# Head 155 — GOVERNMENT SECRETARIAT: INNOVATION AND TECHNOLOGY COMMISSION

**Controlling officer:** the Commissioner for Innovation and Technology will account for expenditure under this Head.

**Estimate 2018–19** ..... **$692.0m**

**Establishment ceiling 2018–19** (notional annual mid-point salary value) representing an estimated 228 non-directorate posts as at 31 March 2018 rising by 49 posts to 277 posts as at 31 March 2019..... **$180.3m**

In addition, there will be an estimated eight directorate posts as at 31 March 2018 rising by one post to nine posts as at 31 March 2019.

## Controlling Officer's Report

**Programmes**

| | |
|---|---|
| **Programme (1) Support for Research and Development**<br>**Programme (2) Fostering University-Industry Collaboration**<br>**Programme (3) Promotion of Technological Entrepreneurship**<br>**Programme (4) Planning for Innovation and Technology Development**<br>**Programme (5) Infrastructural Support** | These programmes contribute to Policy Area 17: Information Technology and Broadcasting (Secretary for Innovation and Technology). |
| **Programme (6) Quality Support** | This programme contributes to Policy Area 15: Health (Secretary for Food and Health) and Policy Area 17: Information Technology and Broadcasting (Secretary for Innovation and Technology). |
| **Programme (7) Subvention: Hong Kong Productivity Council, Hong Kong Applied Science and Technology Research Institute Company Limited** | This programme contributes to Policy Area 17: Information Technology and Broadcasting (Secretary for Innovation and Technology). |

**Detail**

**Programme (1): Support for Research and Development**

| | 2016–17 (Actual) | 2017–18 (Original) | 2017–18 (Revised) | **2018–19 (Estimate)** |
|---|---|---|---|---|
| Financial provision ($m) | 48.7 | 55.5 | 55.9 (+0.7%) | **62.5** (+11.8%) (or +12.6% on 2017–18 Original) |

***Aim***

**2** The aim is to promote and support applied research and development (R&D) activities which can contribute to innovation and technology (I&T) upgrading in industry.

***Brief Description***

**3** The Commission achieves this aim by providing funding support and putting in place appropriate infrastructural facilities to encourage applied R&D activities. The Innovation and Technology Support Programme (ITSP) under the Innovation and Technology Fund (ITF) supports applied R&D projects with a view to transferring the results to companies in the relevant industry. The Guangdong-Hong Kong Technology Co-operation Funding Scheme (TCFS) under the ITSP supports applied R&D projects which will facilitate economic development in the Greater Pearl River Delta (PRD) region. The Midstream Research Programme for Universities (MRP) supports institutions funded by the University Grants Committee to carry out more theme-based midstream research in key technology areas, which has the potential of leading to further downstream R&D work or product development. The Commission also administers the Patent Application Grant (PAG) to provide funding assistance to local companies and individuals applying for patent registration of their own inventions for the first time.

**4** Five R&D centres were established in April 2006 to drive and co-ordinate R&D efforts in five focus areas, namely: nanotechnology and advanced materials, textiles and clothing, automotive parts and accessory systems, logistics and supply chain management enabling technologies, and information and communications technologies (ICT). The R&D projects carried out by these centres, except for those contract researches the full costs of which are borne by sponsoring companies, are funded mainly by the ITF.

**5** Funding assistance is provided to Partner State Key Laboratories in Hong Kong and Hong Kong Branches of Chinese National Engineering Research Centres to enhance their research capabilities. Financial support is also provided to six local universities to enhance their technology transfer capabilities.

**6** Under the R&D Cash Rebate Scheme, companies conducting applied R&D projects with the support of the ITF or in partnership with designated local public research institutions enjoy a cash rebate of 40 per cent on their investments.

**7** The performance under this programme is indicated by the extent to which the applied R&D activities receiving funding support is of relevance to the industry and the extent to which the R&D centres accomplish their research programmes effectively. Performance indicators in respect of the ITSP, TCFS, MRP, PAG, R&D centres and R&D Cash Rebate Scheme are as follows:

***Indicators***

| | 2016 (Actual) | 2017 (Actual) | **2018 (Estimate)** |
|---|---|---|---|
| ITSPΨ | | | |
| applications received and processed | 483 | 477 | **454** |
| projects funded and being monitored | 380 | 414 | **425** |
| TCFS | | | |
| applications received and processed | 88 | 0# | **63** |
| projects funded and being monitored | 68 | 66 | **70** |
| MRPΩ | | | |
| applications received and processed | N.A. | 111 | **110** |
| projects funded and being monitored | N.A. | 8 | **21** |
| PAG | | | |
| applications received and processed | 301 | 332 | **295** |
| projects funded | 166 | 177 | **168** |
| R&D centres' projectsγ | | | |
| Automotive Parts and Accessory Systems R&D Centre | | | |
| new projects | 11 | 11 | **18** |
| projects funded and being monitored | 57 | 61 | **72** |
| Hong Kong R&D Centre for Information and Communications Technologies | | | |
| new projects | 29 | 54 | **47** |
| projects funded and being monitored | 93 | 109 | **122** |
| Hong Kong R&D Centre for Logistics and Supply Chain Management Enabling Technologies | | | |
| new projects | 15 | 28 | **26** |
| projects funded and being monitored | 45 | 65 | **73** |
| Nano and Advanced Materials Institute | | | |
| new projects | 44 | 47 | **49** |
| projects funded and being monitored | 137 | 163 | **153** |
| Hong Kong Research Institute of Textiles and Apparel | | | |
| new projects | 23 | 18^ | **20** |
| projects funded and being monitored | 76 | 81 | **66** |
| R&D Cash Rebate Scheme | | | |
| applications received and processed | 271 | 295 | **295** |
| applications approved | 255 | 292 | **292** |

Ψ The figures do not include applications submitted or projects undertaken by the five R&D centres, which are reported under the indicators "R&D centres' projects".

\# The drop in the number of TCFS applications received and processed in 2017 was due to the postponement of the solicitation exercise tentatively to early 2018.

Ω New indicators as from 2017.

γ All projects (including TCFS projects and feasibility studies) undertaken and/or monitored by R&D centres are included.

^ The Centre needed more time to prepare some project proposals on cross-discipline researches and involving higher level of complexity, which will be submitted in early 2018.

***Matters Requiring Special Attention in 2018–19***

**8** During 2018–19, the Commission will:

- pursue legislative amendment to provide enhanced tax deduction for qualified R&D activities carried out by companies,
- continue to administer the various funding programmes and monitor progress of the funded projects,
- continue to support the activities of the R&D centres with emphasis on technology transfer of funded projects, and
- continue to administer the R&D Cash Rebate Scheme to reinforce the research culture among companies and encourage them to establish stronger partnership with designated local public research institutions.

**Programme (2): Fostering University-Industry Collaboration**

| | 2016–17 (Actual) | 2017–18 (Original) | 2017–18 (Revised) | **2018–19 (Estimate)** |
|---|---|---|---|---|
| Financial provision ($m) | 6.9 | 7.4 | 7.7 (+4.1%) | **8.3** (+7.8%) (or +12.2% on 2017–18 Original) |

***Aim***

**9** The aim is to promote university-industry partnership in R&D projects.

***Brief Description***

**10** The Commission achieves this aim through administering the University-Industry Collaboration Programme (UICP) under the ITF to support commercial R&D projects undertaken by companies in collaboration with local universities. Companies in the private sector are encouraged to invest and leverage the knowledge and resources of local universities through three schemes under the UICP, namely: the Teaching Company Scheme, Matching Grant for Joint Research, and Industrial Research Chair Scheme. The Teaching Company Scheme provides financial incentives to local companies to take on graduate students from local universities to assist in proprietary R&D work. Under the Matching Grant for Joint Research, companies contribute half of the project cost of R&D projects taken up jointly with local universities. They are also able to hold the intellectual property rights arising from the projects. The Industrial Research Chair Scheme provides funding support to the research efforts of universities and industry in technology fields.

**11** The UICP received a total of 26 applications requesting $45.6 million in 2017.

**12** The key performance indicators are:

***Indicators***

| | 2016 (Actual) | 2017 (Actual) | **2018 (Estimate)** |
|---|---|---|---|
| UICP | | | |
| applications received and processed | 28 | 26 | **25** |
| projects funded and being monitored | 77 | 87 | **84** |

***Matters Requiring Special Attention in 2018–19***

**13** During 2018–19, the Commission will continue to administer the UICP and monitor progress of the funded projects.

**Programme (3): Promotion of Technological Entrepreneurship**

| | 2016–17 (Actual) | 2017–18 (Original) | 2017–18 (Revised) | **2018–19 (Estimate)** |
|---|---|---|---|---|
| Financial provision ($m) | 14.9 | 22.5 | 19.7 (–12.4%) | **22.7** (+15.2%) (or +0.9% on 2017–18 Original) |

***Aim***

**14** The aim is to promote technological entrepreneurship in Hong Kong and provide essential support to technology-based entrepreneurial activities and technology R&D in the private sector.

***Brief Description***

**15** To encourage more private sector investment in R&D, the Commission launched in April 2015 the Enterprise Support Scheme (ESS) under the ITF to replace the Small Entrepreneur Research Assistance Programme (SERAP). The ESS provides funding support to registered Hong Kong companies of all sizes to carry out R&D on I&T. The Applied Research Fund (ARF) provides funding to technology companies in Hong Kong at the venture capital stage but has been in a winding down mode since 2005.

**16** The Commission administers the Technology Start-up Support Scheme for Universities (TSSSU). The TSSSU provides funding to six local universities to support their teams to start technology businesses and commercialise their R&D results. In addition, the Commission works closely with the Hong Kong Science and Technology Parks Corporation (HKSTPC) which operates incubation programmes to provide technology start-ups with support in marketing, finance, technology and management in their critical initial years of operation. HKSTPC also launched in 2015 a Corporate Venture Fund (CVF). The CVF co-invests with private funding in promising technology start-ups, which are tenants in the Hong Kong Science Park (HKSP), or incubatees or graduates of its incubation programmes. To provide more support to I&T start-ups in Hong Kong, the Commission launched the Innovation and Technology Venture Fund (ITVF) in 2017. The ITVF will co-invest with private organisations, venture capital funds and angel investors in the eligible I&T start-ups in Hong Kong.

**17** During 2017–18, the Commission:

- administered and monitored projects approved under the SERAP,
- administered TSSSU,
- publicised the ESS via talks and seminars,
- administered and monitored projects approved under the ESS,
- administered the preparatory work relating to the ITVF and launched the ITVF, and
- monitored the residual work relating to the ARF.

**18** The key performance measures are:

***Indicators***

| | 2016 (Actual) | 2017 (Actual) | **2018 (Estimate)** |
|---|---|---|---|
| SERAP | | | |
| applications received and processed | N.A.μ | N.A.μ | **N.A.μ** |
| projects funded and being monitored | 91 | 81 | **57** |
| ESS | | | |
| applications received and processed | 160 | 112 | **118** |
| projects funded and being monitored | 22 | 35 | **48** |

μ Applications for SERAP were no longer accepted since 28 April 2015.

***Matters Requiring Special Attention in 2018–19***

**19** During 2018–19, the Commission will:

- pursue legislative amendment to avoid off-shore funds from losing their profits tax exemption status when they co-invest with the ITVF,
- continue to administer the ESS,
- continue to monitor progress of the funded projects under the SERAP and the ESS,
- continue to administer TSSSU,
- continue to administer the ITVF, and
- continue to monitor the residual work relating to the ARF.

**Programme (4): Planning for Innovation and Technology Development**

| | 2016–17 (Actual) | 2017–18 (Original) | 2017–18 (Revised) | **2018–19 (Estimate)** |
|---|---|---|---|---|
| Financial provision ($m) | 42.8 | 55.8 | 55.1 (–1.3%) | **67.1** (+21.8%) (or +20.3% on 2017–18 Original) |

***Aim***

**20** The aim is to support the formulation and co-ordination of I&T policies and sustain public awareness of I&T.

***Brief Description***

**21** The Commission provides secretariat support to the Committee on Innovation, Technology and Re-industrialisation chaired by the Financial Secretary. The Committee advises the Government on matters relating to the promotion of I&T development and re-industrialisation in Hong Kong, and puts forward appropriate development strategies and work proposals to enhance co-operation and co-ordination among stakeholders.

**22** The Commission supports technology co-operation with the Mainland and overseas economies, and participates in relevant regional and international activities which help promote I&T.

**23** To enhance public awareness and understanding of the importance of I&T, the Commission organises promotional events locally and administers the General Support Programme (GSP) under the ITF to fund projects such as seminars, exhibitions and student technology competitions which help foster an I&T culture.

**24** The Commission also administers an Internship Programme which provides financial support for organisations to recruit interns to assist in R&D projects funded by the ITF or undertaken by incubatees and small and medium enterprise (SME) tenants of HKSTPC and Cyberport. It aims to provide opportunities for graduates from tertiary institutions to acquire research and industrial experience, stimulate the interest of graduates in applied R&D activities and help create a larger pool of research talents. To benefit more enterprises and graduates, the Internship Programme has been further extended to cover R&D projects undertaken by all I&T tenants of HKSTPC and Cyberport since December 2017.

**25** To enhance the long-term competitiveness of local SMEs, the Commission administers the Technology Voucher Programme (TVP) which aims to subsidise local SMEs in using technological services and/or solutions to improve productivity, or upgrade or transform their business processes.

**26** During 2017–18, the Commission:

- enhanced technology co-operation with the Mainland at the central, regional, provincial and municipal levels through various co-operation mechanisms, including the Mainland/Hong Kong Science and Technology Co-operation Committee, the Pan-PRD Joint Conference on Regional Co-operation in Science and Technology, the Guangdong/Hong Kong Expert Group on Co-operation in Innovation and Technology, and the Steering Group on Shenzhen/Hong Kong Co-operation in Innovation and Technology;
- organised the InnoTech Month (ITM) 2017 to promote I&T to the general public, in particular the youth. Activities of the ITM included a promotional truck campaign roving around different districts in Hong Kong, a nine-day InnoCarnival, road shows, seminars, competitions, technology workshops and publication of science education books for young children;
- supported the Innovation and Technology Scholarship Award Scheme to nurture young talents to become future leaders in I&T;
- participated in the SmartBiz Expo to promote the five R&D centres and to introduce the Commission's funding schemes to visitors;
- completed the nomination exercise for the Hong Kong Special Administrative Region in two categories of the State Science and Technology Awards, namely the State Technological Invention Award and the State Scientific and Technological Progress Award;
- enhanced promotion at enterprise level through organising a "Hong Kong Pavilion" at the China Hi-Tech Fair 2017;
- increased the monthly allowance for interns under the Internship Programme and further extended the coverage of the Programme to all I&T tenants of HKSTPC and Cyberport;
- administered the TVP and publicised the TVP via briefings; and
- supported the development of Chinese medicines, and co-ordinated various parties in promoting the development of R&D and testing of Chinese medicines through a government-led committee.

**27** The key performance indicators are:

***Indicators***

| | 2016 (Actual) | 2017 (Actual) | **2018 (Estimate)** |
|---|---|---|---|
| GSP | | | |
| applications received and processed | 26 | 29 | **25** |
| projects funded and being monitored | 75 | 79 | **84** |
| Internship Programme | | | |
| applications received and processed | 358 | 713δ | **806** |
| intern positions funded | 722 | 969δ | **1 289** |
| TVPΩ | | | |
| applications received and processed | N.A. | 324 | **356** |
| projects funded and being monitored | N.A. | 302 | **627** |

δ The figures increased significantly in 2017 due to the extension of the Internship Programme in December 2016.
Ω New indicators as from 2017.

***Matters Requiring Special Attention in 2018–19***

**28** During 2018–19, the Commission will:

- implement a Technology Talent Scheme and roll out a pilot fast-track admission scheme for technology talents;
- continue to strengthen technology co-operation with the Mainland through established co-operation mechanisms;
- continue to administer the GSP, including the Internship Programme, and monitor progress of the funded projects;
- continue to administer the TVP and monitor progress of the funded projects;
- continue to promote I&T culture to the general public and nurture more young innovative talents;
- continue to nominate entries for the State Science and Technology Awards; and
- continue to organise promotional and educational activities to enhance public awareness on I&T development.

**Programme (5): Infrastructural Support**

| | 2016–17 (Actual) | 2017–18 (Original) | 2017–18 (Revised) | **2018–19 (Estimate)** |
|---|---|---|---|---|
| Financial provision ($m) | 12.1 | 13.7 | 14.1 (+2.9%) | **57.3** (+306.4%) (or +318.2% on 2017–18 Original) |

***Aim***

**29** The aim is to develop world-class support infrastructure to facilitate technological upgrading and development of the industry and to promote I&T.

***Brief Description***

**30** The Commission achieves the aim through planning, supporting and overseeing technological infrastructural projects; and participating actively in the formulation and implementation of planning and development policies by other government bureaux and departments which impinge on I&T development in Hong Kong. The Commission works closely with relevant industry support organisations such as the HKSTPC, the Hong Kong Applied Science and Technology Research Institute Company Limited (ASTRI) and the Hong Kong Productivity Council (HKPC) in the process.

**31** During 2017–18, the Commission:

- worked closely with the HKSTPC on various major initiatives, including implementation of Stage 1 of the Science Park Expansion Programme, and development of the Advanced Manufacturing Centre and Data Technology Hub under the revised Industrial Estate (IE) policy;

- worked closely with the ASTRI in strengthening their institutional and research capabilities to develop its ICT R&D Centre; and
- monitored the delivery of value-added support services to the manufacturing and related service industries by the HKPC.

***Matters Requiring Special Attention in 2018–19***

**32** During 2018–19, the Commission will:

- work on the setting up of two research clusters, one on healthcare technologies and another on artificial intelligence/robotics technologies, in Hong Kong;
- continue to work closely with the HKSTPC on the implementation of its various new developments and business plans of the HKSP and the IEs;
- continue to work closely with the HKSTPC and the Hong Kong-Shenzhen Innovation and Technology Park Limited on the work for the development of the Hong Kong-Shenzhen Innovation and Technology Park in the Lok Ma Chau Loop; and
- continue to assist the ASTRI in strengthening its R&D capabilities and leading research programmes of its core competences as organised under seven Technology Divisions, namely Advanced Digital Systems, Mixed Signal System IC, Opto-electronics, Electronics Components, Intelligent Software and Systems, Security and Data Sciences, and Communications Technologies.

**Programme (6): Quality Support**

| | 2016–17 (Actual) | 2017–18 (Original) | 2017–18 (Revised) | **2018–19 (Estimate)** |
|---|---|---|---|---|
| Financial provision ($m) | 124.4 | 109.7 | 114.1 (+4.0%) | **118.3** (+3.7%) (or +7.8% on 2017–18 Original) |

***Aim***

**33** The aim is to promote internationally accepted standards and conformity assessment services to underpin technological development and international trade, and the development of the testing and certification industry in Hong Kong.

***Brief Description***

**34** The Commission achieves this aim through the operation of the Standards and Calibration Laboratory (SCL), the Product Standards Information Bureau (PSIB), the Hong Kong Accreditation Service (HKAS) and the Secretariat of the Hong Kong Council for Testing and Certification (HKCTC).

**35** Through participation in Mutual Recognition Arrangement (MRA) drawn up by the International Committee for Weights and Measures (CIPM), SCL's calibration certificates are accepted worldwide.

**36** Through the MRAs signed with international and regional organisations of accreditation bodies, the endorsed test reports and accredited certificates issued by organisations accredited by the HKAS under the Hong Kong Laboratory Accreditation Scheme (HOKLAS), the Hong Kong Certification Body Accreditation Scheme (HKCAS) and the Hong Kong Inspection Body Accreditation Scheme (HKIAS) are recognised worldwide.

**37** During 2017–18,

- SCL took part in the following international metrology activities to substantiate its CIPM MRA claims for worldwide recognition:
  - participation in the inter-laboratory comparisons of measurement standards and proficiency testing programmes,
  - participation in the peer reviews of the capabilities and quality systems of other CIPM MRA partners,
  - publication of its technical achievements at international conferences and journals, and
  - participation in the Asia-Pacific Metrology Programme General Assembly/Technical Committees;
- HKAS extended its accreditation service to conformity assessment bodies for veterinary testing and for scene of crime investigation respectively in October 2017 and December 2017;

- PSIB participated in the Asia-Pacific Economic Cooperation (APEC) Sub-Committee on Standards and Conformance, the International Organization for Standardization (ISO) and Pacific Area Standards Congress (PASC). PSIB also hosted two plenary meetings of ISO technical committees; and
- the Secretariat of the HKCTC continued to provide support to the HKCTC in implementing measures to support the development of the testing and certification industry.

**38** The key performance measures for the SCL, PSIB and HKAS are:

***Targets***

| | Target working days | 2016 (Actual) | 2017 (Actual) | **2018 (Plan)** |
|---|---|---|---|---|
| processing of quotation for calibration services | 2 | 2 | 2 | **2** |
| calibration of equipment | 13 | 13 | 13 | **13** |
| processing of simple enquiries on product standards | 1 | 1 | 1 | **1** |
| processing of complicated enquiries on product standards | 8 | 8 | 8 | **8** |
| issue of quotations for documented standards | 1 | 1 | 1 | **1** |
| processing of orders for photocopies of documented standards | 2 | 2 | 2 | **2** |

***Indicators***

| | 2016 (Actual) | 2017 (Actual) | **2018 (Estimate)** |
|---|---|---|---|
| SCL | | | |
| calibrations performed | 1 174 | 1 264 | **1 270** |
| revenue generated ($) | 3,543,120 | 3,906,929 | **3,900,000** |
| SCL's overseas CIPM MRA partners (cumulative)§ | 102 | 102 | **102** |
| PSIB | | | |
| technical enquiries | 375 | 358 | **380** |
| sales and photocopying of documented standards enquiries | 125 | 149 | **130** |
| quotations given | 720 | 899 | **800** |
| orders placed | 74 | 73 | **70** |
| revenue generated ($) | 77,600 | 95,860 | **85,000** |
| HOKLAS | | | |
| accredited laboratories (cumulative) | 218 | 226 | **231** |
| assessments, re-assessments and surveillance visits conducted | 403 | 422 | **410** |
| overseas laboratory accreditation schemes with MRA with the HOKLAS (cumulative) | 88 | 92 | **91** |
| HKCAS | | | |
| accredited certification bodies (cumulative) | 24 | 25 | **25** |
| assessments, re-assessments and surveillance visits conducted | 69 | 91 | **80** |
| overseas certification bodies accreditation schemes with MRA with the HKCAS (cumulative) | 62 | 66 | **65** |
| HKIAS | | | |
| accredited inspection bodies (cumulative) | 19 | 22 | **22** |
| assessments, re-assessments and surveillance visits conducted | 24 | 23 | **24** |
| overseas inspection bodies accreditation schemes with MRA with the HKIAS (cumulative) | 60 | 66 | **66** |

§ This indicator provides information on how well SCL's measurement standards and calibration certificates are recognised internationally. These figures include all CIPM MRA partners, which comprise overseas national metrology institutes and four international organisations, namely International Atomic Energy Agency (IAEA), Joint Research Centre (JRC), World Meteorological Organization (WMO) and European Space Agency (ESA).

***Matters Requiring Special Attention in 2018–19***

**39** During 2018–19, the Commission will continue to:

- provide support to the HKCTC in implementing measures to support the development of the testing and certification industry;
- pursue further liberalisation measures relevant to the testing and certification industry under the Mainland and Hong Kong Closer Economic Partnership Arrangement (CEPA);
- participate in activities to promote the MRAs of the Asia Pacific Laboratory Accreditation Co-operation, the International Laboratory Accreditation Co-operation, the Pacific Accreditation Co-operation and the International Accreditation Forum;
- develop plans to extend accreditation services to other areas to support industry and continue to work closely with the HKCTC to promote existing accreditation services to industry;
- participate in the activities of the CIPM MRA and the Asia Pacific Metrology Programme;
- participate in more projects on inter-laboratory comparison of measurement standards;
- strengthen interactions between staff of the SCL and local metrology users with a view to disseminating measurement techniques and knowledge to local industries;
- conduct visits to SCL customers to gauge their needs and offer professional advice on-site;
- participate in APEC, ISO and PASC activities in the areas of standards and conformance; and
- participate in international standardisation activities.

**Programme (7): Subvention: Hong Kong Productivity Council, Hong Kong Applied Science and Technology Research Institute Company Limited**

| | 2016–17 (Actual) | 2017–18 (Original) | 2017–18 (Revised) | **2018–19 (Estimate)** |
|---|---|---|---|---|
| Financial provision ($m) | | | | |
| Hong Kong Productivity Council | 200.9 | 213.0 | 215.9 (+1.4%) | **205.6** (–4.8%) (or –3.5% on 2017–18 Original) |
| Hong Kong Applied Science and Technology Research Institute Company Limited | 140.0 | 143.6 | 143.6 (—) | **150.2** (+4.6%) (or +4.6% on 2017–18 Original) |
| Total | 340.9 | 356.6 | 359.5 (+0.8%) | **355.8** (–1.0%) (or –0.2% on 2017–18 Original) |

*HKPC*

***Aim***

**40** The aim is to promote productivity excellence through the provision of integrated support across the value chain of the industry, in order to achieve more effective utilisation of resources, enhance the value-added content of products and services, and enhance the industry's international competitiveness and sustainability.

***Brief Description***

**41** The HKPC provides integrated support to innovative and growth-oriented Hong Kong firms across the value chain. Its principal sectoral focus is on manufacturing, particularly in Hong Kong's foundation industries, and related service activities. The main geographical focus is Hong Kong and the Mainland.

**42** The work of the HKPC is anchored on its core competence of manufacturing technologies, management systems, information technologies and environmental technologies, including the following:

- providing one-stop services to the manufacturing industries, particularly the foundation industries, in the areas of manufacturing and materials technology, product design and development, technology commercialisation and i-manufacturing;
- promoting re-industrialisation and assisting the relevant enterprises in moving towards high value-added production;
- promoting the application of good management practices and continuous benchmarking across the value chain for innovative and growth-oriented enterprises, especially SMEs, through operation management, human resources management, innovation management, knowledge management, strategic business management, corporate social responsibility and sectoral platforming with quality certification schemes;
- assisting information technology (IT) service providers, in particular SMEs, to improve their quality, capacity and productivity, and supporting the integration of IT services across the value chain;
- providing environmental technology support in green manufacturing, efficient energy and resource usage, compliance with environmental legislation and internal standards, as well as environmental methods and technology transfer; and
- operating the Automotive Parts and Accessory Systems R&D Centre which undertakes market-led R&D projects in collaboration with industry, universities and research institutions.

**43** During 2017–18, the HKPC ran the following subsidiaries:

- the HKPC Technology (Holdings) Company Limited which functions as a vehicle for commercialisation of patents, technologies and projects deliverables of the HKPC and other R&D institutes; and
- the Productivity (Holdings) Limited which operates consulting firms in PRD to strengthen the HKPC's integrated support and services for Hong Kong firms operating in the Mainland.

**44** The key performance indicators for the HKPC are:

***Indicators***

| | 2016–17 (Actual) | 2017–18 (Revised Estimate) | **2018–19 (Estimate)** |
|---|---|---|---|
| overall income/expenditure ratio (%) | 74.1 | 69.6 | **70.5** |
| income from integrated solutions ($m)@ | 367.6 | 380.3 | **409.9** |
| income from training courses ($m) | 9.4 | 14.0 | **12.6** |
| income from exhibitions/study missions/conferences ($m) | 9.4 | 7.2 | **6.9** |
| no. of consultancy projects accepted | 948 | 968 | **935** |
| no. of people who attended the HKPC fee-charging training courses | 4 198 | 3 000 | **3 000** |
| no. of people who attended the HKPC events/networking activities for associations/non-fee-charging seminars | 22 093 | 22 000 | **22 000** |
| no. of people who participated in the HKPC exhibitions/study missions/conferences | 4 293 | 4 000 | **4 000** |
| no. of R&D projectsβ | | | |
| new projects | 46 | 35 | **35** |
| on-going projects | 99 | 65 | **65** |

@ The new indicator includes the income from consultancy/technical assistance and the income from manufacturing support/process control which were reported under separate indicators. In line with market demand for integrated solutions, the revised indicator can better reflect the overall performance.

β The figures do not include projects undertaken by the Automotive Parts and Accessory Systems R&D Centre independently, which are reported under the relevant indicators for the Centre in paragraph 7 above.

***Matters Requiring Special Attention in 2018–19***

**45** During 2018–19, the HKPC will continue to:

- provide integrated support to innovative and growth-oriented Hong Kong companies across the value chain, with the main sectoral focus on manufacturing, particularly in Hong Kong's foundation industries, and related service industries for their transition towards Industry 4.0;
- promote re-industrialisation and move relevant enterprises towards high value-added production;
- nurture the start-up culture and facilitate the translation of innovative and technological ideas into industrial designs of products through the Inno Space;

- assist local manufacturers in industrial upgrading, business transformation or relocating their operations under the challenges of the Mainland's processing trade policy, such as through the Enterprise Support Programme under the Dedicated Fund on Branding, Upgrading and Domestic Sales and the integrated support centre SME One launched on 25 June 2012 and 17 July 2012 respectively;
- help the retail industry, in particular SMEs, adopt relevant ICT and other technologies to enhance productivity and manage manpower demand through the Retail Technology Adoption Assistance Scheme for Manpower Demand Management launched on 1 December 2014;
- assist the recycling industry to upgrade its operational capabilities and efficiency for sustainable development through the Recycling Fund launched on 6 October 2015;
- enhance its support to Hong Kong companies operating in the PRD, through subsidiary consulting firms set up in Shenzhen and Dongguan;
- operate the Automotive Parts and Accessory Systems R&D Centre; and
- promote the adoption of cleaner production technologies and practices in Hong Kong and the PRD through such initiatives as the Cleaner Production Partnership Programme.

*ASTRI*

***Aim***

**46** The aim is to provide research capability for Hong Kong's technological development and stimulate the growth of technology-based industry in Hong Kong, and to enhance Hong Kong's competitiveness in technology-based industries through applied research.

***Brief Description***

**47** ASTRI's missions are to:

- perform high quality R&D and transfer the technologies developed to industry,
- promote greater application of technology in industry,
- become a focal point for attracting international R&D talent to work in Hong Kong,
- enhance Hong Kong's technological human resources development,
- act as a spawning ground for technology entrepreneurs, and
- provide a focal point for industry-university collaboration.

**48** ASTRI is designated as the R&D Centre for Information and Communications Technologies. Its core R&D competences are organised under seven Technology Divisions, namely: Advanced Digital Systems, Mixed Signal System IC, Opto-electronics, Electronics Components, Intelligent Software and Systems, Security and Data Sciences, and Communications Technologies. Five areas of applications including financial technologies, intelligent manufacturing, next generation networks, health technology and smart city are identified for major pursuit. Its operating strategy is to transfer the technologies and results developed from its R&D projects to the industry through licensing, contract research and spinning-off new technology companies. This process will elevate the technology level of Hong Kong industry and accelerate the expansion of its technology industry base to create new employment opportunities and enhance competitiveness. Over the years, ASTRI has become more customer-focused in its R&D business.

**49** The key performance indicators for ASTRI are:

***Indicators***

| | 2016 (Actual) | 2017 (Actual) | **2018 (Estimate)** |
|---|---|---|---|
| no. of new full projects^ | 12 | 26 | **31** |
| no. of new seed projects¶ | 17 | 28 | **16** |
| no. of patents filed# | 26 | 29 | **31** |
| no. of technology transfers | 55 | 76 | **56** |
| no. of clients engaged in technology transfer | 45 | 62 | **47** |
| no. of members joining consortia formed by ASTRI | 337 | 345 | **355** |
| no. of technology workshop/seminars organised | 75 | 60 | **75** |
| no. of participants of seminars | 10 670 | 12 703 | **10 500** |
| amount of income from industry ($m) | 74.0 | 90.4 | **93.8** |

^ Full projects are R&D projects with more than $2 million funding support from the ITF, including collaborative projects with the industry.

¶ Seed projects are feasibility studies for developing substantive R&D project proposals. The maximum ITF funding support for each of them is $2.8 million.

# Refers to the number of inventions filed. One invention may generate multiple patent filings.

***Matters Requiring Special Attention in 2018–19***

**50** During 2018–19, the ASTRI will continue to:

- transfer technologies developed from its R&D projects to industry and commercialise project deliverables through implementing corporate-level initiatives and encourage more collaborative projects;
- align its R&D directions with that of the 13th Five-Year Plan to implement major technology projects, to develop strategic emerging industries, and to conduct basic research and frontier technologies;
- strengthen co-operation with the industry, public organisations and universities in R&D, for example, through the establishment of joint laboratories/R&D centres and alliances;
- collaborate with enterprises and research institutions in the Mainland and overseas;
- develop research capabilities in identified emerging technology areas and create synergy through clustered-seed projects;
- carry out the research projects initiated in 2017–18 and before;
- enhance institutional R&D infrastructure and research capabilities; and
- contribute to development of local high-technology human capital by recruiting local engineering graduates as fellows under the ITF Internship Programme.

## ANALYSIS OF FINANCIAL PROVISION

| Programme | 2016–17 (Actual) ($m) | 2017–18 (Original) ($m) | 2017–18 (Revised) ($m) | **2018–19 (Estimate) ($m)** |
|---|---|---|---|---|
| (1) Support for Research and Development | 48.7 | 55.5 | 55.9 | **62.5** |
| (2) Fostering University-Industry Collaboration | 6.9 | 7.4 | 7.7 | **8.3** |
| (3) Promotion of Technological Entrepreneurship | 14.9 | 22.5 | 19.7 | **22.7** |
| (4) Planning for Innovation and Technology Development | 42.8 | 55.8 | 55.1 | **67.1** |
| (5) Infrastructural Support | 12.1 | 13.7 | 14.1 | **57.3** |
| (6) Quality Support | 124.4 | 109.7 | 114.1 | **118.3** |
| (7) Subvention: Hong Kong Productivity Council, Hong Kong Applied Science and Technology Research Institute Company Limited | 340.9 | 356.6 | 359.5 | **355.8** |
| | 590.7 | 621.2 | 626.1 (+0.8%) | **692.0 (+10.5%)** |
| | | | | **(or +11.4% on 2017–18 Original)** |

**Analysis of Financial and Staffing Provision**

**Programme (1)**

Provision for 2018–19 is $6.6 million (11.8%) higher than the revised estimate for 2017–18. This is mainly due to increased provision for salary and general departmental expenses. In addition, there will be an increase of three posts in 2018–19.

**Programme (2)**

Provision for 2018–19 is $0.6 million (7.8%) higher than the revised estimate for 2017–18. This is mainly due to increased provision for general departmental expenses.

**Programme (3)**

Provision for 2018–19 is $3.0 million (15.2%) higher than the revised estimate for 2017–18. This is mainly due to increased provision for general departmental expenses.

**Programme (4)**

Provision for 2018–19 is $12.0 million (21.8%) higher than the revised estimate for 2017–18. This is mainly due to increased provision for salary. In addition, there will be an increase of 18 posts in 2018–19.

**Programme (5)**

Provision for 2018–19 is $43.2 million (306.4%) higher than the revised estimate for 2017–18. This is mainly due to increased provision for salary and general departmental expenses. In addition, there will be an increase of 29 posts in 2018–19.

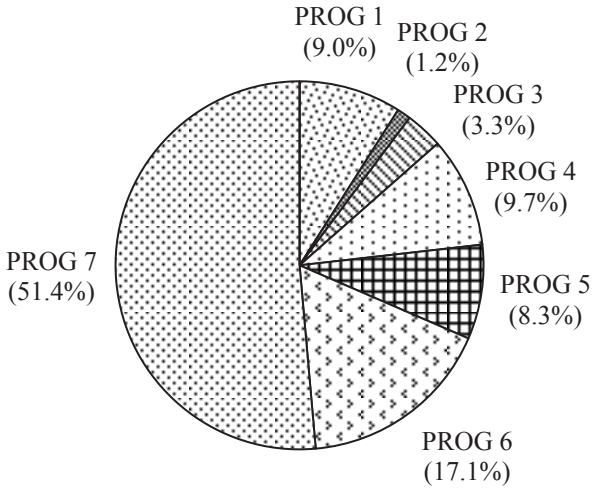
**Programme (6)**

Provision for 2018–19 is $4.2 million (3.7%) higher than the revised estimate for 2017–18. This is mainly due to increased provision for procurement of capital equipment.

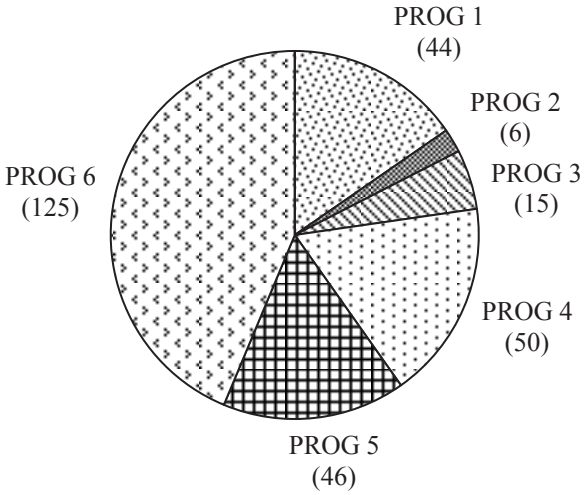
**Programme (7)**

Provision for 2018–19 is $3.7 million (1.0%) lower than the revised estimate for 2017–18. This is mainly due to decreased provision for the HKPC and ASTRI.

*Allocation of provision to programmes (2018-19)*

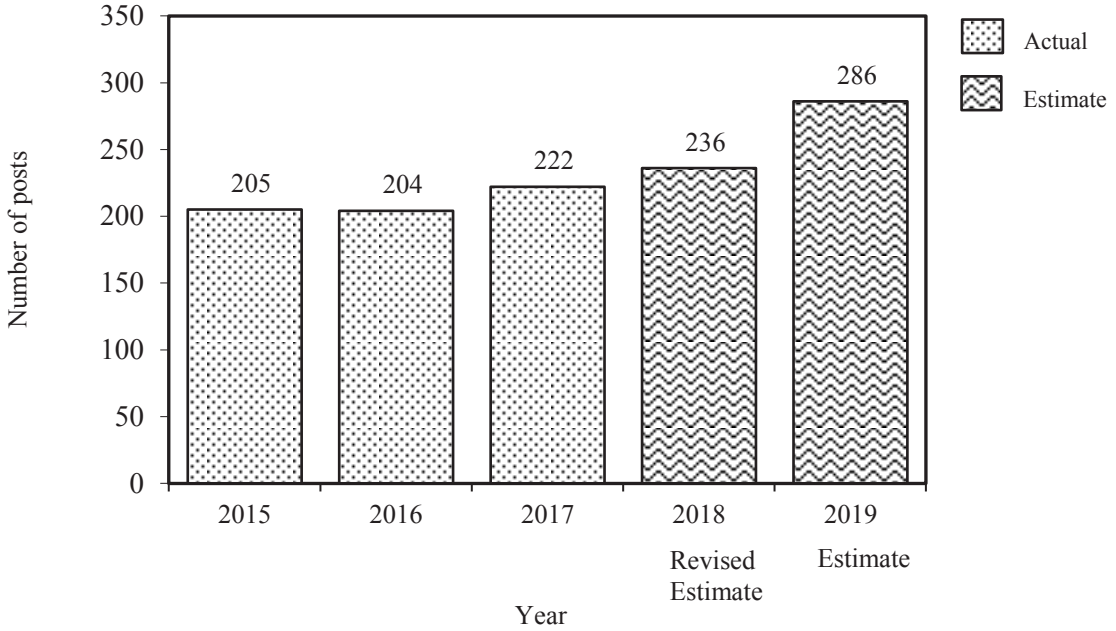



*Staff by programme (as at 31 March 2019)*




(No government staff under PROG 7)

*Changes in the size of the establishment (as at 31 March)*



| Sub-head (Code) | | Actual expenditure 2016–17 | Approved estimate 2017–18 | Revised estimate 2017–18 | **Estimate 2018–19** |
|---|---|---|---|---|---|
| | | $'000 | $'000 | $'000 | **$'000** |
| | **Operating Account** | | | | |
| | Recurrent | | | | |
| 000 | Operational expenses | 577,170 | 612,545 | 616,189 | **670,049** |
| | Total, Recurrent | 577,170 | 612,545 | 616,189 | **670,049** |
| | Total, Operating Account | 577,170 | 612,545 | 616,189 | **670,049** |
| | **Capital Account** | | | | |
| | Plant, Equipment and Works | | | | |
| 661 | Minor plant, vehicles and equipment (block vote) | 9,942 | 6,653 | 6,653 | **15,373** |
| | Plant, vehicles and equipment | 3,627 | 1,978 | 3,293 | **—** |
| | Total, Plant, Equipment and Works | 13,569 | 8,631 | 9,946 | **15,373** |
| | Subventions | | | | |
| 88E | Hong Kong Applied Science and Technology Research Institute - Office renovation, fitting-out, and reinstatement works (block vote) | — | — | — | **6,533** |
| | Total, Subventions | — | — | — | **6,533** |
| | Total, Capital Account | 13,569 | 8,631 | 9,946 | **21,906** |
| | Total Expenditure | 590,739 | 621,176 | 626,135 | **691,955** |

**Details of Expenditure by Subhead**

The estimate of the amount required in 2018–19 for the salaries and expenses of the Innovation and Technology Commission is $691,955,000. This represents an increase of $65,820,000 over the revised estimate for 2017–18 and $101,216,000 over the actual expenditure in 2016–17.

*Operating Account*

Recurrent

**2** Provision of $670,049,000 under *Subhead 000 Operational expenses* is for the salaries, allowances and other operating expenses of the Innovation and Technology Commission.

**3** The establishment as at 31 March 2018 will be 236 posts. It is expected that there will be an increase of 50 posts in 2018–19. Subject to certain conditions, the controlling officer may under delegated power create or delete non-directorate posts during 2018–19, but the notional annual mid-point salary value of all such posts must not exceed $180,339,000.

**4** An analysis of the financial provision under *Subhead 000 Operational expenses* is as follows:

| | 2016–17 (Actual) ($'000) | 2017–18 (Original) ($'000) | 2017–18 (Revised) ($'000) | **2018–19 (Estimate) ($'000)** |
|---|---|---|---|---|
| Personal Emoluments | | | | |
| - Salaries | 146,129 | 160,017 | 158,438 | **188,054** |
| - Allowances | 3,955 | 5,254 | 5,170 | **5,347** |
| - Job-related allowances | — | 2 | 2 | **2** |
| Personnel Related Expenses | | | | |
| - Mandatory Provident Fund contribution | 518 | 439 | 643 | **647** |
| - Civil Service Provident Fund contribution | 5,825 | 6,967 | 7,666 | **9,077** |
| Departmental Expenses | | | | |
| - General departmental expenses | 79,861 | 83,263 | 84,746 | **117,658** |
| Subventions | | | | |
| - Hong Kong Productivity Council | 200,819 | 212,955 | 215,876 | **205,616** |
| - Hong Kong Applied Science and Technology Research Institute Company Limited | 140,063 | 143,648 | 143,648 | **143,648** |
| | 577,170 | 612,545 | 616,189 | **670,049** |

*Capital Account*

Plant, Equipment and Works

**5** Provision of $15,373,000 under *Subhead 661 Minor plant, vehicles and equipment (block vote)* represents an increase of $8,720,000 (131.1%) over the revised estimate for 2017–18. This reflects the increased requirement for scheduled replacement of minor plant and equipment.

Subventions

**6** *Subhead 88E Hong Kong Applied Science and Technology Research Institute – Office renovation, fitting-out, and reinstatement works (block vote)* is for office renovation, fitting-out and reinstatement works costing over $200,000 but not exceeding $10 million for each project. The provision of $6,533,000 is for office renovation, fitting-out and reinstatement works for the Hong Kong Applied Science and Technology Research Institute.