Legislative Council
Panel on Commerce and Industry

Mid-Term Review
of the Research and Development Centres:
Funding Proposal

PURPOSE

This paper briefs Members on a funding proposal to extend the operation of the Research and Development (R&D) Centres up to 2013-14.

BACKGROUND

2. The Government is committed to driving Hong Kong to become a world-class knowledge-based economy through innovation and technology development. Following public consultation in 2004 and approval of a funding commitment of $273.9 million by the Finance Committee (FC) in June 2005, the Government established R&D Centres in five key technology areas. The Centres serve as focal points for driving and coordinating applied R&D, thereby facilitating technology transfer of the R&D results to the relevant industries. The Centres are required to observe five key objectives: focus, market relevance, industry participation, leverage on the Mainland, and better coordination among different elements of the innovation and technology programme. The five Centres established in April 2006 were -

(a) Automotive Parts and Accessory Systems R&D Centre (APAS);

(b) Hong Kong Research Institute of Textiles and Apparel (HKRITA);

(c) Hong Kong R&D Centre for Information and Communications Technologies (ICT) (which is subsumed under the Hong Kong Applied Science and Technology Research Institute (ASTRI) with its operating expenditure met by Government's annual subvention to ASTRI);

(d) Hong Kong R&D Centre for Logistics and Supply Chain Management Enabling Technologies (LSCM); and

(e) Nano and Advanced Materials Institute (NAMI).

3. At the Panel meeting on 21 April 2009, we briefed Members vide panel paper ref. CB(1)1286/098-09(07) on the outcome of the mid-term review of the operation of the R&D Centres covering the period from April 2006 to December 2008. We are of the view that the Centres have made a significant start and are making an important contribution towards strengthening our R&D infrastructure and culture. They are also starting to play an increasingly important role in support of Hong Kong enterprises in the Pearl River Delta (PRD) as they upgrade their industrial processes. This will complement the future development of the PRD in various strategic technology areas such as automotive, new materials, environmental protection, renewable energy and integrated circuit design. Under the current financial climate, it is imperative to re-affirm our strong policy commitment to promote innovation and technology as a means to encourage high value added economic activities that open up new sectors for sustainable economic growth.

4. Whilst supporting the continued operation of the Centres, Members wished to see closer collaboration between the Centres and local industry as well as more R&D deliverables to be commercialized for industry and business applications, thereby helping industry to move up the value chain and enhance their competitiveness. Members also suggested that the Centres should adopt a more realistic target for industry contributions vis-à-vis the current economic climate.

PROPOSALS FOR 2011-12 TO 2013-14

5. With the support of Members on the work of the Centres, we propose to -

(a) commit additional funding out of the ITF to extend the operation of the four Centres – APAS, HKRITA, LSCM and NAMI up to 2013-14. Although the first five-year plans and ITF funding ending March 2011 for these Centres have yet to come to an end, we see a need to commit additional funding now for the period beyond March 2011, bearing in mind the long lead time for planning R&D projects. This will enable the four Centres to continue with their R&D programmes, retain/recruit experienced R&D personnel and seek further collaboration with the industry; and

(b) increase the operating budget of NAMI for the initial five years to cope with a number of large scale projects on thin film photovoltaic (PV) technology.

Taking into account a small sum of savings from the other three Centres over the first five-year period, the proposal in (a) and (b) above will entail net additional funding of $369 million out of the ITF for the operation of these Centres, over and above the $273.9 million already approved. ICT's operation is funded under the annual Government's subvention to ASTRI.

6. The above four Centres have revised their operating expenditure estimates for the initial five-year period and drawn up their funding requirements for a further five-year period up to 2015-16. However, having regard to the initial operating experience, the progress of their R&D programmes and their upcoming plans for promoting technology transfer, we consider it to be more prudent at this stage to extend their operation for three years. This will allow us to review and enhance the institutional framework to achieve greater savings in operating expenditure and higher cost-effectiveness. Besides, in 2011 we will conduct a full review of the Centres' operation and overall performance for the first five-year period taking full account of their experience in technology transfer and commercialisation. We will brief Members of the outcomes of these two reviews before finalizing the institutional set-up and the funding requirements in the longer term. Where feasible, we will put in place the corresponding structural changes and improvement measures before March 2014. Having regard to the above, the estimated expenditure to be met by ITF are summarised as follows -

Operating expenditure for 2006-07 to 2013-14
($million)

	2006-07 to 2010-11		**2011-12 to 2013-14**	**Total**
	Commitment originally approved by FC	Revised estimates	Estimates	Revised commitment to be approved by FC
	(a)	(b)	(c)	(b) + (c)
APAS	100.0	89.5	78.1	167.6
HKRITA	60.3	59.7	93.9	153.6
LSCM	52.2	52.2	79.7	131.9
NAMI	61.4	97.6	92.2	189.8
Total:	**273.9**	**299.0**	**343.9**	**642.9**

A summary of the Centres' revised operating budgets up to 2013-14 is at ***Appendix 1***. The higher operating expenditure requirement of NAMI in the initial five-year period is mainly due to its latest R&D plans on thin film PV technology. Regarding the operating budgets for 2011-12 to 2013-14, the estimated expenditure for the Centres is about $344 million. This is higher than

the revised operating budgets of the Centres for the first 5-year period which amounts to $299 million. This increase arises as the Centres plan to put in more resources to help build up their staff establishments to full strength, including setting up new business development teams for pursuing technology transfer and commercialisation of the R&D results and reinforcing their liaison with industry. For example, the Centres have budgeted $40.6 million for publicity and marketing expenditures between 2011-12 and 2013-14, against the estimate of $17.4 million for the first five-year period.

7. Subject to Members' support, we will seek FC's approval to increase the funding commitments to extend the R&D Centres' operation up to 2013-14 as follows -

(a) from $100 million by $67.6 million to $167.6 million for APAS;

(b) from $60.3 million by $93.3 million to $153.6 million for HKRITA;

(c) from $52.2 million by $79.7 million to $131.9 million for LSCM; and

(d) from $61.4 million by $128.4 million to $189.8 million for NAMI.

8. Apart from putting in more resources for commercialization, the Centres will embark on a more ambitious R&D progamme. The estimated R&D expenditure of the Centres between 2011-12 and 2013-14 is about $902 million. This is higher than the corresponding period in the first five years as the Centres are now in full operation and they will have more completed R&D projects to enlist further collaboration from industry. The updated indicative R&D expenditure to be funded by ITF are as follows -

R&D expenditure for 2006-07 to 2013-14
($million)

	2006-07 to 2010-11		**2011-12 to 2013-14**
	Original estimates	Revised estimates	Estimates
APAS	250.0	250.7	180.0
HKRITA	215.0	209.4	204.9
LSCM	255.0	295.9	205.0
NAMI	209.0	310.7	312.4
Total:	**929.0**	**1,066.7**	**902.3**

INDUSTRY CONTRIBUTIONS

9. Between April 2006 and December 2008, the Centres have solicited $171 million of contributions from the industry, or 13% of their research budgets. This falls below the original target of achieving an industry contribution of 40% at the end of the first five-year period. Given the current financial climate, we consider that the Centres will have genuine difficulties to increase the proportion of industry contribution substantially in the near future. On the other hand, we consider it imperative to maintain the existing 10% industry contribution requirement as an indication of market potential and relevance. Having considered Members' views, we decide to adjust the Centres' target of soliciting industry contributions to 15% pending future review.

10. Notwithstanding the above, we will encourage the R&D Centres to solicit contributions from industry, be it in cash or in kind (e.g. research equipment) and to work closely with industry in both collaborative R&D projects and promoting technology transfer. Consideration will also be given to organizing regular joint industry forum to update local industry on the Centres' latest R&D programme and deliverables and to seek further collaboration.

CONTROL AND MONITORING

11. We have put in place comprehensive monitoring and reporting mechanisms for the R&D Centres. In respect of the Centres' operation, each R&D Centre is required to submit the following to the Innovation and Technology Commission (ITC) each financial year -

(a) an Annual Plan comprising the R&D programme, performance indicators and the resources required;

(b) four quarterly operational reports covering the significant activities and the cashflow position; and

(c) annual audited accounts of the Centre' operation.

12. In respect of R&D projects, the prevailing ITF funding guidelines are also followed, which include submission of half-yearly progress reports on the R&D work and annual audited statements on the project expenditure. The Commissioner for Innovation and Technology (CIT) (or his representative) sits on the Centres' Board of Directors, Finance and Administration Committee and Technology Committee.

13. We require the Centres to put in place a reasonable corporate governance system and procedures. We have provided the Centres with a

"Guideline for Developing the Corporate Governance Manual for R&D Centres" and required them to adopt appropriate procurement and recruitment procedures, modelled on the rules and procedures of the Government or the hosting institution, to ensure that the process is undertaken in an open and fair manner. The Centres have also adopted a two-tier reporting system for declaration of conflict of interest.

ADVICE SOUGHT

14. Members are invited to support the submission of the funding proposals to the FC.

Innovation and Technology Commission
May 2009

Appendix 1

Mid-term Review of R&D Centres:
Summary of Operating Budgets up to 2013-14

(I) Automotive Parts and Accessory Systems R&D Centre (APAS)

	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Total
	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000
Staff	1,900	7,400	8,260	12,340	13,540	14,250	14,950	15,700	88,340
Equipment and other capital cost	300	4,700	3,850	5,000	5,500	5,500	6,000	6,500	37,350
Other direct costs	7,300	4,000	5,230	5,500	5,800	6,400	7,050	7,750	49,030
- *Publicity/ promotion*	142	693	800	950	1,000	1,100	1,300	1,500	7,485
- *marketing/ commercialisation*	0	0	300	350	400	500	600	700	2,850
- *Administrative support and others*	7,158	3,307	4,130	4,200	4,500	4,800	5,150	5,550	38,795
Total expenditure:	9,500	16,100	17,340	22,840	24,840	26,150	28,000	29,950	174,720
Less: Income	0	0	600	240	240	2,000	2,000	2,000	7,080
ITF funding:	**9,500**	**16,100**	**16,740**	**22,600**	**24,600**	**24,150**	**26,000**	**27,950**	**167,640**

Explanatory Notes -

(1) The revised cost estimate for procuring testing equipment for wider industry uses is $18 million for the first 5-year period. The Centre has also budgeted $18 million for the same purpose for 2011-12 to 2013-14.

(2) The budget increase of around $2 million for each year in 2011-12 to 2013-14 is based on the following three considerations:

   (a) increased automotive parts testing service which requires more equipment update;
   (b) adjustment on the staff cost and other expenses like rental and support services; and
   (c) a bigger increase in the expenditure on marketing and commercialisation.

(3) The major income between 2011-12 and 2013-14 will come from licensing the IP and administrative overheads for those projects conducted by APAS.

(II) Hong Kong Research Institute of Textiles and Apparel (HKRITA)

	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Total
	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000
Staff (1)	4,500	6,050	7,720	11,400	13,400	14,800	16,100	17,800	91,770
Equipment and other capital cost (2)	710	1,470	220	80	180	5,000	200	200	8,060
Other direct costs (3)	490	1,920	2,270	3,900	5,680	12,900	13,300	13,900	54,360
- *Publicity/ promotion (4)*	170	540	740	800	2,140	2,600	2,700	2,800	12,490
- *Commercialisation (5)*	0	0	0	1,000	1,000	5,000	5,200	5,300	17,500
- *Administrative support and others (6)*	320	1,380	1,530	2,100	2,540	5,300	5,400	5,800	24,370
Total expenditure:	5,700	9,440	10,210	15,380	19,260	32,700	29,600	31,900	154,190
Less: Income	40	120	80	40	40	100	100	100	620
ITF funding:	**5,660**	**9,320**	**10,130**	**15,340**	**19,220**	**32,600**	**29,500**	**31,800**	**153,570**

Explanatory Notes -

(1) This covers basic salary, MPF contribution, contract-end gratuity, medical insurance for staff. It is expected that in 2011-12 to 2013-14, the number of staff will increase from 23 to 29 to meet increasing R&D workload.

(2) Equipment and other capital costs include expenditure on (a) office renovation and (b) IT infrastructure including IT servers.

(3) The increase in the budget for 2011-12 to 2013-14 reflects expenditure for "commercialisation" of R&D projects (including inflation adjustment).

(4) This covers website, publicity, publication and promotion expenses.

(5) Expenses related to "commercialisation" of completed R&D projects. (No expense in the first three years since R&D projects were still in their early stages)

(6) This covers operational expenses on human resources related items, insurance, information technology, legal and audit fees, office expenses, utilities, etc.

(III) Hong Kong R&D Centre for Logistics and Supply Chain Management Enabling Technologies (LSCM)

	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Total
	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000
Staff	5,139	9,602	6,709	8,000	8,000	14,436	14,997	15,609	82,492
Equipment and other capital cost	766	208	306	155	155	252	263	275	2,380
Other direct costs	2,214	3,063	7,185	7,341	7,341	14,656	15,184	15,760	72,744
- *Publicity/ promotion*	159	298	300	824	824	1,378	1,420	1,466	6,669
- *marketing/ commercialisation*	159	298	300	824	824	1,583	1,625	1,671	7,284
- *Administrative support and others*	1,896	2,467	6,585	5,693	5,693	11,695	12,139	12,623	58,791
Total expenditure:	8,119	12,873	14,200	15,496	15,496	29,344	30,444	31,644	157,616
Less: Income	81	2,974	2,717	3,500	4,740	3,700	3,900	4,100	25,712
ITF funding	**8,037**	**9,899**	**11,483**	**11,996**	**10,756**	**25,644**	**26,544**	**27,544**	**131,903**

Explanatory Notes –

(1) The revised estimates for 2006-07 to 2010-11 are higher than the 2005 estimates in staff costs due to more Centre-initiated research projects.

(2) The increase in operating expenditure for 2011-12 to 2013-14 is largely due to an increase in technology transfer activities and additional staff to support the following:

(a) IP and contract management;
(b) Technology transfer and commercialization;
(c) Business and industry development; and
(d) Project monitoring/University relations.

(3) Major sources of income between 2011-12 and 2013-14 will be from license fee of technology transfer, contract research and research administrative overheads.

(IV) Nano and Advanced Materials Institute (NAMI)

	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Total
	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000	$'000
Staff	6,930	7,265	9,480	21,324	22,391	21,305	22,370	23,489	134,554
Equipment and other capital cost	311	99	410	5,122	700	700	700	700	8,742
Other direct costs	3,196	3,234	3,472	7,119	7,715	7,774	7,916	8,156	48,582
- *Publicity/ promotion*	32	41	190	374	393	412	433	455	2,330
- *marketing/ commercialisation*	0	0	60	252	265	278	292	306	1,453
- *Administrative support and others*	3,164	3,193	3,222	6,493	7,057	7,084	7,191	7,395	44,799
Total expenditure:	10,437	10,598	13,362	33,565	30,806	29,779	30,986	32,345	191,878
Less: Income (1)	70	45	443	300	300	300	300	300	2,058
ITF funding:	**10,367**	**10,553**	**12,919**	**33,265**	**30,506**	**29,479**	**30,686**	**32,045**	**189,820** (2)

Explanatory Notes –

(1) The income includes fees collected from testing services and charges collected for overheads of NAMI projects. From 2009 and thereafter, an annual income of $300,000 is expected from contract research work.

(2) The increase in funding request for 2006-07 to 2010-11 as compared to that approved by the FC in 2005 is mainly attributed to the large-scale collaborative projects on PV technology. This increase includes $11 million per year for new staff, one-off $4 million for capital expenditures for laboratory and office facilities at the Hong Kong Science and Technology Parks (HKSTP), $3 million per year for rent and utilities at HKSTP, $1 million per year of contingency funds and $0.6 million per year for public relations and commercialization expenses. For 2009-10 and 2010-11, $2 million per year is required for the project support team. The budget for 2011-12 to 2013-14 comprises an increase in annual staff costs of $11 million for various large-scale projects.