

For Information  
on 10 March 2003

## **Legislative Council Panel on Commerce and Industry**

### **Progress of the Work of the Applied Science and Technology Research Institute**

#### **Purpose**

This paper reports on the progress of the work of the Hong Kong Applied Science and Technology Research Institute Company Limited (ASTRI).

#### **Background**

2. The establishment of ASTRI was one of the major recommendations of the former Chief Executive's Commission on Innovation and Technology chaired by the late Professor Tien Chang-lin.

3. ASTRI was established in 2000 to perform the following public mission -

- (a) to perform relevant and high quality research and development (R&D) for transfer to industry;
- (b) to enhance Hong Kong's technological human resources development;
- (c) to be a focal point for attracting outside R&D personnel to work in Hong Kong;
- (d) to act as a spawning ground for technology entrepreneurs;
- (e) to promote greater application of technology in industry; and
- (f) to provide a focal point for industry-university collaboration.

4. ASTRI has commenced operation in leased premises since September 2001.

5. Members were informed of the progress in the establishment of the Institute in December 2001<sup>1</sup>.

### **Overview of Progress of ASTRI**

6. Since the commencement of operation in September 2001, ASTRI has continued to develop and consolidate its research and institutional capabilities. Major progress includes -

- (a) the development and commencement of six research projects within ASTRI's approved R&D programme. More details are provided in paragraph 8 below;
- (b) the recruitment of so far about 90 research staff and 25 administrative and supporting staff to support its R&D programme. The research staff come from the areas of photonics, software design, integrated circuit design and wireless communications. These are high calibre researchers, many of whom have impressive track records in technology development and would not otherwise have come to Hong Kong if not for the opportunities being made available to them at ASTRI. Other than technical competence, ASTRI has a small administrative team to deal with corporate functions including business and financial management, business development and commercialisation matters; and
- (c) the forging of collaboration with the local universities in conducting research projects. At present, such collaboration partnership has been established with the Hong Kong University of Science and Technology, the Chinese University of Hong Kong, the Hong Kong Polytechnic University and the City University of Hong Kong. Besides, ASTRI also leases research facilities and equipment from the universities,

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<sup>1</sup> LC Paper No. CB(1)580/01-02(02) – Applied Science and Technology Research Institute

as appropriate, in conducting its research projects having regard to the projects' requirements. Separately, ASTRI provides local university students with training opportunities in technological research in summer vacation with a view to assisting in nurturing Hong Kong's technological human resources.

7. In the coming year, apart from developing and undertaking new research projects, ASTRI will continue to enhance its institutional and research capabilities; strengthen its corporate governance; establish its business policy; and promote the transfer of technology and R&D deliverables to industry for commercialisation.

### **ASTRI's R&D Programme**

8. ASTRI's research foci are photonics technologies, wireless communications, integrated circuit design, Internet software and biotechnology. At present, ASTRI is carrying out six research projects, as follows -

- (a) for the research area of Internet software – one project has been carried out to develop a technology to enable interactive learning of spoken English on Internet and will be completed shortly;
- (b) for the research area of photonics technologies – three projects are being carried out and are scheduled for completion by early 2004. These projects aim to help ASTRI establish a world class packaging capability on specialized communication devices; and
- (c) for the research area of wireless technologies - two projects are being carried out. These projects aim to improve the performance of wireless antennas and voice/data communications within an enterprise.

9. The total project funding for these six projects is \$75.2 million.

10. To pave the way for the transfer of the technologies developed from its first projects to industry for commercialisation, ASTRI is actively engaging potential customers to validate the technologies and making arrangements to promote project deliverables developed from the Internet software as well as some of the photonics projects.

11. ASTRI will continue to initiate projects within its approved R&D programme.

### **Funding and Financial Control Mechanism**

12. ASTRI is a subvented organization. It is provided with an annual recurrent subvention, in the form of an annual block grant, to meet its day-to-day operating expenses. The subvention in the 2002/03 financial year amounts to \$86.8 million. To ensure that the public funds are used properly by ASTRI, the Administration and ASTRI have entered into a Memorandum of Administrative Arrangements (MAA) on the administration of the recurrent subvention. In essence, ASTRI is required to observe the general rules on the use of the subvention that are normally applied to other subvented bodies.

13. To support its research projects, ASTRI has to apply to the Innovation and Technology Fund (ITF) for funding. To ensure that such project funding is properly spent in accordance with the scope and ambit of the ITF, the Administration and ASTRI have entered into a separate MAA stipulating the framework for the relationship between the Government and ASTRI on the administration of the funds and set out the responsibilities of ASTRI. In general, ASTRI will need to observe the general rules on the use of the ITF funding that are applied to other ITF recipient organizations. Necessary checks and balances, e.g. the requirements of submission of half-yearly progress reports, final report, annual audited accounts and final audited accounts to the Government, have been incorporated into the MAA to ensure transparency and public accountability of ASTRI on the use of the funds.

14. The approving procedures of ASTRI's research projects follow those applied to the ITF projects. The Administration has delegated authority to approve individual projects not exceeding the

prevailing funding ceiling of a Category D project in the Public Works Programme (currently at \$15 million) while projects exceeding that funding ceiling shall require the approval of the Finance Committee of the Legislative Council. So far, ASTRI's individual research projects within a research initiative require funding of less than \$15 million and are therefore approved by the Administration under delegated authority. The approval has been given after the careful scrutiny of the Technology Committee and the Board of ASTRI. ASTRI will continue to initiate new projects within its approved research initiative. There may be cases in future that projects proposed may cost more than \$15 million. In those circumstances, we are required to submit the project proposals to the Finance Committee for approval under the current arrangement. We are reviewing this arrangement to see whether this would meet the needs of ASTRI in furthering its R&D objectives, and if necessary may present a case to the Legislative Council for waiving the requirement in future.

15. Furthermore, ASTRI is subject to examination by the Director of Audit of its accounts and the economy and efficiency with which ASTRI has expended its resources in performing its functions and exercising its powers.

### **Corporate Governance**

16. ASTRI is a publicly-funded organisation. It has a public mission to fulfil and requires a significant amount of resources for its R&D activities. Given the importance of its role and function, there is a strong need for ASTRI to establish a robust corporate governance system and culture to safeguard public interest.

17. ASTRI's operation is monitored at two different levels - at the higher level by its Board of Directors, and at the second level through a robust corporate governance system to manage its day to day operation.

18. ASTRI's Board of Directors gives strategic direction to the Institute regarding its development, research direction, business policy, etc. Currently, the Permanent Secretary for Commerce, Industry and Technology, the Permanent Secretary for Financial Services and the Treasury, and the Commissioner for Innovation and Technology are the

Official Directors of ASTRI. Apart from the Government Directors, the Board comprises non-official members coming from different sectors, ranging from academics and professionals to industrialists and businessmen. This is to ensure that the Board possesses the necessary expertise capable of providing steer to ASTRI in determining its goals and directions. Guidelines for handling potential problems on conflict of interests and reporting pecuniary interests are in place for directors' observance.

19. At the second level, ASTRI is required to set up corporate governance policy and measures that are commensurate with its public mission and operation. Measures include proper R&D project management (e.g. R&D project selection process, budget review process and project execution and quality management process), prudent financial management, rigorous internal audit system (the audit covers compliance with operational procedures, guidelines), transparent recruitment process, open and fair procurement system, and proactive publicity policy. We are monitoring the setting up of the required policy and measures.

### **Business Policy**

20. ASTRI's operating strategy is to perform relevant and high quality R&D for transfer to industry for commercialisation through promoting spin-offs of its successful research projects and licensing arrangements.

21. ASTRI will need to establish an effective, competitive and accountable policy framework for effecting technology transfer to industry. ASTRI is working to develop such policy framework which could generate long-term social and economic benefits to Hong Kong by upgrading the technological level of our industry and creating new technology-based industries on the one hand, and could allow ASTRI to recover its investment cost on the other.

### **Evaluation of ASTRI's Performance**

22. Given ASTRI's public mission, the performance of ASTRI should not be narrowly assessed only by the financial return on the public

funds devoted to it but should also be assessed by the long term social and economic benefits brought by ASTRI's endeavours. Hence, ASTRI's performance may be evaluated in due course by yardsticks including the number of technology transfer activities, joint ventures or start-ups created, number of jobs created and income and equity holding from the licensing of the intellectual properties.

### **Advice Sought**

23. Members are invited to note the progress of work of ASTRI.

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