Head 155 — GOVERNMENT SECRETARIAT: INNOVATION AND TECHNOLOGY COMMISSION

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

Estimate 2019–20 ..... **$820.8m**

Establishment ceiling 2019–20 (notional annual mid-point salary value) representing an estimated 265 non-directorate posts as at 31 March 2019 rising by 40 posts to 305 posts as at 31 March 2020..... **$208.6m**

In addition, there will be an estimated nine directorate posts as at 31 March 2019 and as at 31 March 2020.

Commitment balance..... **$500.0m**

Controlling Officer's Report

Programmes

Programme (1) Support for Research and Development **Programme (2) Promotion of Technological Entrepreneurship** **Programme (3) Planning for Innovation and Technology Development** **Programme (4) Infrastructural Support**	These programmes contribute to Policy Area 17: Information Technology and Broadcasting (Secretary for Innovation and Technology).
Programme (5) 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 (6) 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

	2017–18 (Actual)	2018–19 (Original)	2018–19 (Revised)	**2019–20 (Estimate)**
Financial provision ($m)#	57.6	70.8	73.5 (+3.8%)	**85.6** (+16.5%) (or +20.9% on 2018–19 Original)

For comparison purpose, provisions for 2017–18 and 2018–19 previously under former Programme (2): Fostering University-Industry Collaboration are presented under this programme.

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 R&D collaboration between organisations in Hong Kong and Guangdong Province. 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. To achieve synergy and flexibility, the University-Industry Collaboration Programme (UICP) and the collaborative stream of the ITSP were merged into a new Partnership Research Programme (PRP) in January 2019, which continues to support commercial R&D projects undertaken by local companies in collaboration with local universities and other public research institutions. 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 In September 2018, the Government signed an agreement with the Ministry of Science and Technology on setting up the Mainland-Hong Kong Joint Funding Scheme to encourage collaboration between Hong Kong and provinces of the Mainland in the area of scientific research.

5 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.

6 Funding assistance is provided to 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 designated universities to enhance their technology transfer capabilities.

7 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.

8 The legislative amendment to provide enhanced tax deduction regime for qualifying R&D was completed in October 2018. Under the amended Inland Revenue Ordinance (Cap. 112), the Commissioner for Innovation and Technology (CIT) will advise the Commissioner of Inland Revenue on R&D tax deduction claims and advance ruling cases. In addition, CIT will be responsible for processing applications from local institutions for designation as "designated local research institutions" (DLRI) and the subsequent monitoring of these DLRIs.

9 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, UICP, MRP, PAG, R&D centres and R&D Cash Rebate Scheme are as follows:

Indicators

	2017 (Actual)	2018 (Actual)	**2019 (Estimate)**
ITSPΨ			
applications received and processed	477	519	**454Ω**
projects funded and being monitored	414	413	**463**
TCFS			
applications received and processed	0#	153	**94**
projects funded and being monitored	66	53	**87**
UICP			
applications received and processed	26	34	**6Ω**
projects funded and being monitored	87	85	**91**
MRP			
applications received and processed	111	58	**84**
projects funded and being monitored	8	18	**42**
PAG			
applications received and processed	332	395	**342**
projects funded	177	181	**175**

	2017 (Actual)	2018 (Actual)	**2019 (Estimate)**
R&D centres' projectsΦ			
Automotive Parts and Accessory Systems R&D Centre			
new projects	11	17	**19**
projects funded and being monitored	61	62	**68**
R&D Centre for information and communications technologies			
new projects	54	36∧	**49**
projects funded and being monitored	109	111	**129**
Logistics and Supply Chain MultiTech R&D Centre‡			
new projects	28	14∧	**24**
projects funded and being monitored	65	60	**63**
Nano and Advanced Materials Institute			
new projects	47	50	**50**
projects funded and being monitored	163	153	**149**
Hong Kong Research Institute of Textiles and Apparel			
new projects	18	21	**20**
projects funded and being monitored	81	66	**74**
R&D Cash Rebate Scheme			
applications received and processed	295	334	**335**
applications approved	292	295	**315**

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".

Ω The number of ITSP and UICP applications received and processed in 2019 is estimated to drop due to the merging of the collaborative stream of the ITSP and UICP into the PRP in January 2019.

\# There was no TCFS application received and processed in 2017 as the solicitation exercise was postponed to early 2018.

Φ 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 due to their complexity, which will be submitted in early 2019.

‡ Formerly known as Hong Kong R&D Centre for Logisitics and Supply Chain Management Enabling Technologies.

Matters Requiring Special Attention in 2019–20

10 During 2019–20, the Commission will:

- continue to process applications for designation as DLRIs;
- conduct the first solicitation exercise for the new Mainland-Hong Kong Joint Funding Scheme;
- increase the funding support for designated universities to enhance their technology transfer capabilities, and that for State Key Laboratories and Hong Kong Branches of Chinese National Engineering Research Centres;
- continue to administer the various funding programmes, including the new PRP and monitor progress of the funded projects;
- continue to support the activities of the R&D centres with emphasis on commercialisation and 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): Promotion of Technological Entrepreneurship

	2017–18 (Actual)	2018–19 (Original)	2018–19 (Revised)	**2019–20 (Estimate)**
Financial provision ($m)	16.3	22.7	23.5 (+3.5%)	**27.2** (+15.7%) (or +19.8% on 2018–19 Original)

Aim

11 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

12 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.

13 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) to co-invest with private organisations, venture capital funds and angel investors in the eligible I&T start-ups in Hong Kong.

14 During 2018–19, the Commission:

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

15 The key performance measures are:

Indicators

	2017 (Actual)	2018 (Actual)	**2019 (Estimate)**
SERAP			
applications received and processed	N.A.μ	N.A.μ	**N.A.μ**
projects funded and being monitored	81	41	**39**
ESS			
applications received and processed	112	142	**147**
projects funded and being monitored	35	59	**81**

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

Matters Requiring Special Attention in 2019–20

16 During 2019–20, the Commission will continue to:

- administer the ESS;
- monitor progress of the funded projects under the SERAP and the ESS;
- administer the TSSSU with enhanced funding support;
- administer the ITVF; and
- monitor the residual work relating to the ARF and the SERAP.

Programme (3): Planning for Innovation and Technology Development

	2017–18 (Actual)	2018–19 (Original)	2018–19 (Revised)	**2019–20 (Estimate)**
Financial provision ($m)	49.1	67.1	63.5 (–5.4%)	**152.5** (+140.2%) (or +127.3% on 2018–19 Original)

Aim

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

Brief Description

18 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.

19 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.

20 To enhance the long-term competitiveness of local enterprises, the Commission administers the Technology Voucher Programme (TVP) which aims to subsidise local enterprises in using technological services and/or solutions to improve productivity, or upgrade or transform their business processes. The eligibility of the TVP has been expanded since 28 February 2018 to cover all local non-listed enterprises, irrespective of size and duration of operation.

21 The Commission also administers four programmes to pool together and nurture technology talent:

- The Researcher Programme, formerly known as the Internship Programme, provides financial support for eligible organisations/companies to recruit researchers to assist in R&D projects. 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;
- The Technology Talent Admission Scheme (TechTAS) provides a fast-track arrangement for eligible technology companies/institutes to admit overseas and Mainland technology talent to undertake R&D work for them in Hong Kong;
- The Postdoctoral Hub Programme provides funding support to eligible organisations/companies to recruit postdoctoral talent for R&D work; and
- The Reindustrialisation and Technology Training Programme (RTTP) subsidises local companies to train their staff in advanced technologies.

22 During 2018–19, 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-Pearl River Delta (PRD) Joint Conference on Regional Co-operation in Science and Technology, the Guangdong/Hong Kong Expert Group on Co-operation in Technology and Innovation, and the Steering Group on Shenzhen/Hong Kong Co-operation in Innovation and Technology;
- organised the InnoTech Month (ITM) 2018 to promote I&T to the general public, in particular the youth. Activities of the ITM included a nine-day InnoCarnival, roadshows, seminars, competitions, technology workshops and publication of science education books for young children;
- supported the Innovation and Technology Scholarship 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 2018;
- launched the Postdoctoral Hub Programme and publicised the programme via briefings and other channels;
- launched the RTTP and publicised the programme via briefings and other channels;
- launched the TechTAS and publicised the scheme via briefings and other channels;
- administered the TVP and publicised the programme via briefings and other channels; 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.

23 The key performance indicators are:

Indicators

	2017 (Actual)	2018 (Actual)	**2019 (Estimate)**
GSP			
applications received and processed	29	33	**29**
projects funded and being monitored	79	91	**99**
Researcher ProgrammeΘ			
applications received and processed	713	813	**797**
researcher positions fundedΘ	969	1 406	**1 609**
Postdoctoral Hub ProgrammeΩ			
applications received and processed	N.A.	331	**405**
postdoctoral talent positions funded	N.A.	319	**724**
RTTPΩ			
applications received and processed	N.A.	135	**430**
trainees funded	N.A.	275	**800**
TVP			
applications received and processed	324	707δ	**778**
projects funded and being monitored	302	981δ	**1 582**

Θ Revised description of the previous indicator "intern positions funded" under "Researcher Programme" (formerly known as the Internship Programme) as from 2019.
Ω New indicators as from 2018.
δ The figures increased significantly in 2018 due to the expansion of the eligibility criteria in February 2018.

Matters Requiring Special Attention in 2019–20

24 During 2019–20, the Commission will:

- launch the Re-industrialisation Funding Scheme to subsidise manufacturers, on a matching basis, to set up smart production lines in Hong Kong;
- continue to administer the TechTAS and review it;
- continue to strengthen technology co-operation with the Mainland under established co-operation mechanisms and in accordance with the "Arrangement on Enhancing Innovation and Technology Cooperation between the Mainland and Hong Kong";
- continue to administer various funding programmes and monitor progress of the funded projects;
- continue to promote I&T culture to the general public and nurture more young innovative talents, such as to organise the City Innovation and Technology Grand Challenge;
- 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 (4): Infrastructural Support

	2017–18 (Actual)	2018–19 (Original)	2018–19 (Revised)	**2019–20 (Estimate)**
Financial provision ($m)	13.7	57.3	43.6 (–23.9%)	**59.6** (+36.7%) (or +4.0% on 2018–19 Original)

Aim

25 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

26 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.

27 During 2018–19, the Commission:

- worked closely with the HKSTPC on various major initiatives, including implementation of Stage 1 of the Science Park Expansion Programme, development of the InnoCell, and facilities for supporting healthcare and artificial intelligence and robotics technologies researches in HKSP, and the Advanced Manufacturing Centre and Data Technology Hub under the revised Industrial Estate (IE) policy;
- worked closely with the Hong Kong-Shenzhen Innovation and Technology Park Limited (HSITPL), a subsidiary company of HKSTPC, on the development of the Hong Kong-Shenzhen Innovation and Technology Park in the Lok Ma Chau Loop;
- worked closely with the ASTRI in strengthening its institutional and research capabilities; and
- monitored the delivery of value-added support services to the manufacturing and related service industries by the HKPC.

Matters Requiring Special Attention in 2019–20

28 During 2019–20, 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 with a view to attracting world renowned universities and research institutions to conduct collaborative researches with local institutions;
- continue to work closely with the HKSTPC on the implementation of its various new developments and business plans of the HKSP and the IEs, including the development of manufacturing facility for dedicated advanced manufacturing sector;
- continue to work closely with the HKSTPC and HSITPL 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.

Programme (5): Quality Support

	2017–18 (Actual)	2018–19 (Original)	2018–19 (Revised)	**2019–20 (Estimate)**
Financial provision ($m)	122.1	118.3	121.6 (+2.8%)	**143.3** (+17.8%) (or +21.1% on 2018–19 Original)

Aim

29 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

30 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).

31 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.

32 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.

33 During 2018–19,

- 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 was admitted by the US Environmental Protection Agency (EPA) to the EPA Toxic Substances Control Act Title VI Third-Party Certification Program and became a recognised product certification and laboratory accreditation body to provide related accreditation service;
- 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); 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.

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

Targets

	Target working days	2017 (Actual)	2018 (Actual)	**2019 (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

	2017 (Actual)	2018 (Actual)	**2019 (Estimate)**
SCL			
calibrations performed	1 264	1 217	**1 220**
revenue generated ($)	3,906,929	4,038,701	**4,000,000**
SCL's overseas CIPM MRA partners (cumulative)§	102	104	**104**
PSIB			
technical enquiries	358	387	**380**
sales and photocopying of documented standards			
enquiries	149	134	**130**
quotations given	899	323Ψ	**400**
orders placed	73	94	**75**
revenue generated ($)	95,860	66,325	**80,000**
HOKLAS			
accredited laboratories (cumulative)	226	227	**232**
assessments, re-assessments and surveillance visits conducted	422	388	**425**
overseas laboratory accreditation schemes with MRA with the HOKLAS (cumulative)	92	96	**98**
HKCAS			
accredited certification bodies (cumulative)	25	25	**25**
assessments, re-assessments and surveillance visits conducted	91	71	**92**
overseas certification bodies accreditation schemes with MRA with the HKCAS (cumulative)	66	70	**72**

	2017 (Actual)	2018 (Actual)	**2019 (Estimate)**
HKIAS			
accredited inspection bodies (cumulative)	22	22	**22**
assessments, re-assessments and surveillance visits conducted	23	27	**26**
overseas inspection bodies accreditation schemes with MRA with the HKIAS (cumulative)	66	72	**73**

§ 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, Joint Research Centre, World Meteorological Organization and European Space Agency.

Ψ The number of quotations given by PSIB in 2018 was lower than that in the previous year. This was mainly because new versions of two international standards that were of high public interest, namely ISO 9001 and ISO 14001, were published in 2015, causing a surge of enquiries asking for these standards in 2015–2017. Since organisations that were certified to ISO 9001 and ISO 14001 should have adopted the new versions before 15 September 2018, the demand for these two standards had subsided this year.

Matters Requiring Special Attention in 2019–20

35 During 2019–20, 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 Accreditation Cooperation, the International Laboratory Accreditation Cooperation 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 (6): Subvention: Hong Kong Productivity Council, Hong Kong Applied Science and Technology Research Institute Company Limited

	2017–18 (Actual)	2018–19 (Original)	2018–19 (Revised)	**2019–20 (Estimate)**
Financial provision ($m)				
Hong Kong Productivity Council	215.9	205.6	210.5 (+2.4%)	**206.7** (–1.8%) (or +0.5% on 2018–19 Original)
Hong Kong Applied Science and Technology Research Institute Company Limited	143.6	150.2	150.2 (—)	**145.9** (–2.9%) (or –2.9% on 2018–19 Original)
Total	359.5	355.8	360.7 (+1.4%)	**352.6** (–2.2%) (or –0.9% on 2018–19 Original)

HKPC

Aim

36 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

37 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.

38 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 smart manufacturing, intelligent automation, robotics, product innovation and technology commercialisation;
- 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 small and medium enterprises (SMEs), through organisational development, people development, process management, knowledge and innovation management and corporate sustainability;
- assisting information technology (IT) service providers, in particular SMEs, to enhance their ICT capabilities, 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 international standards, as well as environmental 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.

39 During 2018–19, 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.

40 The key performance indicators for the HKPC are:

Indicators

	2017–18 (Actual)	2018–19 (Revised Estimate)	**2019–20 (Estimate)**
overall income/expenditure ratio (%)	76.4	67.6@	**67.8**
income from integrated solutions ($m)	389.2	348.9@	**349.0**
income from training courses ($m)	8.0	12.6	**11.3α**
income from exhibitions/study missions/ conferences ($m)	8.1	5.5@	**6.0**
no. of consultancy projects accepted	699	935	**840#**
no. of people who attended the HKPC fee-charging training courses	6 196	3 000	**3 000**
no. of people who attended the HKPC events/networking activities for associations/non-fee-charging seminars	24 187	22 000	**22 000**
no. of people who participated in the HKPC exhibitions/study missions/conferences	4 425	4 000	**4 000**
no. of R&D projectsβ			
new projects	45	35	**40**
ongoing projects	127	65	**80**

@ The drop in the 2018–19 revised estimates of these indicators is due to the adoption of the new accounting standard on revenue recognition "Hong Kong Financial Reporting Standard 15: Revenue from Contracts with Customers" from 2018–19 onwards.

α The amount of income from training courses is estimated to decrease in 2019–20 because enterprises will likely scale back on staff training in anticipation of a tougher business environment.

The number of consultancy projects accepted is estimated to decrease in 2019–20 because enterprises will likely scale back on investment spending in anticipation of a tough business environment.

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 9 above.

Matters Requiring Special Attention in 2019–20

41 During 2019–20, 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;
- provide Industry 4.0 consultancy services through the INC Invention Centre Hong Kong jointly established with the Fraunhofer Institute for Production Technology in October 2018;
- 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 enterprises in developing brands, upgrading and restructuring operations, and promoting sales in the Mainland and Association of Southeast Asian Nations (ASEAN) markets such as through 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 Mainland and contribute to the Guangdong-Hong Kong-Macao Greater Bay Area development, through subsidiary consulting firms set up in Shenzhen and Dongguan and the HKPC Shenzhen Innovation and Technology Centre;
- 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 Mainland through such initiatives as the Cleaner Production Partnership Programme.

ASTRI

Aim

42 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

43 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.

44 ASTRI is designated as the R&D Centre for information and communications technologies. ASTRI focuses its R&D in five core initiatives – financial technologies, intelligent manufacturing (focusing on artificial intelligence and robotics), smart city, health technologies, and application specific integrated circuits. Its operating strategy is to transfer the technologies and results developed from its R&D projects to the industry. 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.

45 The key performance indicators for ASTRI are:

Indicators

	2017 (Actual)	2018 (Actual)	**2019 (Estimate)**
no. of new full projects^	26	20	**30**
no. of new seed projects¶	28	16	**19**
no. of patents filedΔ	29	35	**33**
no. of technology transfers	76	54	**58**
no. of clients engaged in technology transfer	62	48	**49**
no. of members joining consortia formed by ASTRI	345	361	**376**
no. of technology workshop/seminars organised	60	80	**65**
no. of participants of seminars	12 703	13 692	**13 500**
amount of income from industry ($m)	90.4	111.7	**98.0**

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

Matters Requiring Special Attention in 2019–20

46 During 2019–20, 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;
- 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 2018–19 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 Postdoctoral Hub and Researcher Programmes.

ANALYSIS OF FINANCIAL PROVISION

Programme	2017–18 (Actual) ($m)	2018–19 (Original) ($m)	2018–19 (Revised) ($m)	**2019–20 (Estimate) ($m)**
(1) Support for Research and Development	57.6	70.8	73.5	**85.6**
(2) Promotion of Technological Entrepreneurship	16.3	22.7	23.5	**27.2**
(3) Planning for Innovation and Technology Development	49.1	67.1	63.5	**152.5**
(4) Infrastructural Support	13.7	57.3	43.6	**59.6**
(5) Quality Support	122.1	118.3	121.6	**143.3**
(6) Subvention: Hong Kong Productivity Council, Hong Kong Applied Science and Technology Research Institute Company Limited	359.5	355.8	360.7	**352.6**
	618.3	692.0	686.4 (–0.8%)	**820.8** **(+19.6%)** **(or +18.6% on 2018–19 Original)**

Analysis of Financial and Staffing Provision

Programme (1)

Provision for 2019–20 is $12.1 million (16.5%) higher than the revised estimate for 2018–19. This is mainly due to increased provision for salary and general departmental expenses. In addition, there will be an increase of two posts in 2019–20.

Programme (2)

Provision for 2019–20 is $3.7 million (15.7%) higher than the revised estimate for 2018–19. This is mainly due to increased provision for general departmental expenses.

Programme (3)

Provision for 2019–20 is $89.0 million (140.2%) higher than the revised estimate for 2018–19. This is mainly due to increased provision for salary and cash flow requirements for the City Innovation and Technology Grand Challenge. In addition, there will be an increase of 15 posts in 2019–20.

Programme (4)

Provision for 2019–20 is $16.0 million (36.7%) higher than the revised estimate for 2018–19. This is mainly due to increased provision for salary. In addition, there will be an increase of 12 posts in 2019–20.

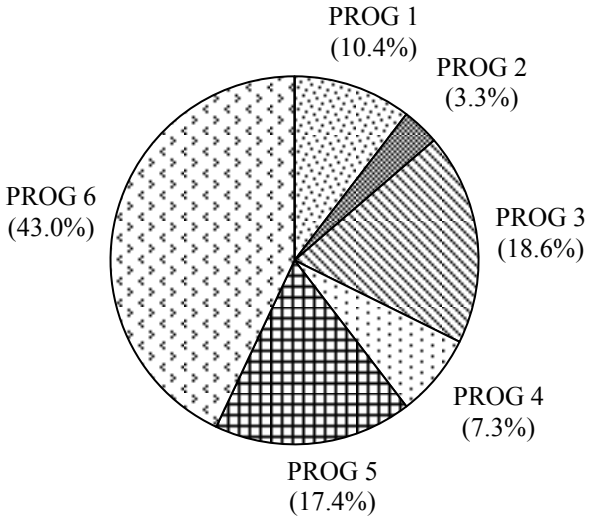
Programme (5)

Provision for 2019–20 is $21.7 million (17.8%) higher than the revised estimate for 2018–19. This is mainly due to increased provision for procurement of capital equipment and salary. In addition, there will be an increase of 11 posts in 2019–20.

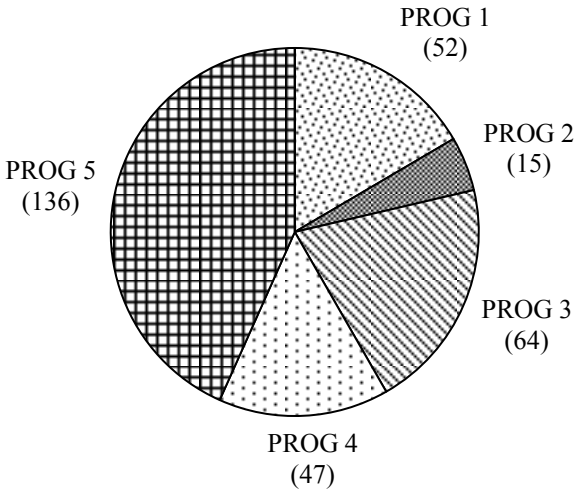
Programme (6)

Provision for 2019–20 is $8.1 million (2.2%) lower than the revised estimate for 2018–19. This is mainly due to decreased provision for the HKPC and ASTRI.

Allocation of provision to programmes (2019-20)

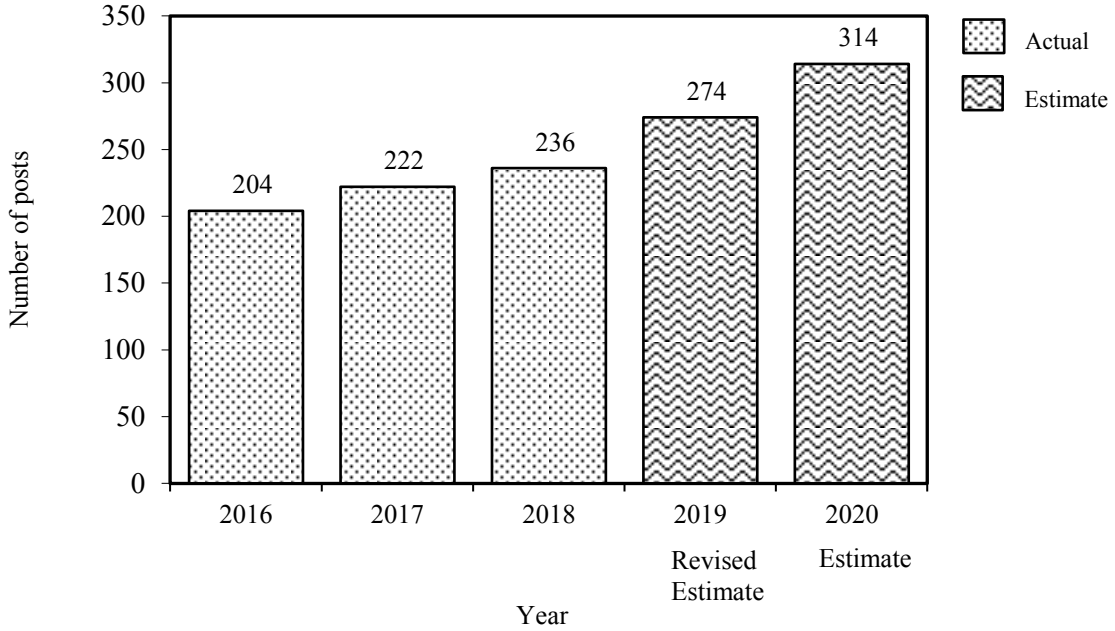


Staff by programme (as at 31 March 2020)



(No government staff under PROG 6)

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



Sub-head (Code)		Actual expenditure 2017–18	Approved estimate 2018–19	Revised estimate 2018–19	**Estimate 2019–20**
		$'000	$'000	$'000	**$'000**
	Operating Account				
	Recurrent				
000	Operational expenses	608,398	670,049	664,509	**719,739**
	Total, Recurrent	608,398	670,049	664,509	**719,739**
	Non-Recurrent				
700	General non-recurrent	—	—	—	**70,000**
	Total, Non-Recurrent	—	—	—	**70,000**
	Total, Operating Account	608,398	670,049	664,509	**789,739**
	Capital Account				
	Plant, Equipment and Works				
661	Minor plant, vehicles and equipment (block vote)	6,649	15,373	15,373	**28,800**
	Plant, vehicles and equipment	3,292	—	—	**—**
	Total, Plant, Equipment and Works	9,941	15,373	15,373	**28,800**
	Subventions				
88E	Hong Kong Applied Science and Technology Research Institute - Office renovation, fitting-out, and reinstatement works (block vote)	—	6,533	6,533	**2,255**
	Total, Subventions	—	6,533	6,533	**2,255**
	Total, Capital Account	9,941	21,906	21,906	**31,055**
	Total Expenditure	618,339	691,955	686,415	**820,794**

Details of Expenditure by Subhead

The estimate of the amount required in 2019–20 for the salaries and expenses of the Innovation and Technology Commission is $820,794,000. This represents an increase of $134,379,000 over the revised estimate for 2018–19 and $202,455,000 over the actual expenditure in 2017–18.

Operating Account

Recurrent

2 Provision of $719,739,000 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 2019 will be 274 posts. It is expected that there will be an increase of 40 posts in 2019–20. Subject to certain conditions, the controlling officer may under delegated power create or delete non-directorate posts during 2019–20, but the notional annual mid-point salary value of all such posts must not exceed $208,559,000.

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

	2017–18 (Actual) ($'000)	2018–19 (Original) ($'000)	2018–19 (Revised) ($'000)	**2019–20 (Estimate) ($'000)**
Personal Emoluments				
- Salaries	155,289	188,054	175,681	**220,779**
- Allowances	4,495	5,347	3,792	**4,219**
- Job-related allowances	1	2	2	**2**
Personnel Related Expenses				
- Mandatory Provident Fund contribution	649	647	704	**1,010**
- Civil Service Provident Fund contribution	7,867	9,077	9,973	**11,875**
Departmental Expenses				
- General departmental expenses	80,573	117,658	120,248	**131,495**
Subventions				
- Hong Kong Productivity Council	215,876	205,616	210,461	**206,711**
- Hong Kong Applied Science and Technology Research Institute Company Limited	143,648	143,648	143,648	**143,648**
	608,398	670,049	664,509	**719,739**

Capital Account

Plant, Equipment and Works

5 Provision of $28,800,000 under *Subhead 661 Minor plant, vehicles and equipment (block vote)* represents an increase of $13,427,000 (87.3%) over the revised estimate for 2018–19. 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 $2,255,000 represents a decrease of $4,278,000 (65.5%) against the revised estimate for 2018–19. This is mainly due to the decreased requirement for office renovation, fitting-out and reinstatement works for the Hong Kong Applied Science and Technology Research Institute.

Commitments

Sub-head (Code)	Item (Code)	Ambit	Approved commitment	Accumulated expenditure to 31.3.2018	Revised estimated expenditure for 2018–19	Balance
			$'000	$'000	$'000	$'000
Operating Account						
700		*General non-recurrent*				
	802	City Innovation and Technology Grand Challenge	500,000	—	—	500,000
		Total	500,000	—	—	500,000