEM

We need to encourage our universities to conduct more inter-disciplinary and translational research work, which will provide for further downstream research or product development.

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PROPOSAL

2. The Commissioner for Innovation and Technology, with the support of the Secretary for Innovation and Technology, proposes to inject \$2 billion into the Innovation and Technology Fund (ITF) as endowment capital for generating investment income to establish a Midstream Research Programme (MRP) for universities funded by the University Grants Committee (UGC) ¹.

JUSTIFICATIONS

3. Hong Kong's scientific research efforts are concentrated in our world-class universities. A key issue concerning the development of innovation and technology in Hong Kong is the application and commercialisation of the research outcomes of universities. In the 2016 Policy Address, the Chief Executive announced that the Government had earmarked \$2 billion to support more midstream applied research projects to be undertaken by institutions funded by the UGC.

4. Midstream research primarily arises from established basic² research. It has the potential of leading to further downstream research and development (R&D) work, the outcome of which could be applied or commercialised. It covers a wide range of activities, including concept proofing, laboratory validation, system/process optimisation, prototyping and trials.

5. One of the priorities of the Innovation and Technology Bureau is to promote collaborations between local science and research institutions, and their counterparts outside Hong Kong. Collaborations encourage sharing and exchanges of ideas, and allow institutions to leverage their capabilities and expertise. In recent years, Hong Kong's innovative and technology capabilities are increasingly recognised by Mainland and overseas institutions. Apart from joint research projects, the State Ministry of Science and Technology has recognised 16 laboratories of six UGC-funded universities as Partner State Key Laboratories and has set up six Branches of Chinese National Engineering Research Centres in

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¹ At present, there are eight UGC-funded institutions, including City University of Hong Kong, Hong Kong Baptist University, Lingnan University, the Chinese University of Hong Kong, the Education University of Hong Kong, the Hong Kong Polytechnic University, the Hong Kong University of Science and Technology and the University of Hong Kong.

² Basic research is experimental or theoretical work undertaken primarily to acquire new knowledge of the underlying foundation of phenomena and observable facts without any particular application or use in view.

Hong Kong. In addition, the Massachusetts Institute of Technology established its first overseas Innovation Node in Hong Kong in June 2016 and the Karolinska Institutet of Sweden plans to open its first overseas research facility in Hong Kong later this year.

6. While there are other funding programmes for R&D projects under the UGC, the Research Grants Committee and the ITF, we note that university researchers tend to give more focus on academic or exploratory research. There is thus a need for a dedicated programme to encourage UGC-funded institutions to focus more on midstream research (not necessarily with industry sponsorship as normally required for midstream research projects conducted under existing programmes with funding support from the ITF), so that more research outcomes could be made available for further downstream research or development of new products or services.

EXPECTED BENEFITS

7. We expect that with the proposed funding injection, we will be able to strengthen our support for UGC-funded institutions in conducting theme-based midstream research in key technology areas. The MRP will also foster more collaborative efforts among local and overseas universities and research institutions, upgrade the R&D talent pool and foster an innovation and technology culture and ecosystem.

FUNDING MECHANISM

8. The main features of the MRP for UGC-funded institutions to be established under the ITF are –

- (a) **Research themes** – We will, in consultation with the UGC, academia and other stakeholders, set specific research topics for the MRP. Project applicants will be required to demonstrate how their projects could be relevant to these themes;
- (b) **Project duration and amount** – Each project should normally be completed within three years³. Having regard to the projected funding from the investment income from the \$2 billion endowment

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³ For other R&D funding schemes under the ITF, the maximum project duration is between two to three years. For research project grants under the Research Endowment Fund for UGC-funded institutions, the maximum project duration is between one to five years.

fund as well as the quantum of funding required for each midstream research project, we propose to impose a ***funding ceiling of \$5 million for each project*** except for inter-discipline or multi-institution collaboration projects as stated in (c) below. As the focus is on midstream research work, we will not require mandatory industry sponsorship;

- (c) **Inter-discipline and/or multi-institution collaboration** – All research projects require close collaborative efforts of experts. While the lead applicant of an MRP project must be a UGC-funded institution and that the majority of the research work should be carried out in Hong Kong, we propose to accord ***priority and a higher funding ceiling of \$10 million*** to each project that involves collaboration of researchers across multiple disciplines or research institutions;
- (d) **Intellectual Property Rights (IPRs)** – The IPRs of the projects will be vested with the lead applicant. The relevant institution is encouraged to disseminate the research outcomes to the industry after project completion by means of licensing or contract services. The benefits arising therefrom may be retained by the lead applicant or shared with its partner institution(s) on an equitable and proportional basis in accordance with the established policy of the respective institutions; and
- (e) **Application and assessment mechanism** – We will invite applications bi-annually. Expert panels will assess applications in the respective technology areas with the following criteria –
 - (i) Innovation and technology component;
 - (ii) Technical capability;
 - (iii) Financial considerations;
 - (iv) Plan for downstream research and/or product development activities;
 - (v) Relevance with Government policies or overall interest of the community;
 - (vi) IP rights and benefit sharing; and
 - (vii) Management capability of the research team.

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The panels will comprise experts from the academia and industry to ensure a fair and balanced assessment of applications. Based on the above assessment criteria, the expert panel will provide its recommendations to the Innovation and Technology Commission (ITC) for funding approval.

9. We will review the above features of the MRP from time to time having regard to the operational experience and consult the relevant Legislative Council (LegCo) Panel on any adjustments (such as the funding ceilings for research projects) considered appropriate or necessary.

CONTROL AND REVIEW MECHANISM

10. ITC will put in place an appropriate control and review mechanism to ensure that funds for the MRF are utilised in an efficient and effective manner. To minimise additional administrative burdens, the mechanism will closely mirror that of other funding schemes under the ITF. It would include measures to prevent duplications of government funding for the same area(s) in a research project.

11. ITC will promulgate funding guidelines for the MRP, including the control and review mechanism. The lead applicant will be required to sign a project agreement with the Government. All approved projects will be monitored by ITC against the milestones stated in the applications. Universities have to submit progress reports periodically until project completion. Upon project completion, universities should also submit final reports and audited accounts of the projects to ITC.

12. Furthermore, to ensure compliance with the funding guidelines, ITC will conduct progress meetings or site inspections with the project teams where appropriate to monitor the project progress and usage of funds as reported in the progress or final reports and audited accounts. Subject to the fulfilment of the approved project milestones, ITC will disburse funds by instalments in accordance with the prescribed cash flow schedule of each project. In case of non-compliance with the funding guidelines or where project progress is unsatisfactory, ITC may withhold disbursement of funds or terminate the project where appropriate.

13. Two years after completion of the research project funded under the MRP, the university will be required to file a post-evaluation report to ITC. In the

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report, the university will need to indicate whether and how the project has led to further downstream R&D activities, which in turn may lead to the development of new products or services. Such information would be useful for our review of the MRP in due course. We will report progress on the operation of the MRP to the relevant LegCo Panel as appropriate.

FINANCIAL IMPLICATIONS

14. The proposed \$2 billion injection into the ITF (the principal) is an endowment for the MRP and will share the same investment return from the fiscal reserves held under the Operating and Capital Reserves (i.e. outside the Future Fund). The funding requirements for the MRF will have to be met from the investment return from the endowment.

15. Taking into account the recent performance of the financial market, we estimate that the annual investment returns will be in the range of 2.6% to 3.5%, which is equivalent to around \$52 million to \$70 million from the \$2 billion principal. ITC will need to plan and adjust the funding provision for the midstream research projects within the limits of the investment returns. Subject to this, ITC may, in consultation with the Financial Services and Treasury Bureau, make use of a small portion of the principal in the exceptional circumstances where it is considered necessary to address the funding shortfall in a particular year owing to insufficient cumulative income from investment returns.

16. The annual recurrent expenditure of the MRP is about \$3.8 million. This is mainly for the engagement of staff to implement the programme, publicity and promotion, etc. We have earmarked sufficient provision for ITC in the 2016-17 Estimates to meet the recurrent expenditure of the proposal.

17. Subject to Members' approval, we will create a new and dedicated block vote subhead under Head 111 Innovation and Technology to finance the projects under the MRF and arrange the transfer of the supplementary provision of \$2 billion under Head 184 Transfers to Funds from the General Revenue Account to the ITF.

IMPLEMENTATION PLAN

18. Subject to Members' approval of the proposed injection and completion of necessary preparatory work, we strive to launch the MRP within 2016-17.

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PUBLIC CONSULTATION

19. Subsequent to the announcement by the Chief Executive in the 2016 Policy Address, we briefed the LegCo Panel on Commerce and Industry on the proposal on 19 January and 17 May 2016. Members supported the proposal.

20. We have also consulted the UGC-funded institutions and exchanged views with the Education Bureau and UGC Secretariat on the implementation details of the MRP. They supported the launch of the MRP and we have also incorporated their comments in the proposal.

BACKGROUND

Establishment of the ITF and Authority

21. The ITF was established by Resolution passed by the 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 innovation and technology upgrading and development in manufacturing and services industries in Hong Kong with a view to enhancing Hong Kong's economic development. The Finance Committee approved, on 9 July 1999, vide FCR(1999-2000)36, an appropriation of \$5 billion to the ITF, and on 27 February 2015, vide FCR(2014-15)57, a further injection of \$5 billion into the ITF.

Key Funding Programmes of the ITF

22. At present, there are three funding programmes under the ITF that support R&D activities –

- (a) the **Innovation and Technology Support Programme** which supports applied R&D projects mainly undertaken by the five R&D Centres set up by the Government, local universities and other designated local public research institutions;
- (b) the **University-Industry Collaboration Programme** which supports collaborative projects undertaken by private companies in collaboration with local universities in the form of matching grant; and
- (c) the **Enterprise Support Programme** which provides dollar-for-dollar matching fund for in-house R&D projects conducted by companies.

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

- (a) the **Patent Application Grant** that provides funding support for patent applications; and
- (b) the **Internship Programme** that supports organisations undertaking ITF projects to recruit graduates from local universities as interns. The programme will be expanded to cover incubatees and small and medium enterprise-tenants of the Hong Kong Science Park (HKSP) and Cyberport.

24. In addition, the **Public Sector Trial Scheme** provides additional funding of up to 100% of the original R&D cost to completed R&D projects funded by the ITF for the production of tools/prototypes/samples and the conducting of trials in the public sector. The scheme will be expanded to cover incubatees⁴ of the HKSP and Cyberport in 2016-17.

25. To provide a more stable and longer-term support to sustain the promotion of private sector investment in R&D, the R&D Cash Rebate Scheme (CRS) was subsumed under the ITF since April 2016. The CRS provides cash rebate to private companies on their investment in R&D projects funded by the ITF or conducted in partnership with designated public research institutions. The level of cash rebate has been raised to 40% of the private investment with effect from 24 February 2016.

Innovation and Technology Bureau
Innovation and Technology Commission
June 2016

⁴ Incubatees include graduate-tenants i.e. graduates from the incubation programme who stay on as tenants.